UNIVERSITY of INDIANAPOLIS®

School of Occupational Therapy

PROMOTING HOLISTIC CARE THROUGH OCCUPATIONAL THERAPY IN THE HIGH-RISK MATERNITY TOWER

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ABSTRACT

High-risk pregnancy is a growing concern in the United States resulting in complications in both the mother and the fetus. At IU Health Riley Hospital, the maternity tower was built in 2022, to provide medical care to patients with high-risk pregnancies, staffing maternal fetal medicine (MFM) doctors, obstetric certified registered nurses, occupational therapists, physical therapists, social work, and more, to help provide the highest-grade medical care possible. Nurses in the maternity tower stated that most patients struggle with their mental health, during their prolonged hospital admissions. Currently, occupational therapists are treating antepartum patients with limited research backing their interventions. A survey was given to a total of 14 patients, resulting in 14/14 patients feeling worried, anxious, or on edge and having trouble finding activities meaningful to them. The purpose of this project is to identify a patient's needs through the lens of occupational therapy, providing an intervention binder to help guide sessions, and creating a handout for carpal tunnel syndrome, following a patient case study.

INTRODUCTION

Approximately 6 million pregnancies occur each year in the United States ("Data & Statistics- Reproductive Health", 2021). High-risk pregnancies are prevalent and a growing concern that can lead to extended hospital stays. The identification of a high-risk pregnancy along with prolonged hospitalization may introduce additional maternal anxiety or depressive symptoms due to anticipation and unknowingness of the future.

I worked alongside healthcare professionals at IU Health Riley Hospital to create and implement mental health interventions for high-risk pregnant patients. While Riley Hospital's focus is on pediatric care, the hospital added on a new maternity tower to offer a full spectrum of family-centered services. Currently, there is only one mental health assessment currently given to patients upon admission, the Edinburgh Postnatal Depression Scale, which determines the need for additional mental health counseling via perinatal mood therapists. Currently, there are limited mental health resources and interventions being provided to high-risk ante patients.

Occupational therapists (OTs) are trained and educated to provide treatment for patients with mental health; it is within their practice through the holistic approach. The goal for my project is to gather mental health data of patients through a questionnaire at the beginning of admission, which contains questions adapted from various mental health screenings. I created a packet including cognitive behavioral therapy resources and mental health intervention handouts for occupational therapists to use and give to patients to decrease the overall anxiety and depression of the prolonged admission.

I also completed a case study on a patient who did not have mental health concerns either in the antepartum or postpartum but experienced exacerbated carpal tunnel symptoms during the antepartum and postpartum periods.

BACKGROUND

As a group, anxiety-related disorders are the most common of all psychiatric conditions (Fairbrother et al., 2017). Concerning pregnancy, Fairbrother et al., (2017) found that anxiety or depression onset in pregnancy was five to seven times greater for women experiencing a medically moderate or high-risk pregnancy compared with women experiencing a medically low-risk pregnancy. Anxiety, depression, and other stressful emotions can be harmful to both the mother and the unborn baby. While high-risk patients have access to psychiatric professionals within the hospital setting, the consultation referral rates are very small at about 0.3% (Byatt et al., 2014). Specifically, at Riley Hospital, the only assessment given to patients upon arrival is the Edinburgh Postnatal Depression Screening. If a patient scores high enough, they are referred to a perinatal mental health therapist who then consults on their case.

Women struggle as they endure managing different emotions, managing other health issues, appraising others, and worrying about how they are perceived in the hospital (Satyanarayana et al., 2011). This can lead to amplified distress and contribute to women's emotional exhaustion, sense of being overwhelmed, and stress burden. Riley's occupational therapist in the maternity tower stated that the mothers on the high-risk unit are at risk for anxiety and depression because 1) they are a high-risk pregnancy, 2) all sense of meaning is lost, 3) they no longer can participate in meaningful occupations that once ruled their life (K. Salter, personal communication, March 2, 2022).

It was also found that women were scared about the potential outcomes of their pregnancies and often overwhelmed in their attempts to cope with their emotions (McCoyd et al., 2020). While these women are trying to avoid stress and overcome their emotions, they are failing to do so with limited interventions and a lack of provided resources (McCoyd et al.,

2020). At Riley, social workers can provide support for patients and families, however, do not fully address anxiety or depression. Bereavement is also a mental health resource, but only in the case of an infant loss.

Maternal psychological and social stress during pregnancy can adversely affect the pregnancy outcome with conditions such as the increased risk of morbidity for the child, lower birth weight, and increased risk for preterm birth. Anxiety during pregnancy has also been found to be a strong predictor of postnatal depression (Fairbrother et al., 2017). Maternal stress during pregnancy is more than twice as common among women who gave birth preterm compared to women who gave birth at term (Lilliecreutz et al., 2016). Postpartum maternal anxiety has been associated with impaired adaptability, negative mood, and soothing difficulty in the infant (Fairbrother et al., 2017).

A study completed by Yeager, (2016), further investigated relaxation techniques used for antepartum mothers on hospital bedrest, and the results showed improvements in physical well-being and sleep, and positively influenced the occupational well-being of this population. Relaxation interventions have resulted in prolonged gestation and positive labor outcomes and improved sleep during pregnancy (Yeager, 2016). Another study explored the benefits of integrative relaxation techniques as they are "known to decrease depression, anxiety, and pain in clinical situations and may be beneficial for women hospitalized due to pregnancy" (Schlegel et al., 2016). While these studies give data for mental health interventions, the carry-out in the hospitals is not addressed. There is limited data on hospitals utilizing occupational therapy to address the mental health of antepartum patients.

Occupational therapists are trained in a holistic approach that takes into consideration the whole person, by being aware that both body and mind need to be considered ("Occupational

Therapy Practice Framework: Domain and Process—Fourth Edition," 2020). The referrals for occupational therapy are beginning to increase as the doctors are understanding the anxiety of the unknown and the effects of prolonged hospitalization. At Riley, occupational therapists receive referrals for prolonged admission (i.e., if they are here 2+ days). Residents decide if a patient would benefit from therapy, however, often consults with therapists at rounds to gain further insight. More patients are beginning to receive referrals due to the increase in occupational deprivation and increase of mental health worries. OTs currently assess a patient's independence with ADLs and functional mobility, and while also providing leisure exploration activities and coping mechanisms.

Nurses who work in the high-risk unit at Riley were given a one-question survey (see Appendix A) about the occupational needs of their antepartum patients. 10/10 nurses answered their patients would benefit most from mental health interventions during hospitalization. One nurse stated "oh definitely something related to mental health, every patient I have treated experiences anxiety while admitted (Cori, personal communication, January 26, 2023).

This project provides data as to why patients should receive occupational therapy referrals, while also providing holistic interventions for OTs to utilize to help support the patients as much as possible. Other health concerns, including musculoskeletal injuries, can be overlooked by doctors but would be addressed by an OT because they look at the whole person during the initial evaluation. This project will not only show how occupational therapy can be beneficial for antepartum and postpartum patients, but how to view all aspects of the patient's well-being.

THEORY

The Person-Environment-Occupation-Performance (PEOP) is a comprehensive analysis of the whole system contributing to occupational participation (Cole & Tufano, 2008). Information was gained through the lens of the PEOP model to ensure the maximization of occupational performance through intrinsic, extrinsic, and occupations during prolonged hospitalization. This model is centered on the individual and demonstrates how participation in occupation can be impacted by both the individual and the environment. Services provided to antepartum patients focus on their individual needs, their unique environments, and the occupations they need and want to perform.

The cognitive behavioral frame of reference emphasizes five aspects of life experience: thoughts, behaviors, emotion/mood, physiological responses, and the environment (Fenn & Byrne, 2013). These aspects are interrelated, meaning that changes in one factor can lead to improvement or deterioration in another (Cole & Tufano, 2008). When dealing with motivation and emotions, this frame of reference can restore functionality in daily activities. Antepartum patients often encounter a variety of different emotions due to the nature of their health state. CBT works to modify a person's thoughts through reinforcement to increase positive behaviors and activities. Interventions are used to encourage social support, talking through difficulties and other activities to decrease negative thoughts and increase positive behaviors (Fenn & Byrne, 2013). It's referenced as a cycle: thoughts create feelings, feelings create behaviors, behaviors reinforce thoughts. This FOR aligns with the PEOP model by showing how extrinsic (hospital) and intrinsic (anxiety) factors affect a person's occupational performance and integrate strategies to improve occupational performance (see Figure 1).

PROJECT

Project Design

This project was created because maternal health is an emerging area in occupational therapy, but there are many different types of maternal health. Specifically, in hospitals, there is the problem of delineating a difference between patients who would benefit from social workers, psychologists, or occupational therapists to treat the mental health of patients. The intent of this project is for professionals will understand how OT can be a holistic approach to treating the physical, mental, and emotional well-being of the patient during prolonged hospitalization.

When a patient is admitted to the hospital, not only does the environment change but also their individual needs and occupations. There are limited interventions and resources given to patients, even though they are 1) considered a high-risk pregnancy and 2) detached from their usual daily routines and life. A packet of mental health mediations was created, to help the patient have a sense of meaning, outside of "being the patient". Resources included in the packet were a daily mood tracker, daily habit tracker, and journal entries that can help guide cognitive behavioral therapy, individually and with an occupational therapist. An additional list of OT interventions was given to IU Health for occupational therapists to utilize with antepartum patients.

Project Implementation

The purpose of the project was explained to patients prior to participating in the project. If the patient agreed, they were given a pre-survey, containing twelve questions about their mental health over the past seven days and then given again right before, or right after delivery (see Appendix B.1). Inclusion criteria included all new patient referrals, to fill out the initial survey. While some patients are admitted until delivery, the length of stay varies between 1 week

to 8 weeks. The census of the maternity population varies daily, so it was difficult to ensure patients filled out both the pre- and post-survey. Data analysis includes 2 different categories: patients filling out only pre-survey and patients who completed both surveys with the mental health packet. The data collected allows professionals to understand the need for mental health interventions and promoting healthy well beings through the occupational therapy lens.

OUTCOMES

The survey given to participants included statements adapted from different mental health assessments, including Edinburgh Post Natal Screening (Levis et al., 2020), Antenatal (Psychosocial) Risk Questionnaire (Ruyak & Qaedan, 2018), and Beck's Anxiety Inventory (Beck et al., 1988). The survey was given to 14 participants, at the beginning of their prolonged hospitalization. The survey included eight statements rating the amount of anxiety participants felt being hospitalized and rating their overall emotions (Table 1A), and four questions regarding their positive well-being self (Table 1B). Data analysis of the returned surveys was completed via quasi-experimental qualitative statistics. Out of the first 8 statements, most participants agreed and chose "yes, all of the time" or "yes, most of the time" on two statements. These statements were: "I have felt worried, anxious, or on edge", "I have had trouble relaxing or finding something to do", and "I have blamed myself unnecessarily when things went wrong".

Mental Health Treatment Sessions

Each participant received one on one sessions with an occupational therapist at least one time a week. Treatment sessions were based on cognitive behavioral theory and talk therapy, allowing the patient to choose what they felt was most important to them that week. It was noted that most participants chose to talk about their past week, the struggles they encountered, and the questions they had about delivery or postpartum. Other sessions included activities to help

decrease depression that may arise with prolonged hospitalization, including a countdown chain to mark the days until delivery. Additionally, patients were provided education about the Caesarian delivery process and a NICU tour, to further decrease the anxiety leading up to their delivery date. Sessions lasted 20-30 minutes at a time, with participants verbalizing decreased anxiety and stress at the end of the session.

Physical Health Treatment Sessions

Participants also received assistance with functional mobility and activities of daily living (ADLs), if their endurance or activity tolerance was noted to be decreased. There were three participants that did not demonstrate mental health or functional mobility deficits but experienced exacerbated symptoms secondary to carpal tunnel or increased edema in their upper extremities (UE). Therapists were able to contact the resident to get a referral for prefabricated wrist splints or OP therapy at discharge. Therapists provided informal education regarding splint wear schedules, exercises to help decrease the pain and numbness felt in the patient's UE, positioning for postpartum and caring for the baby, and ways to reduce repetitive movements that may exacerbate symptoms. A case study (Appendix C) was performed on one patient, to further educate professionals on how OT is beneficial for patients with carpal tunnel, resulting in creating a carpal tunnel syndrome educational handout (Appendix D), to provide to patients.

Mental Health Interventions Binder

Further, a binder of mental health interventions (Appendix E) was composed of in-depth evidence-based research, regarding occupational therapy interventions to help guide treatment sessions beyond talk therapy.

SUMMARY

Being admitted to a high-risk antepartum unit has the potential to negatively impact the expectant mother and her participation in her daily routines and favorite activities. A review of the literature revealed that patients who are admitted for a prolonged period often demonstrate poor mental health, including anxiety and depression. Results of the questionnaire given to patients revealed poor mental status' including feelings of anxiety, worry, boredom, and self-blame. Patients can also face physical needs, including limited mobility and upper extremity disorders (i.e., Carpal Tunnel). All these needs could be met by an occupational therapist providing therapeutic interventions and holistic care to promote health and wellness and prevent disability in both the mother and the developing fetus. A binder of interventions was developed with the intent of assisting occupational therapists providing services to high-risk expectant women. Therapeutic interventions were researched in the areas of stress management and coping skills, exercise, and emotional health. Preparatory, purposeful, and occupation-based interventions enable occupational therapists to facilitate individual sessions for the benefit of expectant women during their high-risk pregnancies.

CONCLUSION

Completing the DCE project at IU Health Riley was an exciting learning opportunity, including program development and learning advanced clinical skills in an emerging practice area (maternity). Professionalism and clinical skills were gained, through talking with interprofessional disciplinaries including RNs, PTs, case managers, social work and MFM residents. The project overall serves to increase the number of referrals in the maternal population admitted for prolonged hospitalization, and to provide mental health activities and interventions for occupational therapists. The intent of this project was to increase the mental health of patients who are admitted for prolonged hospitalization through evidence based researched interventions. Future implications include completing further questionnaires to RNs and patient surveys, to ensure the patients' mental health is improving. Implications for occupational therapy as a profession include research behind occupational therapists treating the maternal population, and interventions specific to this population.

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TABLE 1A

Statements regarding the amount of anxiety patients felt being hospitalized and their overall emotions

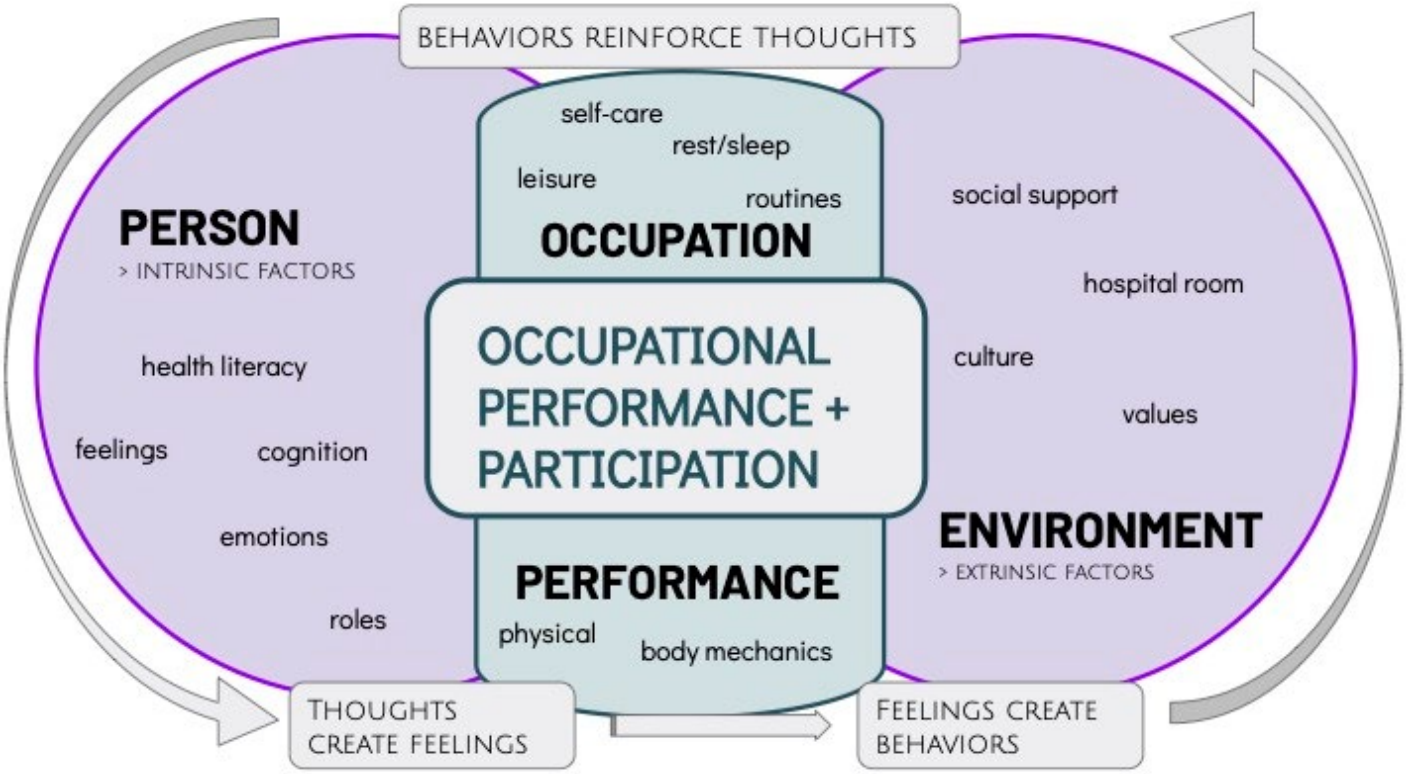
Statement	Yes, quite a lot	Yes, sometimes	No, not much	No, never
I have felt worried, anxious or on edge	9	4	1	
I have had trouble relaxing or finding something to do	6	6	1	1
I have blamed myself unnecessarily when things went wrong	1	7	6	
I have been so upset, that I have had difficulty sleeping		3	9	2
Things have been getting on top of me		4	9	1
I have questions that I have not received answers to	1	3	5	5
I have felt scared or panicky with no assistance from medical professionals			6	8
I feel I have no support from medical professionals during this hospitalization		1	2	12

TABLE 1B

Statements regarding their positive well-being self

Statement	Yes, quite a lot	Yes, sometimes	No, not much	No, never
I have looked forward with enjoyment to things	10	4		
I feel like I have a sense of worth, while hospitalized	11	3		
Thinking about anxiety, I feel prepared to give birth	4	6	4	
I feel equipped with my coping skills	5	8	1	

FIGURE 1


BEHAVIORS REINFORCE THOUGHTS
self-care
rest/sleep
leisure
routines
OCCUPATION
PERSON
> INTRINSIC FACTORS
health literacy
feelings
cognition
emotions
roles
OCCUPATIONAL PERFORMANCE + PARTICIPATION
PERFORMANCE
physical
body mechanics
social support
hospital room
culture
values
ENVIRONMENT
> EXTRINSIC FACTORS
THOUGHTS CREATE FEELINGS
FEELINGS CREATE BEHAVIORS

APPENDIX A

What type of occupational therapy interventions would your ante patients most benefit from?

Assistance with ADLs (Showering, bathing, functional mobility)

Mental health interventions

Receiving adaptive equipment to assist patients with ADLs (shower chair, BSC)

APPENDIX B.1

The antenatal mental health survey that was given to patients pre- and post-project implementation.

I have looked forward with enjoyment to things a) Yes, quite a lot b) Yes, sometimes c) No, not much d) No, not at all	**I feel equipped with my coping skills** a) Yes, quite a lot b) Yes, sometimes c) No, not much d) No, not at all
I have felt worried, anxious or on edge e) Yes, quite a lot f) Yes, sometimes g) No, not much h) No, not at all	**I have questions that I have not received answers to** a) Yes, quite a lot b) Yes, sometimes c) No, not much d) No, not at all
I have had trouble relaxing or finding something to do a) Yes, quite a lot b) Yes, sometimes c) No, not much d) No, not at all	**I have felt scared or panicky with no assistance from medical professionals** a) Yes, quite a lot b) Yes, sometimes c) No, not much d) No, not at all
I have blamed myself unnecessarily when things went wrong a) Yes, most of the time b) Yes, some of the time c) Not very often d) No, never	**I feel like I have a sense of worth, while hospitalized** a) Yes, quite a lot b) Yes, sometimes c) No, not much d) No, not at all
I have been so upset, that I have had difficulty sleeping a) Yes, quite a lot b) Yes, sometimes c) No, not much d) No, not at all	**Thinking about anxiety, I feel prepared to give birth** a) Yes, quite a lot b) Yes, sometimes c) No, not much d) No, not at all
Things have been getting on top of me a) Yes, quite a lot b) Yes, sometimes c) No, not much d) No, not at all	**I feel I have no support from medical professionals during this hospitalization** a) Yes, quite a lot b) Yes, sometimes c) No, not much d) No, not at all

APPENDIX C

Carpal tunnel syndrome case study

Introduction:

AB is a 30-year-old female, G3P2012 presenting after routine Caesarian delivery. Pregnancy complicated by obesity, chronic hypertension, previous Caesarian delivery x1, and mild asthma. Delivery was uncomplicated. AB was routinely referred to only physical therapy for a safe discharge plan to home. AB complains of increased bilateral edema, pain and numbness and tingling in bilateral hands (primarily digits 1, 2, & 3) that travels up forearm and arm all the to the shoulder. AB was diagnosed with carpal tunnel syndrome in 2017 and was given wrist cock up splints to alleviate the pain. She states the symptoms increased, thus she deferred wear at the time. AB is a painter and gardener by trade, of which requires repetitive movements of the wrist. Symptoms have waxed and waned since diagnosis. She noticed increased pain, numbness, and weakness in 3rd month of pregnancy and complains mostly about decreased hand strength and fine motor skills. Upon delivery, she noticed her hands, wrists, and forearms to be edematous limiting function. As a mother with a newborn, she has many movements that are repetitive when caring for baby including breast pumping, breast feeding, changing diapers, while still caring for another toddler at home.

Recommendations and implementation plan:

This occupational therapist completed chart review and met with the patient on post-op day 2, where she complained of the symptoms and was worried about her ability to care for baby and other child at home. This therapist supplied her with bilateral prefabricated wrist cock up splints to help decrease the symptoms she is feeling. Education was provided to AB to ice and rest as able, delegating care for baby to friends and family as able, as well asking doctors about medication for pain management. This therapist also provided AB with an outpatient OT referral if symptoms do not subside with splint wear and rest.

Alternatives and decision criteria:

Occupational therapy can provide different treatment options for patients with carpal tunnel syndrome. Because this patient was close to discharge, the therapist deferred providing exercises to the patient due to the inability to ensure patient was completing exercises adequately. Custom splints can be made for patients; however, because of the acuity of exacerbation, it was more realistic for the patient to try prefabricated splints versus custom splints. Furthermore, higher doses of pain medication can be given to the patient to elicit pain management, however AB planned to breastfeed, which could transmit higher pain medication to the newborn, which can affect the newborn negatively. Outpatient OT referral was recommended to the patient, however, was not required due to the circumstances AB was going home with the role of taking care of a newborn and toddler child.

Analysis:

AB explained her concerns to physical therapy which warranted an occupational therapy evaluation. The evaluation was completed one day prior to AB being discharged home,

thus limiting the treatment plan for carpal tunnel syndrome. If AB would have been initially evaluated by the occupational therapist, course of treatment may have been different. Exercises could have been given to the patient with assurance of completing them correctly. Further pain management could have been discussed with the doctor to ensure the patient was getting the best treatment course.

Conclusion:

AB was given proper education and resources to help alleviate pain and numbness and weaknesses that is a result of carpal tunnel syndrome. If occupational therapy was referred initially, treatment course and discharge plans may have been different, resulting in further relief. It also would have been beneficial if the patient was given a handout explaining the disorder with recommendations available to refer to. Though the therapist provided education, we are unable to say whether the patient can remember all information provided, with no handout to refer to. This case study was intended to provide education and data to enable carpal tunnel handouts to be created and given to patients to ensure recommendations are remembered and able to be effectively carried out when returning home.

Appendix D

CARPAL TUNNEL SYNDROME

A common disorder that occurs when the median nerve, which passes through the wrist, becomes compressed.

What can cause carpal tunnel?

- Frequent, repetitive movements involving a bent elbow or wrist
- Increased swelling of hand, wrist, or arm

What are the symptoms?

This disorder most often affects the thumb, index, and middle fingers. You may feel **numbness, tingling, weakness,** or **pain** in your hand and wrist. Your fingers might feel useless, or you might wake up and feel you need to "shake out" your hand or wrist.

Treatment options:

- Wrist brace + schedule: _____
- Ice
- Rest
- Exercises (see next page for pictures and explanation)
- Ask your doctor about medication for pain and swelling
- Changing the way, you position yourself when caring for baby (see pictures on next page for tips)

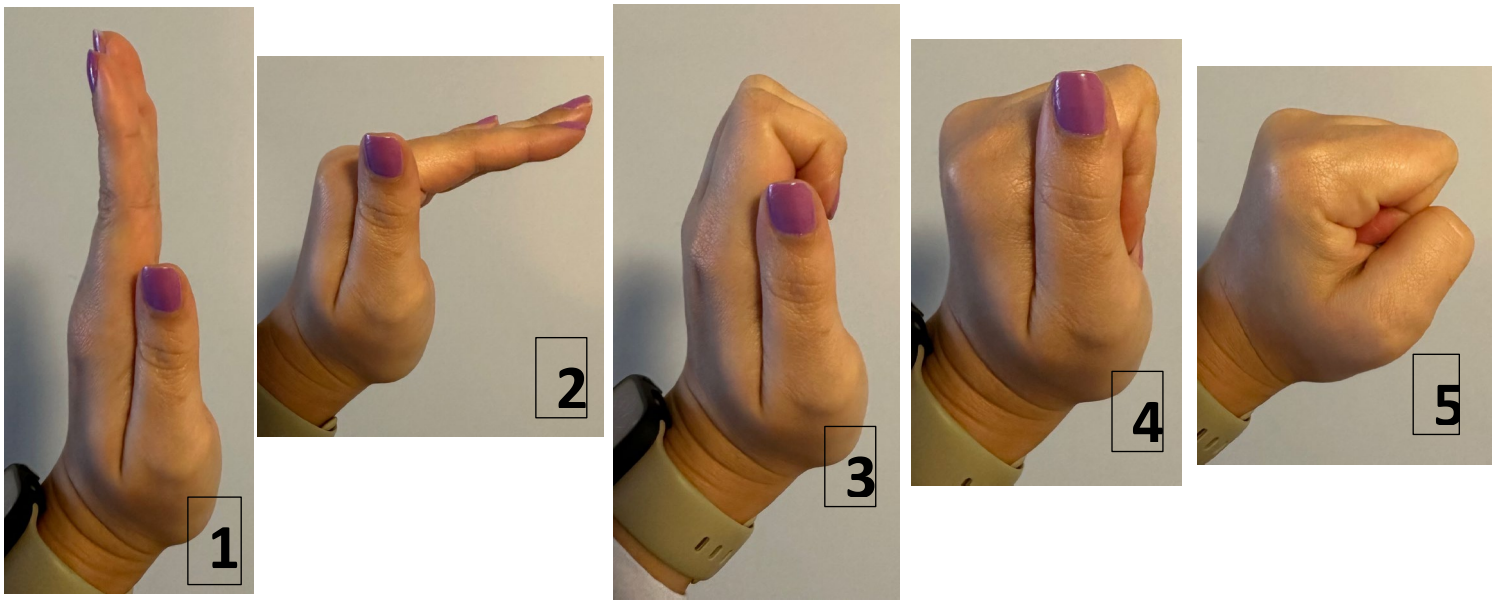
What if my symptoms don't improve?

Outpatient occupational therapy (OT) can provide further treatment including positioning, pain management, exercises, custom splinting. Ask your OB or PCP about an outpatient OT referral or call _____.

What can I do to decrease the symptoms after having a baby?

- Keeping wrist and elbow in natural positioning during rest
- Avoiding motions that bend the wrist or elbow a lot, when doing self-care and caring for baby
- Asking for help from others when able
- Keep the affected arm propped on pillows when not using
- Using the arm when able, to give the affected arm rest when able

Exercises (with explanation) to help decrease the symptoms:
<u>Complete these exercises 4-5x/day</u>



1. **All fingers straight, including thumb**
2. **Bend fingers at bottom knuckles, while keeping the top and middle knuckles straight, thumb straight**
3. **Bend fingers at the top and middle knuckles, while keeping bottom knuckles straight, thumb straight**
4. **Bend fingers at the middle and bottom knuckles, while keeping the top knuckles straight**
5. **Bend all knuckles, including thumb to make a full fist**

<u>Positions when caring for baby:</u>

When holding baby: keeping wrist straight, small bend in elbow, shoulders relaxed

When feeding baby: building up pillows to bring baby to you, straight wrist, small bend in elbow, relaxed shoulders

When breast pumping: holding pumps with fingers away from body, straight wrist, small bend in elbow, relaxed shoulders, LIGHT grip on bottle

Appendix E

MENTAL HEALTH INTERVENTION IDEAS FOR ANTEPARTUM PATIENTS

Creating a "worry box"

- *Write down all worries and emphasize **closing it**, to leave worries behind during stressful situations or when given bad news*

Starting small and simple rituals that can begin in the hospital and carried out at home

- *Breathing techniques when first waking up or before going to bed*
- *A special "drink" while sitting by a window and reflecting on the positives that happened during that day*
- *Learning a lullaby/song to sing to baby in-utero, in NICU, or at home before bed*
- *Listening to a poetry podcast 1x/day*

Filling the room with patient's favorite Bible verse, positivity quotes or new parenthood quotes

- *Dive into the internet with the patient, allowing them to take control with help from you as needed*

Creating a schedule each day with simple tasks that need to be done every day, as well as planned ultrasounds, etc (example on next page)

SUNDAY daily planner

Today's Date:

Write your three top goals for today

S C H E D U L E

6AM:
7AM:
8AM:
9AM:
10AM:
11AM:
12PM:
1PM:
2PM:
3PM:
4PM:
5PM:
6PM:
7PM:
8PM:
9PM:

List out new things the patient wants to learn to fill days during prolonged hospitalization (Nillni et al., 2018)

- *i.e., Crocheting, writing (poems), painting*

Creating a postpartum plan

- *Managing meal preparation*
- *Delegating household chores*
- *Delegating childcare (if applicable)*
- *Access to community support resources*

Reviewing Caregiver Education to avoid injury

- *Proper positioning when caring for baby*
- *Avoiding repetitive wrist/elbow flexion, tight gripping*
- *Asking for help from others*

Upper body ROM and strengthening exercises to prevent decreased activity tolerance

Yoga positions and stretches for mindfulness and movement (on next page)

a. **Laying on your back, legs up on a wall**
b. **Wide leg squat, toes pointing out**
c. **Ring sit, leaning on one arm, other arm reaches over, leaning to one side**
d. **Cat/cow in quadruped position**
e. **Laying on your back, knees bent, arms straight by side, bridge up**
f. **"W" position, open hips, leaning forward with both arms straight**
g. **Pillow under one bent leg, other leg straight, leaning forward onto pillow**
h. **Lounge position, one knee in front of the other, reaching up**
i. **Downward dog, both legs straight, leaning over with arms straight**
j. **Deep Squat, pushing legs out with arms**

**** FOCUS ON BREATHING IN THROUGH YOUR NOSE, OUT THROUGH YOUR MOUTH**
**** HOLD EACH POSITION FOR 15-30 SECONDS**

Practicing 5 senses to deescalate from stressful situations including bad news from doctors and increased anxiety leading up to delivery (Nillni et al., 2018)

NICU expectations and general education

Who will I see, caring for my baby?

Neonatologists	These are doctors specially trained in newborn intensive care.
Neonatal nurses	These nurses have advanced training in newborn intensive care. They work under the supervision of doctors and will likely be the people working most closely with your baby daily.
Neonatal nurse practitioner	This is a registered nurse who has received advanced education and specialized training in neonatal intensive care.
Neonatal respiratory therapists	These are members of the NICU team responsible for the therapeutic equipment and processes that help the babies breathe, such as ventilators.
Physical and Occupational Therapists	These health professionals are trained to work with premature infants on promoting positive touch and assessing possible movement issues.
Speech Therapists	These are professionals trained in speech and language problems. They often work with newborns in NICUs to help them with feeding, sucking, and swallowing problems.
Other specialists	NICU babies often require treatment from neurologists, cardiologists, pediatric ophthalmologists, or surgeons. These specially trained physicians are consulted to treat specific issues with a newborn's brain, heart, or eyes, etc.
NICU Social Workers	These professionals are trained to help families cope with the emotional, financial, and logistical aspects of a premature baby's NICU stay. Social workers can help with insurance difficulties and assist in making any special arrangements necessary for a baby's discharge or follow-up care.

Common types of equipment seen in the NICU:

Feeding tubes. NICU babies often require help feeding because they are not yet able to suck and swallow from a breast or bottle effectively. In these cases, a feeding tube is placed into the baby's stomach through the mouth or the nose to deliver feeds. Once a baby can suck, swallow, and breathe at the same time, they can attempt to breastfeed or bottle feed.

Isolettes. These are the small beds enclosed by clear, hard plastic in which the babies are placed. The temperature in these beds is controlled and closely monitored They also have windows on port holes, that allow nurses, doctors, and parents access to the babies.

Radiant warmers These are open isolette beds that warm babies with heat overhead, allowing easy access for doctors and nurses.

Intravenous catheters (IVs). An IV is a thin tube inserted into a vein with a small needle. Almost all babies in the NICU have an IV for administering fluids and medications. In younger babies, IVs may be placed in the baby's umbilical cord, hands, arms, feet, legs, or scalp.

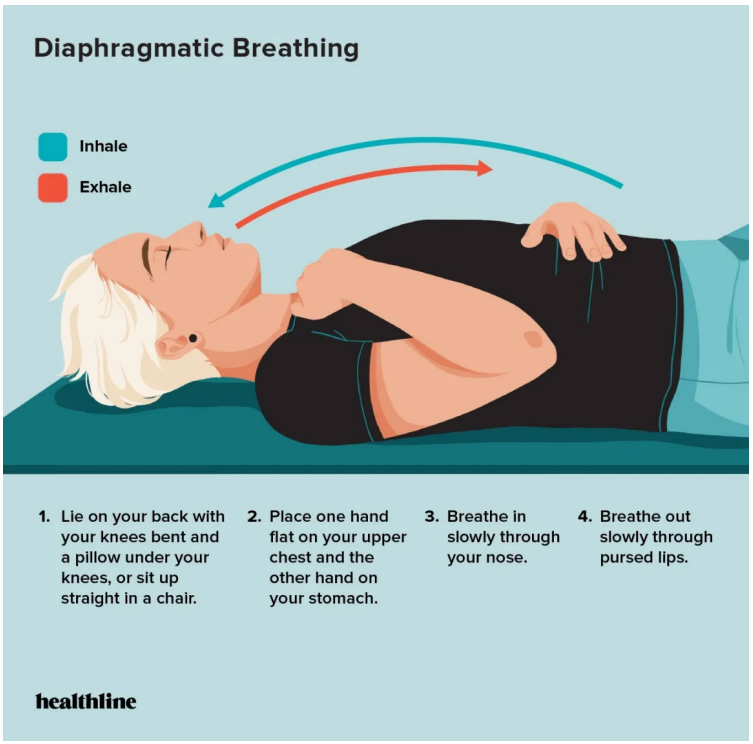
Monitors Infants in the NICU are attached to monitors, which measure their heart rate, blood pressure, breathing rate, and oxygen saturation in their blood.

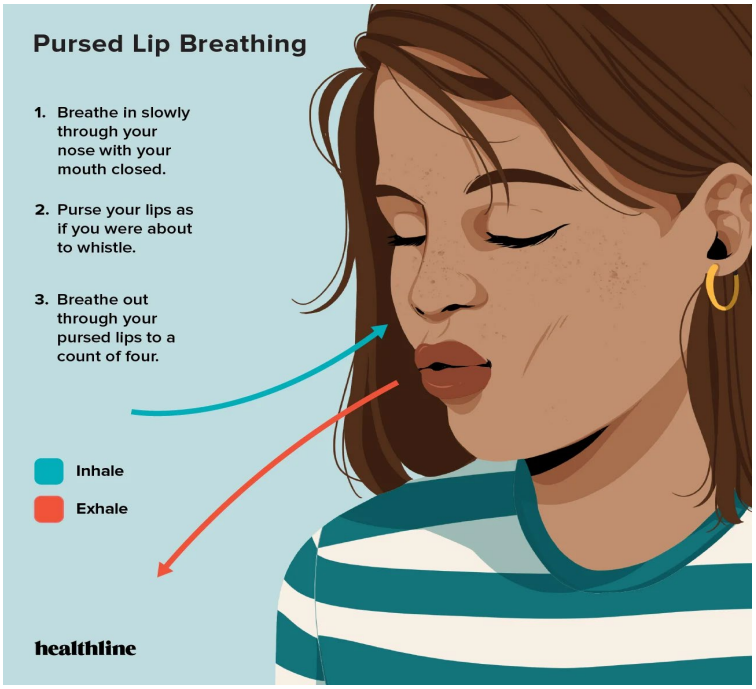
Phototherapy. Preterm infants sometimes have a high bilirubin level. This results in jaundice, or the yellowish discoloration of the skin and whites of the eyes. Special lights may be attached to a baby's isolette to help to lower the bilirubin level in the baby's blood.

Respiratory assistive devices: NICU babies may need extra help to breathe. There are many kinds of devices, including nasal cannula, CPAP, BiPAP, ventilators, all working together to help deliver the perfect amount of oxygen baby needs.

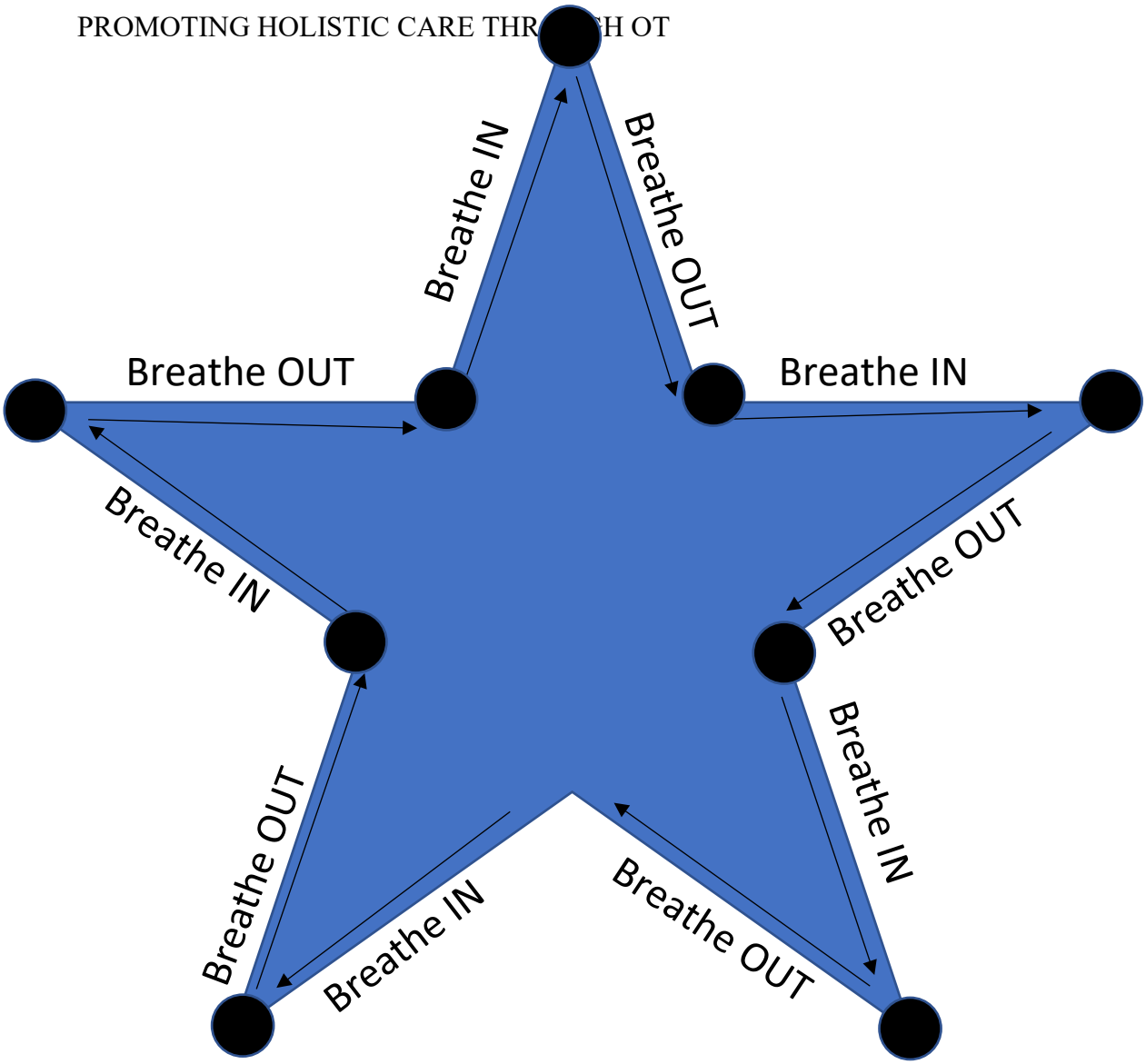
Breathing Exercises

(Yeager, 2019)





Medically reviewed by Adithya Cattamanchi, M.D., Pulmonology



Follow the star breathing exercise:

Slow breathing, IN through your nose, OUT through your mouth

Holding breath IN x3 seconds at black circles

Visual Imagery

Elisha Goldstein, Ph.D. and Stefanie Goldstein Ph.D.

Therapist leads the patient

- Find a private calm space and make yourself comfortable.
- Take a few slow and deep breaths to center your attention and calm yourself.
- Close your eyes.
- Imagine yourself in a beautiful location, where everything is as you would ideally have it. Some people visualize a beach, a mountain, a forest, or a being in a favorite room sitting on a favorite chair.
- Imagine yourself becoming calm and relaxed. Alternatively, imagine yourself smiling, feeling happy and having a good time.
- Focus on the different sensory attributes present in your scene so as to make it more vivid in your mind. For instance, if you are imagining the beach, spend some time vividly imagining the warmth of the sun on your skin, the smell of the ocean, and the sound of the waves, wind and seagulls. The more you can invoke your senses, the more vivid the entire image will become.
- Remain within your scene, touring its various sensory aspects for five to ten minutes or until you feel relaxed.
- While relaxed, assure yourself that you can return to this place whenever you want or need to relax.
- Open your eyes again and then rejoin your world.

<u>For the patients who have other children at home, expressing sadness due to not be able to see other children:</u>

- Find a private calm space and make yourself comfortable.
- Take a few slow and deep breaths to center your attention and calm yourself.
- Close your eyes.
- Imagine yourself in your own home, where everything is as you would ideally have it. Some people think back to when their child was a baby, rocking them to sleep in a recliner, or playing outside with all of their children.
- Imagine yourself becoming calm and relaxed. Alternatively, imagine yourself smiling, feeling happy and having a good time.
- Focus on the different sensory attributes present in your scene so as to make it more vivid in your mind. The more you can invoke your senses, the more vivid the entire image will become.
- Remain within your scene, exploring its various sensory aspects for five minutes or until you feel relaxed.
- While relaxed, assure yourself that you can return to this place whenever you want or need to relax.
- Open your eyes again and then rejoin your world.

Guided Imagery

7 Tips for Creating Positive Mental Imagery
Traci Stein Ph.D., MPH

Therapist leads the patient

1. Decide on the end goal first.
2. With the larger goal in mind, write down each step needed to reach it. Be realistic and descriptive. For example, if the goal is to have a healthy baby and smooth delivery/recovery, create smaller goals to reach the end goal
3. Use multi-sensory imagery (seeing, hearing, sensing, smelling, tasting, as well as the feeling of moving). See yourself successfully in the labor and delivery room, filled with all the people that you love. Imagine the positive sounds you may hear of excitement, joy, newborn cries. Feel your body getting lighter and allow yourself to feel pride, joy, a sense of accomplishment as you lose those unwanted pounds. Hear yourself crying tears of joy.
4. Focus on both the observable changes and the inner changes
5. As you become aware of barriers to your goal, imagine leaving them behind. {I often suggest patients envision allowing ways of coping that no longer serve them to flow out easily with the breath and imagine them as dried leaves or other debris that can blow safely off into the distance.}
6. Use affirming, success-oriented language that is grounded in the present moment rather than in the future. So “I am happy, and enjoy exercise and nutritious foods,” rather than “I will be happy….”
7. Record yourself delivering the imagery. Your own voice lovingly encouraging you can be an extremely potent tool for creating change.

Identifying Emotions

Emotions A-Z:

Angry
Anxious
Aware
Ashamed
Amused
Apathetic
Aggressive
Alienated
Annoyed
Apathetic
Bashful
Bewildered
Bored
Critical
Confused
Creative
Content
Cheerful
Confident
Determined
Depressed
Discouraged
Disgusted
Disappointed
Daring
Delightful
Ecstatic
Excited
Embarrassed
Envious
Extravagant
Exhausted
Faithful
Furious
Foolish
Fascinating
Frustrated
Guilty
Helpless
Hurt
Hostile
Humiliated
Hysterical
Hateful
Insecure
Innocent
Intimate
Insignificant
Intelligent
Inferior
Inadequate
Joyful
Jealous
Loving
Lonely
Mad
Miserable
Negative
Nurturing
Optimistic
Paranoid
Peaceful
Powerful
Playful
Proud
Pensive
Puzzled
Relieved
Relaxed
Respected
Rejected
Sad
Scared
Submissive
Sleepy
Stimulating
Stubborn
Satisfied
Sure
Sentimental
Sorry
Shocked
Serene
Stupid
Selfish
Skeptical
Sexy
Trusting
Thoughtful
Thankful
Valuable
Weak
Withdrawn
Worthwhile

Use this list to have patients highlight emotions they are feeling and describe the specific situation as to why they are feeling it

Stimulation of Mother-baby bond (Wulff et al., 2021)

- *At 26 weeks, a baby may react to noises both inside and outside the mother's body and may be soothed by the sound of her voice.*
- *After 32 weeks, baby can recognize certain words*
- *As well as remembering certain sounds from their mother's language, babies may remember certain music played to them in the womb.*

Ways to promote mother-baby bonding:

- Talk and sing to your baby, knowing he or she can hear you.
- Gently touch and rub your belly or massage it.
- Respond to your baby's kicks. In the last trimester, you can gently push against the baby or rub your belly where the kick occurred and see if there is a response.
- Play relaxing and calming music to your baby. Music that mimics a heartbeat of around 60 beats per minute, such as lullabies, is useful.

Activity: Create a Pregnancy Memoir (Wulff et al., 2021)

Explain to the mothers(s) that the pregnancy experience is often forgotten once the baby is born. Creating a memoir of the pregnancy through letters, poems, or a book is one way to bond with the unborn baby and a way to remember the experience for years to come. Discuss possible poem and book titles.

Possible Titles:
1. When You Were Inside Me
2. The Day I Found Out About You
3. My Baby
4. My Pregnancy
5. You&Me
6. My Pregnancy Experience

ASK: How does it feel to express your emotions to your baby? What feelings do you have about sharing what you have written?

Pain management (beyond medication) (Yeager, 2019)

- *Deep breathing techniques*
- *Stretches for head, neck, back*
- *Repositioning throughout day*
- *Walking around unit*
- *Hot showers (if indicated)*

Massage (Yeager, 2019)

Identify where the pain is and factors that may lead to the cause (positioning, stress, tension, posture)

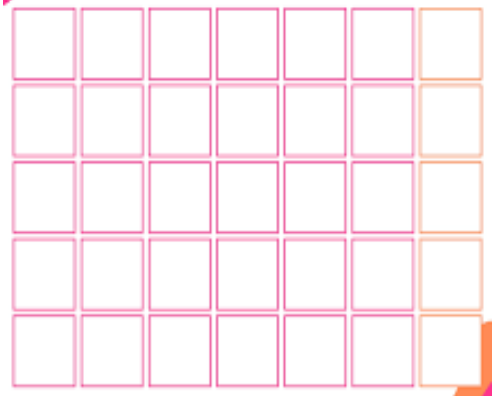
WHAT IS ON THE NEXT FEW PAGES:

WORKSHEETS FOR PATIENTS TO COMPLETE ON THEIR OWN

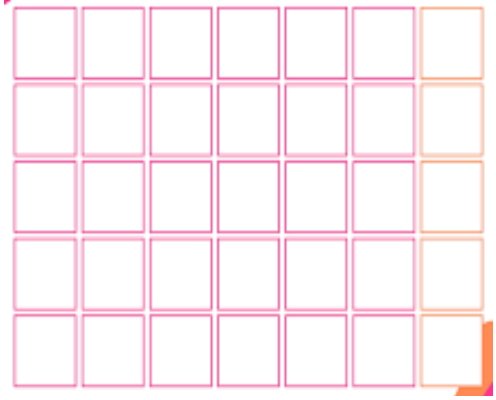
- *Journal prompt ideas*
- *Habit tracker for completing ADLs*
- *Letter to future self*
- *Place to write questions for medical professionals*

habit tracker

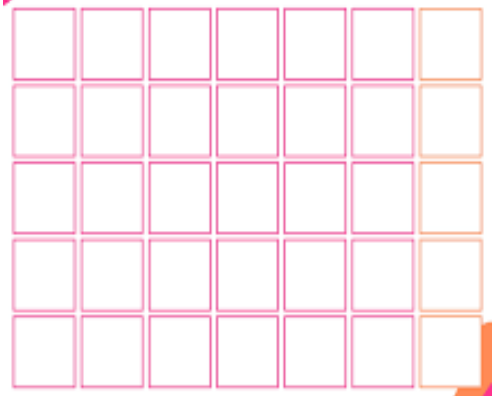
journaling



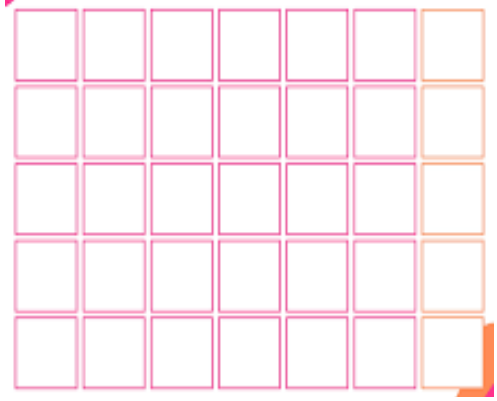
hydrate



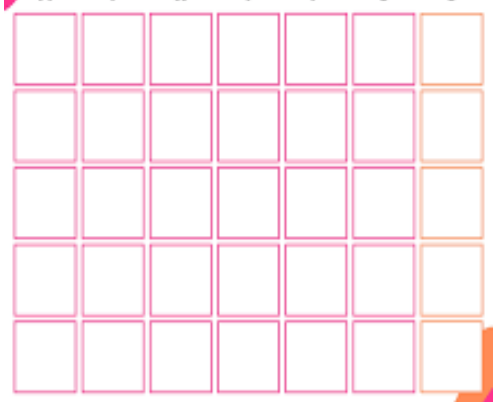
hallway walk



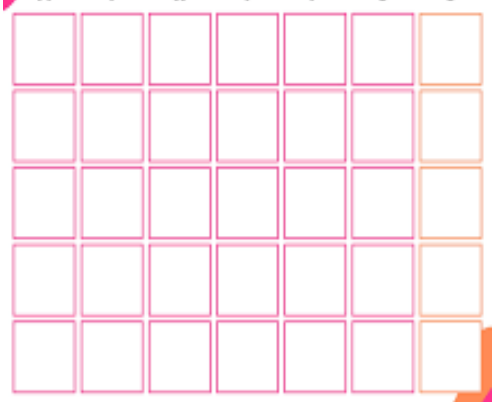
breakfast



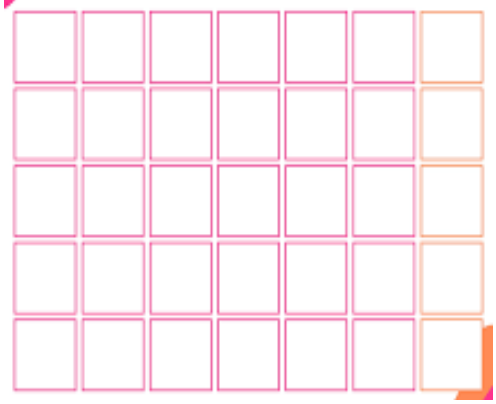
lunch



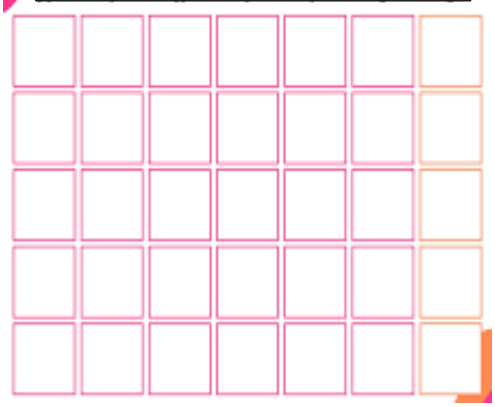
dinner



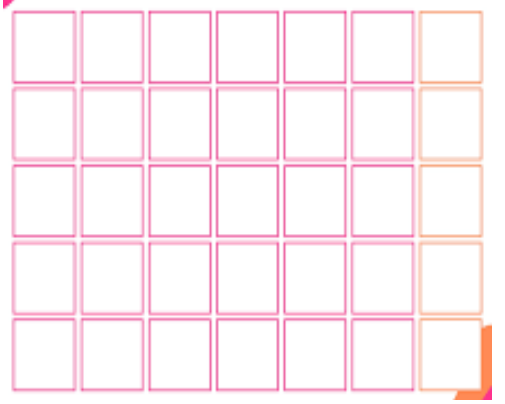
watch tv



read



music



daily activities to make me feel

BETTER

◊ BRUSH MY TEETH

◊ TAKE A SHOWER

◊ WALK IN THE HALLWAY

◊ DO SOMETHING I LOVE

◊ WEAR MY OWN CLOTHES

◊ TALK TO A LOVED ONE

◊ SIT IN THE CHAIR

Q & A

WHAT DO I WANT TO KNOW?

-
-
-
-
-
-
-
-
-
-
-
-
-

LETTER
TO: mama

Journaling IDEAS

- Daily thoughts
- Daily worries
- How do I rest
- Something good that has happened this week
- Fears you have overcome
- “I am thankful for…”
- Things you want to learn
- Goals for my future

- What kind of mama do I want to be?
- Letter to my role model
- How do I deal with sadness?
- New coping strategies I want to try

Appendix F: Doctoral Capstone Experience and Project Weekly Planning Guide

Week	DCE Stage (orientation, screening/evaluation, implementation, discontinuation, dissemination)	Weekly Goal	Objectives	Tasks	Date complet
1	**Orientation**	- **Introduce self to the rehab team and explain my project.** - **Get ready to implement project** - **Orient to Maternity Tower and Simon Family Tower**	**Needs assessment completed** **Work with CI to go over timeline.** **Learn charting system/write notes**	**Finalize MOU** **Meet with OT/PT in maternity unit**	**1.11.23**
2	**Screening/Evaluation**	- **Self-aware of evidenced based practice and literature review** - **Find top 2 mental health assessments for pre/post data** - **Get ready to implement project** - **Lead evaluation and treatments for simple cases**	**Search EBP and literature about personnel are vital to the high-risk antes** **Pros/cons to each mental health assessments relevant to antepartum** **Write up evaluation and treatment notes (2-3 day)**	**Set up meetings with nurses, PT, residents, social work** **Search mental health assessments relevant to antepartum**	**1.20.23**
3	**Screening/ Evaluation**	- **Meet with ante nurses with Mika to inform of project and project plans** - **Complete intro and background drafts**	**Write up nurse questionnaire to gain information for needs assessment**	**Finalize intro** **Begin writing background** **Continue gaining rapport with nurses**	**1.27.23**
4	**Implementation**	- **Gather all nurse data for needs assessment**	**Create/adapt questionnaire for ante patients**	**Search possible mental health**	**2.3.23**

		- Begin giving ante patients questionnaire	Figure out plan for population (who will receive the questionnaire versus the interventions)	assessments for hospitalized patients Continue searching EBP	
5	Implementation	- At least 5 patients to fill out questionnaire - Give MH resources to appropriate patients - Begin binder of intervention resources	Figure out what an "appropriate patient" looks like	Discuss with CI about possible patients Go to rounds	2.11.23
6	Implementation	- At least 5 patients to fill out questionnaire - Weekly check ins with patients - Add 2 resources to intervention binder	Discuss pt's progress with CI, RN, resident	Go to rounds EBP on MH inteventions	2.17.23
7	Implementation	- At least 3 patients to fill out questionnaire - Weekly check ins with patients - Add 2 resources to intervention binder	Discuss pt's progress with CI, RN, resident	Go to rounds EBP on MH inteventions	2.25.23
8	Implementation	- At least 2 patients to fill out questionnaire - Weekly check ins with patients - Create carpal tunnel handout draft	Discuss pt's progress with CI, RN, resident EBP on carpal tunnel in postpartum	Go to rounds EBP on MH inteventions	3.3.23

9	**Implementation**	**- At least 1 patient to fill out questionnaire - Weekly check ins with patients - Begin case study draft for carpal tunnel patient - Add 2 resources to intervention binder**	**Discuss pt's progress with CI, RN, resident Gather pt history, treatment**	**Go to rounds EBP on MH inteventions**	**3.10.23**
10	**Implementation**	**- At least 1 patient to fill out questionnaire - Weekly check ins with patients - Complete case study draft for carpal tunnel patient - Begin putting all interventions into binder**	**Discuss pt's progress with CI, RN, resident**	**Go to rounds Review references**	**3.18.23**
11	**Discontinuation**	**- Review edits recommended by CI for carpal tunnel handout draft - Clinical experience with ante and postpartum patients**	**Take pictures for handout**	**Get baby and bottle for pictures Create treatment plans**	**3.24.23**
12	**Discontinuation**	**- Editing case study draft**	**Put everything together (pictures, research)**	**Create treatment plans**	**3.31.23**
13	**Dissemination**	**- Final edits to carpal tunnel handout - Final edits to case study - Final edits to intervention binder**	**Send to peers for peer review**		**4.7.23**

14	**Dissemination**	- **Complete PowerPoint presentation** - **Tie up loose ends at site**			**4.14.23**