Women’s Self-Reported Factors That Influence Their Postpartum Exercise Levels

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Abstract: The birth of a child is a life transition that can signal an opportunity to promote wellness and self-care. Nurses and other health care providers can encourage women to engage in exercise for physical and mental health and to enhance weight loss after birth. However, incorporating an exercise routine into life with an infant can be challenging. Sixty-two women provided feedback about their exercise patterns before and during pregnancy, and 18 of these women gave additional insight into barriers to and facilitators of exercise engagement after childbirth. Three broad categories were identified as influencing exercise patterns in the postpartum period: time, maternal responsibilities, and physical status. Recommendations for
increasing exercise include providing individualized activity suggestions, identifying exercise
groups specific to postpartum women, and connecting exercise with social support for better
adherence.

**Keywords:** exercise | physical activity | postpartum | pregnancy | weight loss

The birth of a child represents a major life change for a woman and her family. Family
dynamics, including roles, responsibilities, and priorities, shift as parents incorporate a new
member into their world. Although researchers have suggested that this life transition may be a
plausible time to introduce change, because it is mandatory with a newborn’s arrival, not all
lifestyle changes are easily integrated into the postpartum period. Establishing or returning to an
exercise routine for mental and physical wellness is one change women can implement after
childbirth, but this may be more difficult to achieve than some women and their family members,
friends, and health care providers realize.

According to current guidelines, women who were already active before pregnancy can continue
the same activity level during pregnancy and the postpartum period as long as there are no
pregnancy-related complications or contraindications to activity. For those wanting to start an
exercise routine, the recommendation is to engage in at least 150 minutes per week of moderate-
intensity aerobic activity. At moderate intensity, a person notices increased breathing and heart
rate and can talk, but not sing, throughout the activity (U.S. Department of Health and Human
Services, 2008).
Literature Review

The benefits of increased physical activity at various levels have been documented for many years and include cardiovascular wellness; improved bone health, glycemic control, and weight management; greater resilience to stress; and decrease in comorbidities (Fletcher et al., 1992). In a large cross-sectional study ($N = 19,842$) of healthy middle-age individuals (53.9% female), researchers examined the effects of three levels of activity (domestic activity, brisk walking, and sports) and their frequency to achieve health benefits (Hamer, Stamatakis, & Steptoe, 2009). The authors concluded that minimal physical activity (defined as domestic activity, 20 minutes per week) can benefit mental health, but greater improvement was noted with more intense activity (brisk walking followed by sports) and greater frequency. Mata and colleagues (2012) found that even a single small bout of physical activity during the day could improve a positive mood state and that greater volume and intensity of activity was associated with greater increase in positive mood state. In addition, Mammen and Faulkner (2013) concluded that physical activity may decrease the risk of developing depression. Although there is evidence of the advantages of exercise for adults in general, a recent meta-analysis supports the positive effect in postpartum women specifically (Poyatos-León et al., 2017). By becoming more physically active, a woman can see benefits of this self-care in her sense of well-being and perceived fitness (Lloyd, O’Brien, & Riot, 2016).

Despite the known benefits of exercise and physical activity, there are still differences in the exercise patterns of men and women, and even in women with children and those without.
According to the Centers for Disease Control and Prevention (2017), men (54%) are more likely than women (46%) to meet the 2008 Physical Activity Guidelines for aerobic activity. Research has shown that parents are less active than nonparents (Bellows-Riecken & Rhodes, 2008); however, the greater change may be in the transition for first-time parents, who are observed to decrease sedentary time and increase light physical activity (Rhodes et al., 2014). Although parenthood is associated with fewer inactive minutes, there is also a significant decline in moderate to vigorous physical activity for new mothers (Rhodes et al., 2014). Nearly 56% of women in the early motherhood stages were found to have sedentary (10.8%) or inadequate (45.8%) physical activity behavior, meaning that they were not active at a level that would achieve health benefits (Lovell & Butler, 2015). The researchers also noted that the physical activity behavior did not systematically differ based on the child’s age; the distribution of sedentary behavior and inadequate activity was consistent in women caring for children from birth until age 9 years (Lovell & Butler, 2015).

Although there is existing research on exercise habits of pregnant women and mothers of young children, there is limited information regarding women’s physical activity and exercise patterns in the first few months after giving birth. The purpose of this study was to explore exercise patterns of women after childbirth, with the specific aim of understanding the factors that may influence incorporation of exercise into a woman’s daily routine in the first months postpartum.

Methods
In this descriptive study, we examined the exercise patterns and perceptions of factors influencing exercise levels after birth of low-risk women (we define low risk here as women without comorbid health conditions that could increase the presentation of depression symptoms, women without birth trauma or complicated childbirth [e.g., preterm birth, NICU admission], and women with no past medical history of diagnosed mental health disorder and/or current treatment for mood disorder).

Demographic and clinical information were collected, in addition to each woman’s self-report of exercise patterns before and during pregnancy. Data were collected as part of a larger study that included an exercise intervention in addition to quantitative measures of depression symptoms, stress, sleep, and fatigue to determine the association of these factors in low-risk women (Shelton, 2015). Qualitative data were obtained by using a structured interview at the end of the study (n = 18) to comprehend the firsthand perspective about maternal exercise patterns and activity during the postpartum period. The questions related to a woman’s return to or initiation of an exercise routine after childbirth and her description of barriers to and facilitating factors of engaging in exercise in an effort to gain greater understanding of the exercise trajectory from prepregnancy to postpartum. The responses to the questions were examined with consideration of the mother’s self-report of exercise before and during pregnancy.

Participants were recruited from private obstetric offices located in south central Louisiana; these offices ranged from physician-only care to care delivered by physicians, physician assistants, and nurse practitioners. Recruitment efforts focused on women who were being seen for routine
postpartum office visits, which are most often scheduled for 4 to 6 weeks after birth. We intended to recruit women who were considered healthy and at low risk for depression symptoms in the postpartum period—women whose histories might not trigger risk-based screening but who might have had mild to moderate depression symptoms. Those meeting the following criteria were invited to participate in the study: (a) ages 18 years or older, (b) birthed a singleton term infant (≥ 37 weeks gestation) without special care needs (e.g., medications, monitors), and (c) able to read and write in English. Because of concern for heightened depression severity and the effects of comorbidities, women with the following conditions were excluded from the study: (a) affirmative response on Edinburgh Postnatal Depression Scale to items regarding self-harm ideations, (b) current use of medication for mood disorder (e.g., selective serotonin-reuptake inhibitors, tricyclic antidepressants), and (c) persistent pregnancy complication (e.g., preeclampsia, anemia, thyroid dysfunction) that required continued medication. If a woman presented at baseline with a score of 14 or greater on the Edinburgh Postnatal Depression Scale, then she could remain in the study, but the health care provider was to be notified of the score and the high risk of depression. Screening no earlier than 4 weeks postpartum decreased the likelihood of elevated depression scores related to baby blues, seen closer to time of birth, and residual fatigue from birth of a newborn—both issues that potentially affect physical activity levels.

Approval for this project was obtained from the institutional review boards at Georgia State University and University of Louisiana at Lafayette. Informed consent was obtained at the beginning of each participant’s face-to-face meeting, before completion of questionnaires and the interview. Participants self-selected to participate, and there was no monetary compensation for
completion of this study. After completion of the questionnaires, participants were sent personalized thank you letters and were provided with educational materials and resources electronically.

Results

Objective data were entered twice using SPSS version 22, and these databases were cross-referenced to assess for entry error. Common descriptive statistics, including means, standard deviations, and frequencies/percentages, were computed for the entire sample (N = 62). The interview participants’ (n = 18) verbal responses were documented on the standardized interview guide and read back to confirm completeness and accuracy of the responses. The frequency of interest in structured exercise was recorded and compared with reported exercise patterns before and during pregnancy; the reported exercise activities and intentions were also observed for commonalities. The content of the responses related to factors influencing exercise were read and re-read by the first author, then organized into types of barriers and facilitating factors. These factors were also reported with descriptive statistics.

Sample

Sixty-two women completed study questionnaires; they ranged from 4 weeks postpartum to 9 weeks postpartum, with a mean time of 6.6 (standard deviation = 1.2) weeks after birth. The average age of the participants was 29.9 (standard deviation = 4.3) years, with most participants being married (85.5%) and White/non-Hispanic (90.3%), having child care help at home (79%),
and being from a household with an annual income greater than $80,000 (48.4%). Nearly 60% gave birth vaginally, and 40.3% of the mothers had a cesarean birth. Half of the participants were exclusively breastfeeding their infants (50%), and an additional 24.2% breast- and bottle-fed their infants. First-time mothers represented 45.2% of the sample, with the second-largest group having three or more children (29%).

**Exercise Patterns**

Demographic data included two items for participants’ self-report of exercise patterns; participants were asked about their exercise before and during pregnancy. Results indicated that exercise patterns changed notably with pregnancy. Of the study sample (N = 62), 45.2% of participants reported that they exercised 0 to 2 days per week before pregnancy; the remainder exercised 3 to 5 days per week (45.2%) and 6 or more days per week (9.6%).

With pregnancy, however, most participants scaled back the frequency of exercise. One participant, a regular exerciser, reported that she altered her routine because of increased contractions and physician recommendation. Others commented that the changes were reflective of general discomforts of pregnancy. Those reporting exercise 0 to 2 days per week during pregnancy were the majority (69.4%), with roughly one third of participants exercising 3 to 5 days per week. Only one participant continued her routine of exercising 6 or more days per week throughout her pregnancy.
Exercise After Birth

Of the 18 participants who provided feedback, most had some plan for incorporating exercise into their postpartum routine, regardless of whether they were regular exercisers before pregnancy. Those who were frequent exercisers before and during pregnancy were more likely to have already resumed activity. A participant who exercised 3 to 5 days per week before pregnancy reported that she was already “back to running 3 to 4 times per week,” and another had a gym routine that included elliptical exercises and free weights. The participants who were less frequent exercisers or nonexercisers were not yet engaged but had plans to formulate an exercise routine. The plans were vague, such as, “I would have already liked to resume an exercise program, but I haven’t had the time or energy. I do plan to get back to it.” Another said she wanted to wait until the baby was older, when he may then “have a better sleep pattern” and she would be more likely to use the daycare at her gym.

Barriers and Facilitating Factors to Exercise

After the question of when or if the woman planned to engage in an exercise program in the postpartum period, the interview moved to the questions of barriers and facilitating factors. Women shared their experiences with factors that deterred or were barriers to exercising and factors that promoted or facilitated inclusion of exercise in their daily routines. These factors (see Table 1) were examined for overlapping words and similar content to anecdotally categorize the factors. Three broad categories were identified as influencing exercise patterns in the postpartum period: Time, Maternal Responsibilities, and Physical Status.
**Time**

Some women gave a very global response of time as a barrier and indicated that they need more time to include exercise. One said, “Extra time. For me, it’s just having time.” Another—a bottle-feeding mother of an infant and three older children, 5 weeks postpartum, who was working full time from home—gave a very specific example of time influencing exercise: “There’s simply not enough time in the day with four kids. Before pregnancy, I went at 5 a.m.—that was the only time. Now being up at night [with the infant], I can’t get out of bed at 5:30.”

**Maternal Responsibilities**

Women said they needed more time in the day to complete their responsibilities as mothers. According to one, exercise was an activity that, “on top of the current schedule, will drop more quickly.” Another participant—a mother of an 8-week-old infant and a toddler, who was breastfeeding and on maternity leave—recognized that her exercise was influenced by her role in the household. Exercise was an activity that took her away from her family, and leaving to exercise just as her husband was coming home from work felt as if she was simply tagging her childcare replacement, rather than having a meaningful connection with her parenting partner:

Nursing [breastfeeding] is my priority now. If the baby is up and needs to feed, that’s what I’ll do. Sometimes I’ll nurse, then give her back to the sitter and hurry back to the gym. Once I have the baby or kids from the sitter, it’s hard to go back to the gym.
Another thing is [that] I don’t like to “high five” my husband as he comes in the door so I can go exercise.

Further supporting maternal responsibilities as a barrier to exercise, one woman—a first-time mother of an 8-week-old infant, who was bottle-feeding and working full time—said exercising would be easier if she had help: “. . . someone to watch the baby. I feel like I should do other things than go run. If I had a live-in nanny or housekeeper, [then] that would definitely make it easier!”

**Physical Status**

The category of *Physical Status* presented as a negative perspective or a positive one that subsequently influenced activity. Energy level and fatigue were the factors that gave negative connotations to the category of *Physical Status*. “My energy level before and after work probably are the biggest things to keep me from exercising,” said a first-time mother of a 9-week-old infant, who was breastfeeding and working full time. Another participant—a first-time mother of a 5-week-old infant who was bottle-feeding and returning to full-time work—said, “My work schedule is also a barrier, and then fatigue—just being too worn out to go.”

However, one participant—a mother of two who was breastfeeding an 8-week-old infant and returning to full-time work—recognized her physical status’s positive effect to encourage her exercise routine:
“I used to be a lazy person growing up. Now I’m more like my mom, always moving. I grew up in a family of busy people. I’ve found that exercise makes me feel better and makes me more efficient. Sometimes I’ll bring a book for class with me. I use the time as my reflective time, like being in church. This is my hour to think; I just need an hour to do that.”

Discussion

Finding time to exercise can be a challenge, especially during the postpartum period when a woman’s energy is limited and child care and household duties seem to take priority. Although these findings are specific to women adjusting to the first months after birth, they are consistent with previous studies of mothers and physical activity. Reflective of the words of the study participants, other researchers have also recognized that time, role responsibility, and physical strain—in addition to support and child care—are influential factors for resuming or initiating exercise after childbirth (Evenson, Aytur, & Borodulin, 2009; Mailey, Huberty, Dinkel, & McAuley, 2014; Saligheh, McNamara, & Rooney, 2016). Of interest, the barriers of limited time and issues with child care have not changed during the past decade. Evenson and colleagues reported that during the postpartum period women most often identified interpersonal barriers to exercise, but social and instrumental support were very influential in a woman’s postchildbirth exercise patterns.

Participants consistently identified time as a limiting factor to exercise. They said they needed more time to fit in exercise after completing all of their maternal responsibilities. The decision to
exercise was also swayed by how a woman felt: Was she too tired to exercise, or would exercise improve how she felt? Mackay, Schofield, and Oliver (2011) reported very similar findings regarding exercise behaviors among women with small children. They found notable differences in the exercise of women with and without children; women with young children were less active and exercised at a lesser intensity than those without children. Mailey and colleagues (2014) found that after becoming a parent, women decreased exercise and spent more time on nonleisure activities such as housework or occupational responsibilities (Mailey et al., 2014).

Finding time in the day for exercise was a barrier that often went hand in hand with meeting the demands of mothering. Participants expressed that the expectations of their roles as mother, wife, and/or employee had greater priority ahead of their physical activity. This finding is consistent with personal barriers identified by Saligheh and colleagues (2016), who found that the demands of child care and housework took greater priority ahead of physical activity in their sample of 14 women during the first postpartum year. Lovell and Butler (2015) reported a negative association between role overload and leisure time physical activity. Mothers who were more overloaded, meaning their identified role demands exceeded their available time and energy, had less leisure time physical activity, and mothers who were classified as having adequate physical activity had significantly lower indicators of role overload (Lovell & Butler, 2015). This raises the possibility that a mother may perceive physical activity and exercise as yet another demand. One solution may be to discuss activity as an enjoyable self-care measure versus a drain of a mother’s personal resources (Lloyd et al., 2016).
Most participants in the sample reported adequate activity levels before pregnancy, with 54.8% exercising a minimum of 3 days per week; however, with pregnancy, more than two thirds of the participants described exercise occurring only 0 to 2 days per week. This decrease may indicate that although women understand the benefits of exercise, the value is lost in the restrictions of time and energy, discomforts of pregnancy, and demands of the motherhood role. Rather than describing exercise as one more request of a mother’s time and attention, health care providers may find it easier to suggest an exercise routine as an opportunity to engage with others. Some women recognize the benefit of the group setting, especially when other mothers are participating. Women’s group and postnatal exercise classes provide chances for women to escape the potential isolation of mothering and share the experiences of physical activity and motherhood (Saligheh et al., 2016). Self-efficacy, social support, behaviors of goal setting, and self-regulation were factors in mediating effectiveness of activity (Gilinsky et al., 2015).

Exercise that provides the ability to track workouts and connect with other mothers or a partner or family member can enhance a woman’s commitment to greater physical activity in the postpartum period. Researchers have found that mothers who received an exercise intervention that included face-to-face instruction, activity charts, and reminders through a playgroup had significant improvement in moderate and vigorous exercise times after 6 months (Monteiro et al., 2014). Playgroups may be a way to reach women who can gain support from other mothers while their children socialize; this is also an approach that may be feasible for single mothers, who are at greater risk of inadequate activity (Dlugonski & Motl, 2013). In an intervention that incorporated activity diaries and a gaming application, researchers noted that participants who invited a wellness partner increased their activity time in both arms of the study. Those who used
the gaming feature and had a partner with whom to share activity reports had even more remarkable results (Gotsis, Wang, Spruijt-Metz, Jordan-Marsh, & Valente, 2013). Researchers observed that postpartum women who are physically active with their families, whether a spouse/partner or children, tend to lead more active lifestyles compared with their peers who are not physically active with their families (Mackay et al., 2011). Also, couples’ activity behaviors appear to be tangential; therefore, having both parents engaged in greater activity will likely keep the family active (Mailey et al., 2014; Rhodes et al., 2014). Presenting exercise as a fun, social activity with friends or family addresses the need for social support as a facilitator to exercise.

**Limitations**

The words of these study participants are meaningful when formulating a plan for health promotion after childbirth. However, one must consider the limitations of the sample, because the composition limits the generalizability of the study findings. This sample comprised primarily married White women with an annual family income greater than $80,000; thus, the results are more reflective of upper middle class White women. In addition, participants self-identified as healthy women, who may be more intentional about exercise and knowledgeable about its benefits; these patterns of the narrow sample may reflect exercise findings that are not common to the larger postpartum population or subgroups. There were few women of African American or Hispanic background and, as noted, few of lower socioeconomic status.

**Clinical Implications**
Women in the postpartum period could greatly benefit physically and emotionally from exercise. Establishing an exercise routine that can be continued across the lifespan can also enhance the well-being of the family. Researchers previously suggested that informing patients about recommendations of physical activity was an acceptable approach to encourage exercise behaviors (Ringdahl, 2002); however, researchers now disagree with this information-only approach (Gaston & Gammage, 2010; Gilinsky et al., 2015). Gilinsky and colleagues (2015) found that simply informing women of consequences of behavior did not contribute to the effectiveness of an exercise intervention. Women and families need to have buy-in and understand not only the recommendations and benefits but also how physical activity can be worked into an individual’s and family’s schedule. Meyer’s research team found that individualizing physical activity recommendations is important and that activities geared to a woman’s individual time, energy, and resources may be more successful (Meyer et al., 2016).

Although women in the postpartum period may be considered part of the overall adult population with regard to exercise research, this subpopulation has unique challenges to establishing and maintaining an exercise routine. According to Evenson and colleagues (2009), most women in the postpartum period acknowledge the benefits of exercise, especially working mothers who feel more energetic from exercise, yet they lack instruction on how to integrate regular physical activity into motherhood. Health care providers should focus on promoting the recommended activity time and intensity—30 minutes of moderate intensity aerobic exercise per day, most days of the week—and discussing ways to meet these recommendations through creative activities and time managements, such as with groups that support mothers exercising with their children. As champions of health promotion and education, nurses can counsel new mothers on
the benefits of exercise and assure them that they do not need to train for a marathon to achieve health benefits. The recommended activity time can be achieved in multiple bursts as brief as 10 minutes and should be spread out during the week to achieve health benefits. Researchers have concluded that walking as a moderate intensity exercise was an acceptable activity for most women, regardless of mode of birth (Teychenne & York, 2013), so brisk walking with the infant in a stroller is a very good introductory activity.

For women who need accountability, finding an exercise partner can be helpful. A woman may want to exercise with her spouse, or she may prefer to connect with other women and mothers. Group exercise provides accountability and support for exercise effort and can combat the loneliness that some women may feel staying home with an infant (see Box 1). Having wellness partners can also improve a woman’s self-efficacy with activity and adherence to an exercise routine.

Although time cannot be added to a busy day, health education can be geared toward including exercise to promote a greater sense of physical and mental wellness and to provide social opportunities. Nurses caring for women in the postpartum period can share information regarding exercising in bursts (10-minute segments, three times per day) and engaging in low-cost, child-friendly exercise programs such as stroller walking. The 2008 Physical Activity Guidelines (U.S. Department of Health and Human Services, 2008) recommend brisk walking as one of the activities for achieving physical and mental wellness, along with bicycling, swimming, playing, and dancing. Tudor-Locke et al. (2011) reviewed the literature to determine
the number of daily steps to be taken to meet the 2008 Physical Activity Guidelines and concluded that a modest daily increase of approximately 2,800 steps, 3 days per week, produced improvement in health outcomes for relatively sedentary participants (those taking fewer than 5,000 steps per day). For adults taking 7,000 to 8,000 steps per day, at least 3,000 should be at a moderate pace, which is roughly equivalent to taking 100 steps per minute or 3,000 steps in 30 minutes (Tudor-Locke et al., 2011). This is a measurable, achievable activity that women can track with an activity application on a smartphone or with a wearable device that monitors steps taken.

**Conclusion**

Incorporating exercise and increased physical activity into life after childbirth creates an opportunity to not only improve health but also be well as a family. Nurses, advanced practice clinicians, and physicians should educate women about and encourage physical activity during the postpartum period for its lifelong physical and mental health benefits. Providing women with an objective recommendation for exercise, such as beginning with stroller walking 3 days per week and aiming for 10,000 steps per day, gives them a foundation for health promotion and wellness. Although we cannot add time in the day, we can help formulate individual exercise plans to meet activity recommendations and enhance a woman’s self-care in the postpartum period.
Box 1. Selected Groups for Active Mothers

- Baby Boot Camp, babybootcamp.com
- Fit 4 Mom, fit4mom.com
- Fit Moms For Life, fitmomsforlife.com
- Moms Run This Town/She Runs This Town, momsrunthistown.com
- See Mommy Run, seemommyrun.com
Table 1. Reported Factors Influencing Postpartum Exercise

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Frequency, n</th>
<th>Facilitator</th>
<th>Frequency, n</th>
</tr>
</thead>
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<tr>
<td>Limited time</td>
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<td>Available sitter</td>
<td>8</td>
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<tr>
<td>Limited energy/sleep</td>
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<td>Adequate rest</td>
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<td>Housework</td>
<td>3</td>
<td>Equipment</td>
<td>2</td>
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<td>Child care needs (siblings)</td>
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<td>Available time</td>
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<tr>
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<td>Exercise partner</td>
<td>2</td>
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<tr>
<td>Breastfeeding schedule</td>
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<td>Feeling I get from exercise</td>
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</tr>
<tr>
<td>Money restriction</td>
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<td>Physical restriction</td>
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References


