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Inpatient Prenatal Yoga Sessions for Women with High-Risk Pregnancies: A Feasibility Study

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Structured Abstract

Background: Antenatal hospitalization for pregnancy complications can result in significant stress for pregnant women and their families. Prenatal yoga has been investigated in the outpatient setting as a method to alleviate stress. This study was designed to investigate the feasibility of incorporating prenatal yoga into the inpatient environment for women hospitalized with pregnancy complications.

Study Design: High-risk women were recruited from the inpatient antepartum service at Tufts Medical Center (Boston, MA; March 2016 to February 2017) to evaluate the feasibility of an inpatient prenatal yoga program. The thirty-minute session was led by a certified instructor in a

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Disclosure

Dr. Alissa Dangel is a consultant and medical advisor for Mellitus, LLC.

(Note: Mellitus, LLC did not have any involvement in this study or preparation of this manuscript)

Disclaimer

Alissa R Dangel is currently a NIH TL1 Fellow at Tufts Medical Center, Boston, MA

No other authors reported any conflicts of interest.

The Give Back Yoga Foundation provided six yoga mats for this study.

Required for clinical trials – (this was a feasibility study)

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room adjacent to Labor and Delivery. Participants and antepartum nurses completed study questionnaires addressing logistics such as class duration and frequency. Perceived benefits of yoga were also explored.

Results: Thirty-nine women were found eligible for this study and were consented for participation. Of these, fifteen (38%) participated in at least one yoga session. Responses to the post-class questionnaire by study participants indicated that the thirty minutes allocated for the yoga class was appropriate. Of the eight participants who responded to the discharge questionnaire, all indicated that the class was helpful with regards to stress reduction. Completed questionnaires by the antepartum nursing staff (n=14) unanimously indicated that the yoga session was helpful for the patients and was not disruptive to medical care.

Conclusion(s): Prenatal yoga is a technique that has been currently limited to the outpatient setting. This study provides a foundation for continued investigation of inpatient prenatal yoga for women hospitalized with pregnancy complications.

Condensation

Investigation into the feasibility of incorporating a prenatal yoga program into antepartum care for high- risk patients hospitalized with pregnancy complications.

INTRODUCTION

Antenatal hospitalization for pregnancy related complications can result in significant stress for pregnant women and their families.^{1,2} In addition, such hospitalizations may last for several days during which time the patient's activity is often limited. Bed rest was routinely prescribed in the past which restricted activity even further. It has since been removed as a treatment measure³ however the appropriate level of activity for antenatal patients during hospitalization has not been established. While not all activities are appropriate during pregnancy, prenatal yoga is one option that has potential to be acceptable for this population and could help alleviate stress associated with antepartum hospitalization.

The modifications of prenatal yoga are designed to accommodate the physical changes associated with pregnancy. Although direct investigation of the effects of prenatal yoga on maternal and fetal physiologic parameters are limited, no significant deleterious effects have been noted. One study evaluated maternal and fetal parameters during a sequence of twenty-six yoga postures in pregnant women during their third trimester. The results demonstrated that maternal vital signs, pulse oximetry and uterine activity monitoring remained normal throughout the duration of the sequence. There was also no evidence of adverse clinical obstetric outcomes, such as contractions or vaginal bleeding, in the twenty-four hours following the yoga session as per a participant follow-up survey. No injuries or falls were reported during the study.⁴ Another study also supports maternal and fetal safety of yoga during the third trimester of pregnancy. This study found that fetal heart rate and activity testing was reassuring following a yoga session. Maternal blood pressure, heart rate and uterine artery doppler indices also remained within normal limits.⁵ This provides initial evidence that prenatal yoga is a reasonable type of modified physical activity that can be safely and successfully performed during pregnancy.

The effects of prenatal yoga during pregnancy on factors such as stress, anxiety, depression, physical discomfort, sleep and pregnancy outcomes have been investigated in the outpatient setting^{6,7}; however, no studies to date have evaluated the use of this activity in the inpatient setting.

Antepartum hospitalization adds additional stress to the already complex situation of a high-risk pregnancy. Boredom, among other issues such as separation from family and anxiety about the pregnancy, has been cited as one of the key contributors to the stress associated with an antepartum hospital stay.^{8,9} Qualitative results from a study of hospitalized high-risk antepartum patients revealed the desire of patients to have more organized activities as a means by which to relieve boredom.⁹ Given its positive effects on both physical and emotional health, prenatal yoga could be a therapeutic modality by which complications associated with physical and psychosocial consequences of antenatal hospitalizations could be reduced. Public perception of prenatal yoga is also favorable with 65% of women surveyed in a study evaluating exercise in pregnancy indicating they felt prenatal yoga was beneficial.¹⁰ Additionally, feasibility studies regarding the integration of inpatient yoga-based activities have recently been conducted in the pediatric hematology-oncology population^{11,12}, suggesting that this activity can successfully be conducted into an inpatient hospital environment. However, no studies on inpatient prenatal yoga exist.

Our objective was to study the feasibility of implementing an inpatient yoga-based activity for hospitalized pregnant women. The study was designed to evaluate patient and nursing receptiveness and impact on necessary inpatient care. While prenatal yoga could potentially provide a beneficial experience for hospitalized antepartum patients, there may be unforeseen barriers to the implementation of such an activity. Thus, we sought to obtain the foundational information from which to base subsequent investigations.

MATERIALS AND METHODS

Eligible subjects for this feasibility study were recruited from the antepartum inpatient service at a tertiary care academic medical center (Tufts Medical Center) in Boston, MA from March 2016 to February 2017. The medical center is equipped with a Level 3 NICU and cares for pregnant patients from Boston and the surrounding communities. The study was reviewed and approved by the Institutional Review Board at Tufts Medical Center (#11926). Informed consent was obtained from all participants, and medical clearance was requested from the participant's obstetric provider. General eligibility criteria included an anticipated inpatient antepartum admission with a duration of at least 72 hours in patients greater than 18 years old. Subjects also needed to have a reasonable command of the English language as the yoga session was conducted in English. Once general eligibility was determined, a detailed list of additional exclusion criteria was reviewed by the primary obstetric provider for each individual patient. Exclusion criteria included the following: continuous fetal monitoring, continuous intravenous infusion (ex. magnesium), strict bedrest, plan for pregnancy termination, non-reassuring fetal testing requiring intervention, active labor, active infectious disease (ex. MRSA or influenza), any other condition with which it would not be medically advisable to participate in yoga. Obstetric care providers could also exclude the subject at their discretion for reasons not included on the exclusion

form. After eligibility was established, the subject was formally consented by a study team member. The class size typically consisted of one to three participants. The session occurred once per week at approximately 10:30am in a conference room located close to the Labor and Delivery department. This time was chosen to allow for morning tasks such as rounding and medication administration to be completed prior to class. It also afforded the participants time for breakfast. The class was 30 minutes in duration and was taught by a certified prenatal yoga instructor who was briefed on the high-risk nature of the patients. (The yoga instructor was also a certified nurse practitioner with experience in prenatal care.) It was felt that 30 minutes would be enough time for participation without resulting in the patient being removed from the medical environment for an extended amount of time.

Given the high-risk nature of this population, the session was designed to focus on breathing and very gentle stretching (Table 1). Participation was voluntary, and therefore, enrolled subjects could choose not to attend the session at their own discretion. There was no limit on the number of sessions a subject could attend. Given the once per week schedule, those subjects with a longer hospitalization could attend multiple sessions if desired. If a subject was discharged and subsequently re-admitted they could attend the class again. Eligibility criteria were reevaluated at each admission.

As this was a single arm feasibility study, the analysis was descriptive in nature. It was designed to gather information related to the acceptability and logistics regarding the implementation of inpatient prenatal yoga classes. Participation of at least 50% of those participants consented and enrolled was used as the anticipated target of a worthwhile and ultimately feasible intervention. The study was initially proposed to enroll thirty participants; however, this number was increased to sixty when it became apparent that many patients were discharged prior to a class being conducted. Ultimately, the study was stopped prior to reaching our goal due to yoga instructor unavailability.

Following completion of each yoga session attended, participants were given a survey with four questions pertaining to the structure of the class (Figure 1). This short survey was designed specifically for this study to provide information on the ideal timing and duration of the class. There was also a space for participants to provide free text qualitative comments to capture additional thoughts on prenatal yoga in the inpatient setting. The questionnaire was provided after every class, including to participants who had attended a previous class in case they wished to include any additional comments. At the time of discharge, they were provided with an additional questionnaire to evaluate if the prenatal yoga had been beneficial for stress reduction or provided relief from physical discomforts. These questions were only asked after participation to collect exploratory information as no baseline information was collected prior to participation in the yoga session. An open-ended comments section was also included on the discharge questionnaire (Figure 2).

Nurses caring for patients who participated in the yoga sessions also completed a study specific questionnaire (Figure 3). The purpose of the nursing questionnaire was to determine the implications of the yoga session on disruptions or difficulties with the provision of the medical care required by this population. The questionnaire also had space for free text comments. Evaluation of the nurses' perspective on whether class attendance would be

disruptive to their patient care responsibilities, such as timed medication dosing and or blood pressure monitoring, was an important component of assessing the feasibility of a prenatal yoga program. As such, a specific question regarding optimal frequency was included on the nurse questionnaire.

Chart reviews of participants were conducted for up to seven days following the yoga session and through delivery if the records were available. Patients who were discharged still pregnant and did not return to Tufts Medical Center for prenatal care or delivery were not tracked. Reviews were limited to what was available in the participant's medical record at Tufts Medical Center. The protocol did not include any provisions for extended follow-up, and as such, no phone calls were made to patients who were discharged prior to the seven days, nor were any attempts made to obtain records from other facilities.

RESULTS:

During the study period a total of 64 patients were assessed for participation in the study, of which forty (63%) were consented. Of the twenty-four patients who were not consented, six were found to be ineligible based on the study criteria. One did not meet the inpatient requirement of an anticipated 72 hour stay, while the others had complicating clinical factors. Other patients who were not consented were uninterested in the study or were discharged prior to an opportunity to be consented. One patient with hyperemesis gravidarum participated in one yoga session; however, she did not complete the post-class questionnaire. As such, she was subsequently excluded from the study.

This yielded a total of fifteen participants out of thirty-nine who were eligible and consented for analysis and who had attended at least one yoga session for a participation rate of 38%. Three of the participants attended multiple sessions; two attended twice, and one who was hospitalized for an extended period of time attended five classes. Prior yoga practice among participants was limited as only six indicated they had any experience with yoga; four had participated in yoga prior to pregnancy, one had attended prenatal yoga prior to being hospitalized, and one reported participating in both yoga prior to and during her pregnancy before her hospitalization. Primary admission diagnoses for those who participated (n=15) included four with preterm premature rupture of membranes (27%), five with vaginal bleeding from a placenta previa or an abruption (33%), two with blood pressure or preeclampsia related issues (13%) and three with preterm labor or a short cervix (20%). In addition, there was one patient who was admitted for fetal monitoring of a twin pregnancy. For those who were consented but did not attend any of the yoga sessions (n=23), there were five with vaginal bleeding diagnoses (22%), three with preterm premature rupture of membranes (13%), seven with blood pressure diagnoses (30.4%) and seven with preterm labor or short cervix (30%). The twenty-third participant did not have the primary admission diagnosis specified. Reasons for non-participation varied. These included scheduling related reasons such as conflicts with medical tests such as non-stress tests (NSTs) or ultrasounds (4 participants; 17%) and no yoga session offered during the patient's admission (5, 22%). Patient focused reasons included the participant had a change in her clinical status precluding participation (3, 13%), such as one patient who developed spotting the day of the

class and was advised to defer participation, or they were simply not interested the day of the class (6, 26%).

Demographic information on the fifteen participants who provided responses revealed the majority were of white race (66.7%) and had private insurance (73.3%). The mean age of participants was approximately 33 years old. At the time of participation, the mean gestational age was 30 weeks with a range of 25 weeks to 35 weeks. Five of the participants were primigravidae, with an additional two who had previously been pregnant but not had a delivery at greater than 20 weeks of gestation. The remaining eight had at least one previous delivery at greater than 20 weeks, four of whom had prior preterm deliveries (less than 37 weeks) (Table 2).

All respondents indicated that the duration of 30 minutes was acceptable, as was the time of the session which was mid-morning (10:30am). Participants who attended multiple sessions maintained their responses to duration and time of day on the questionnaire. Comments regarding their experience with the yoga class were also collected via a free text comments field (Figure 1). Of the 15 program participants, the response rate on the discharge questionnaire was 53% (n=8). Of these eight respondents, three participants would have preferred the session to be 45 minutes in duration. One suggested it should be only 15 minutes. Although this study was primarily targeting the feasibility of incorporating yoga into the inpatient environment, some information was collected on the discharge questionnaire to assess if the participants had any thoughts with regards to how yoga may have been helpful to them during their hospitalization. No baseline information was recorded prior to the yoga session; however, those who responded to the discharge questionnaire reported that the class was beneficial to their overall well-being with regards to decreasing stress (100%). Some participants also indicated that it improved their sleep (50%) and reduced physical pain and discomfort (43%). Four participants reported that they utilized techniques taught in the session outside of class, including one patient who reported that she used the breathing technique during her delivery. Qualitative information was also collected via open-ended comment sections on the discharge questionnaire (Figure 2). Many of the comments reiterated themes voiced in the post-class questionnaire which relate to known issues present in hospitalized antepartum women such as boredom and the need for organized activities.⁹ A theme of appreciation for the opportunity to attend the yoga session was also evident in participant comments.

Nursing surveys were completed by fourteen nurses, all of whom indicated that the class did not adversely impact their ability to provide medical care for these patients. The majority of the nurses surveyed suggested that the optimal frequency of the class would be 2-3 times per week (11 of 14 respondents), compared to the once per week it was conducted during this study. All recommended that the program continue. They also indicated that they would recommend this program to other hospitals caring for antepartum patients. In addition, they felt that the yoga session in general was beneficial for the patients. Direct comments collected from the nurses as part of open-ended comments on the questionnaire were overall positive. They felt the patients enjoyed being able to leave their rooms and participate in an organized social activity (Figure 3).

Review of the yoga instructor's feedback revealed two adverse events occurred during the yoga class. One patient who was admitted for elevated blood pressure in the setting of chronic hypertension experienced dizziness and felt light-headed. She was given water, her symptoms resolved, and no further intervention was needed. Her blood pressure prior to the class was 131/88 and a few hours after the class was noted to be 121/72. The following day her blood pressure medication was decreased, and she was discharged from the hospital three days later. She was readmitted the following month with superimposed preeclampsia and was delivered a few days after that admission for worsening of her condition. The second patient, admitted with placenta previa, complained of chest-tightness and feeling light-headed. The yoga teacher instructed her to stop the activity, and she was brought back to her hospital room to rest. The instructor checked on her a short while later, and the participant reported she felt well. A nursing evaluation noted no contractions, leakage of fluid or vaginal bleeding. Fetal monitoring via a non-stress test was reassuring and reactive. No further medical intervention was necessary. Six days later the patient passed a dark blood clot. She was observed for another week and was subsequently discharged. This patient had also participated in the yoga class during a prior admission. Her subsequent admission, described above, was three days after participation in the first yoga class. She did not have any in-class events during her first yoga session. In addition to the two participants detailed above, three additional patients had events within the week following yoga participation which included contractions, bleeding and worsening of blood pressures (Table 3).

DISCUSSION:

Aspects of inpatient care provide challenges to participation as evidenced by our limited participation rate of 38%. Although participation did not reach the target of 50%, some of the barriers to participation could be overcome with minimal adjustments, such as an increased frequency of the class. Scheduling conflicts with medical tests or the lack of an available class during the patient's admission precluded nine participants (9 of 23 total non-participants) from attending a yoga session. As the study progressed, adjustments to the timing of a patient's medical care were considered to avoid conflicts with the yoga session. Nursing staff did not find this problematic, and as the study progressed, they actively worked to accommodate medical interventions to allow for participation.

Two participants experienced adverse events during the yoga session. The events were overall minor in nature and did not require any significant medical intervention. They also could have been the result of the underlying medical condition and the participant's pregnant status, not a direct effect of the yoga itself. The proximity of the class environment to Labor and Delivery allowed for expeditious evaluation of these events. While in this study there were no significant fetal or maternal consequences, the frequency of these types of events should be monitored in any future investigations. Previous studies have demonstrated the safety of prenatal yoga with regards to maternal and fetal physiologic parameters^{4,5}; however additional evaluation may be warranted in patients with high-risk conditions particularly as it relates to blood pressure. Although there were other medical issues that arose in the week following the yoga session, these were most likely related to the natural course of the medical complications present in this high-risk population.

Clinical Implications:

Studies of prenatal yoga in the outpatient setting have already shown improvements in patients' psychosocial parameters including stress and depression.⁶ Additional obstetric outcomes, such as fetal growth restriction and hypertensive disorders, were noted to be decreased in a study that evaluated a prenatal yoga intervention in the outpatient setting in patients with high-risk pregnancy conditions. The high-risk pregnancy conditions in that study included twin gestation, a history of poor pregnancy outcomes and advanced maternal age.¹³ Prenatal yoga is an opportunity for gentle exercise done through various poses and breathing sequences that has already been tailored to a pregnant population. This can be modified further, as was done in our study, to accommodate a high-risk inpatient obstetric population.

The results of our study reveal that prenatal yoga can be integrated into the inpatient antepartum setting without significant disruption to medical care. It has directly approached the potential integration of complementary medicine techniques in a patient population for whom this type of therapy is typically not considered. Antepartum hospitalization is a particularly stressful time for patients and their families. The ability to incorporate appropriate activities to alleviate this stress are limited. Inpatient prenatal yoga could be a potentially medically beneficial option to combat that stress, while simultaneously combatting the musculoskeletal effects of limited activity.

Strengths and Limitations:

The major strength of this research study was the ability of high-risk patients to participate in this project. Most studies related to prenatal yoga or exercise in pregnancy are restricted to low-risk patients in the outpatient setting. Our population was the opposite end of this spectrum representing high-risk patients with conditions severe enough to warrant an inpatient admission. Notable limitations are the lack of a control group and as such the inability to discern any therapeutic benefits from the prenatal yoga intervention. Due to the complex logistics associated with piloting this novel concept we felt it prudent to focus solely on the feasibility portion of the initiative. While there may be direct health benefits on maternal and fetal outcomes associated with prenatal yoga practice, those would need to be evaluated in subsequent studies.

One significant limitation was the ability to retain an appropriately qualified instructor. We were fortunate when this study was initiated to have a certified prenatal yoga instructor already employed by our practice. When this teacher was no longer available, finding another qualified prenatal yoga instructor to work with this type of high-risk obstetric population was challenging and ultimately proved too difficult, resulting in the early termination of the study. While certified instructors for prenatal yoga exist, they may be difficult to retain. In addition, some instructors may feel that while they have received training to adjust for routine physiologic changes associated with pregnancy, that may be insufficient for working with patients who have high-risk pregnancies. In our feasibility study, close collaboration with the participants, our yoga instructor and other members of the health care team allowed for additional modifications to be made with respect to specific medical conditions. As the integration of yoga practice into medical care continues, training

for yoga instructors interested in working with medically complex patients will hopefully increase affording a larger pool of qualified instructors who are comfortable with this type of patient population.

Conclusions:

Given the positive response of this study from both the patients and nursing staff, further research of the potential therapeutic role for prenatal yoga in this patient population would likely be well received. Subsequent studies evaluating how inpatient prenatal yoga could potentially assist with blood pressure control in antepartum patients is one potential area for further investigation. Other maternal and fetal outcomes could also be pursued such as increased length of gestation in patients with preterm labor and preterm premature rupture of membranes. This feasibility study has provided a preliminary framework for the incorporation of prenatal yoga into the inpatient care for women with high-risk pregnancies to allow for future studies to investigate its potential for health benefits.

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Highlights

- This study was conducted to determine the feasibility of incorporating prenatal yoga into the inpatient care for high-risk pregnant women. Prenatal yoga studies to date have been limited to the outpatient setting. This study explored expanding the option of prenatal yoga to an inpatient population.

	Yes	No
Did you participate in yoga before pregnancy?	5 (33%)	10 (67%)
Did you participate in yoga during pregnancy before you were hospitalized?	2 (13%)	13 (87%)
Would you prefer in the future for the timing of the session to be later in the day?	0	15 (100%)
Was the duration of the session (30 minutes) acceptable?	15 (100%)	0
<p>Participant Comments:</p> <p>“Was a nice break; would do it 2x a week if available and doctors approved”</p> <p>“This was great! Felt good for me to have something to do and it was relaxing. If I'm here next week I would love to attend again. Thanks again.”</p> <p>“I think 45 min would be better”</p> <p>“Thank you for inviting me. It was very relaxing, and the breathing exercise helped a lot. I recommend this to other patients.”</p> <p>“More leg stretches would be great since we spent a lot of time off our feet; It would be nice to have yoga twice a week to get us out of our rooms a little more”</p> <p>“Would love to find classes at home to attend; thank you so much”</p> <p>“Great experience to help me relax at least for a moment while I am here.”</p> <p>“I feel great!”</p> <p>“This session was terrific, and I am so glad to have gotten to participate”</p> <p>“Great class. It felt good to stretch! “</p> <p>“(The instructor) was lovely and attentive to my concerns. The stretches were most helpful and I enjoyed concentrating on my breathing. It was nice to get out of my room and stretch on the yoga mat as a change of pace and practice proper breathing techniques. The music and room were relaxing as well.”</p> <p>“more times per week!”</p>		

Figure 1.

Post-Class Participant Questionnaire (n=15)

-participants who completed multiple questionnaires had their comments compiled into one quote

How many yoga sessions did you participate in during your hospitalization?	
a. 1	6 (75%)
b. 2-5	2 (25%)
c. 6-10	0
What duration do you think would be best for the yoga session?	
a. 15 min	1 (13%)
b. 30 min	4 (50%)
c. 45 min	3 (37%)
d. 60 min	0
If someone you knew was hospitalized during pregnancy would you recommend these yoga sessions to them?	
a. Yes	8 (100%)
b. No	0
Did you find that yoga helped with any of the following	
Pain/Discomfort*	
a. Yes	3 (43%)
b. No	0
c. Not Sure	4 (57%)
Ability to sleep better	
a. Yes	4 (50%)
b. No	0
c. Not Sure	4 (50%)
Decrease stress level	
a. Yes	8 (100%)
b. No	0
c. Not Sure	0
Did you utilize any of the techniques from the yoga session (ex. breathing exercises) during other parts of your hospital stay (ex. during delivery)?	
a. Yes	4 (50%)
b. No	2 (25%)
c. Not Sure	2 (25%)
Participant Comments:	
"No comments; thanks for everything" "Great Class! Loved it. Nice to offer to the people here on bedrest. Thank you again" "Yoga was awesome. I wish I could have done more!" "Great service to offer patients. Would have liked to do more. First session paperwork not complete, second session completed, third session cancelled. Twice a week offerings would be beneficial. Instructor was great!" "stretching after bedrest; used breathing during delivery; also used leg stretching"	
wonderful instructor; commented that would like to consider flexibility with regards to scheduling (ex. ultrasound timing conflicting with class)" "for a long term inpatient, I would recommend the option of 2-3 times a week. It was very beneficial"	

Figure 2.
 Participant Discharge Questionnaire (n=8)
 *(n=7, one participant did not respond)

Did you find the prenatal yoga sessions disruptive to providing care to your patients?	
d. Yes, a lot	0
e. Sometimes	0
f. Not at all	14 (100%)
Do you think that your patients found the prenatal yoga sessions helpful?	
e. Yes	14 (100%)
f. No	0
With regards to anything in particular?	
“they like the distraction and the social part” “getting out of room to quiet dark room to relax and gently stretch during yoga” “gave them something to do and look forward to” “help with stress” “happy to get out of room” “getting out of room; socializing” “patient felt it was relaxing and she was glad to be able to leave room” “relaxing, able to get out of the room” “patient has been here for over a month, so she enjoys getting out of room to stretch and also helps fill her day” “socialization/meditation”	
Would you recommend this activity to other hospitals that care for hospitalized antepartum patients?	
c. Yes	100% (14)
d. No	0
Why or why not?	
“As someone who regularly does yoga - yoga gets you out of your head, no phone calls, time to yourself, very relaxing and physically beneficial” “so good for patients’ mental well-being” “AP (antepartum) need more activity” “patient (feels) so isolated and feels like she is doing something” “nice to get patients out of their room, meet other patients” “socialization, exercise, different environment” “I feel it is a benefit to our patients in that it makes them feel like they are not the only one going through this and they gain support from other moms”	
Would you recommend this activity continue at this hospital?	
a. Yes	100% (14)
b. No	0
If yes, what do you think the optimal number of sessions would be?	
a. 1/wk	14% (2)
b. 2-3/wk	77% (11)

c. 4+/wk	7% (1)
<p>General Comments:</p> <p>"I think this is a great idea - it allows patient to stretch and focus on breathing. It also gives patients who are here long term something to look forward to and it adds structure to their days. Inevitably, (patients) who are here lose muscle mass/flexibility and this is a great way to minimize that and minimize the "aches" from being in bed all day. The patients seem to enjoy it!"</p> <p>"This is a great program. I think it has been very beneficial to the patients"</p> <p>"We need a softer floor 5x7 rug or rubber gym mat; soothing yoga CDs (music)/CD player; essential oils diffuser perhaps"</p> <p>"I think the yoga is great!"</p> <p>"stress relief; meditation; support from other moms as well as giving support to other moms; gives them something to look forward to"</p> <p>Additional information obtained (verbally):</p> <ul style="list-style-type: none"> -A nurse reported she did the patient's fetal non-stress test after class; Another nurse reported doing it early so there were no issues with patient leaving unit -One nurse noticed a patient was doing yoga on her own in her room after participating in the class 	

Figure 3.
Nurse Questionnaire (n=14)

Table 1**Sample Inpatient Prenatal Yoga Class (30 minutes)**

Activity and Postures	Duration	Modification/Adjustment
Check-in/introduction	5 minutes	
Ujjayi	10 rounds of breath	
Nadi Sodhana	10-20 rounds of breath	
Baddha Konasana with eagle arm position	5 breaths each side	if accessible, otherwise any comfortable seated position
Table-top with cat/cow	10-15 breaths	
Balasana (Childs Pose)	5 breaths	
Tadasana (Mountain Pose)	2 breaths	
Surya Namaskara A; Samasthiti, urdvaha Hastasana, Prasarita Padottanasana, ardha uttanasana	3-5 cycles	wide legged stance
Utkata konasana (Goddess Pose) with side stretch	2 breaths each side	
Warrior II followed by Utthita Parsvakonasana (Side Angle)	4 breaths each side	
Vrikshasana (Tree Pose)	4 breaths each side	toes on the mat and heel resting above the ankle.
Upavistha Konasana	3 breaths	wide legged seated
Janusirsasana (Foot to Knee)	3 breaths each side	
Baddha Konasana	3-5 breaths	
Viloma breath work	10 breaths	
Shitali breath work	10 breaths	
Savasana	5 minutes	left side lying or seated in chair

-equipment/props were limited to yoga mats and chairs

-minor variations on the above sequence occurred from week to week

Table 2

Demographics of Yoga Participants (n=15)

Age (mean, yrs)	32.8	±6.5
BMI (mean, kg/m ²)	30	±4.7
Race		
White	10	(66.7%)
Hispanic	3	(20%)
Asian	1	(6.7%)
Unknown	1	(6.7%)
Gestational Age (wks) *	30	±3.5
Primigravida	5	(33.3%)
Participants with a prior delivery	8	(53.3%)
Insurance		
Private	11	(73.3%)
Public	4	(26.7%)

* completed weeks at the time of initial yoga class participation

Table 3

Participant Outcome Information (n=15)

Adverse Events*	Category of Diagnosis for Admission	Gestational Age at participation	Delivery information [¶]
During yoga session: chest tightness/light-headedness 6 days after yoga session: passage of blood clots	Vaginal Bleeding	27	Unavailable
During yoga session: dizziness/light-headedness 4 days after yoga session: readmitted with vaginal bleeding	Blood Pressure	27	Delivered at 32 weeks
2 days after yoga session: passage of blood clots	Vaginal Bleeding	32	Delivered at 35 weeks
3 days after yoga session: worsening blood pressures	Blood Pressure	31	Delivered at 33 weeks
6 days after yoga session: contractions	Premature Rupture of Membranes	30	Delivered at 30 weeks
None	Premature Rupture of Membranes	25	Delivered at 28 weeks
None	Premature Rupture of Membranes	32	Delivered at 34 weeks
None	Premature Rupture of Membranes	33	Delivered at 34 weeks
None	Vaginal Bleeding	34	Delivered at 37 weeks
None	Vaginal Bleeding	35	Delivered at 37 weeks
None	Vaginal Bleeding	31	Unavailable
None	Preterm Labor/Short Cervix	26	Unavailable
None	Preterm Labor/Short Cervix	28	Unavailable
None	Preterm Labor/Short Cervix	33	Delivered at 36 weeks
None	Other	26	Delivered at 34 weeks

* charts were reviewed for 7 days (if the patient was discharged prior to 7 days the chart review was for the duration of days they were admitted after the yoga session)

[¶] Delivery information was only available for patients delivered at Tufts Medical Center