



Contents lists available at ScienceDirect

Safety and Health at Work

journal homepage: www.e-shaw.net

Original Article

Work Reentry After Childbirth: Predictors of Self-Rated Health in Month One Among a Sample of University Faculty and Staff

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ARTICLE INFO

Article history:

Received 21 December 2018

Received in revised form

5 August 2019

Accepted 18 December 2019

Available online 27 December 2019

Keywords:

Leave

Maternity

Postpartum depression

Postpartum period

Return to work

ABSTRACT

Background: Childbirth represents a significant transition for women, with physical and psychological sequelae. Reentry to the workplace during the postpartum period is understudied, with implications for maternal well-being and job-related outcomes. This study's aim was to examine selected pregnancy, childbirth, and return-to-work correlates of overall self-rated health within the first month of work reentry after maternity leave.

Methods: Between December 2016 and January 2017, we surveyed women employed at a large, public Midwestern university who had given birth in the past five years ($N = 249$) to examine self-rated overall health in the first month of work reentry. Using ordinal logistic regression, we examined whether physical or psychological health problems during pregnancy, childbirth complications, length of maternity leave, and depression and anxiety at work reentry were related to overall health.

Results: Women who experienced depression (odds ratio [OR] = 0.096 [95% confidence interval {CI} = 0.019 to 0.483, $p = 0.004$]) and anxiety (OR = 0.164, [95% CI = 0.042 to 0.635, $p = 0.009$]) nearly every day reported worse health at work reentry than those with no symptoms. Controlling for demographics and mental health, women who experienced medical problems during pregnancy (OR = 0.540 [95% CI = 0.311 to .935, $p = 0.028$]) were more likely to report poor health, while taking a longer maternity leave (OR = 14.552 [95% CI = 4.934 to 42.918, $p < 0.001$]) was associated with reporting better health at work reentry.

Conclusion: Women who experience medical complications during pregnancy, return to the workplace too soon after birth, and experience mental health symptoms are vulnerable physically as they return to work.

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1. Introduction

Over half of American women (55%) return to work during their child's infancy and most return within the first 3 months after childbirth [1] despite often experiencing lingering health issues related to pregnancy and giving birth. These first months post-childbirth have become known as “the 4th trimester” [2] due to the intense physical and emotional changes that arise during this timeframe. In the first two months after giving birth, mothers commonly report stress, exhaustion, sore breasts, backaches, and weight control issues [3]; itching and numbness at the incision site

present additional problems for women who had cesarean births [4].

The postpartum period (up to one year after childbirth) remains a time of both physical and psychological transition. Many women continue to experience physical health problems as a consequence of childbirth throughout the first year [5,6], including fatigue, urinary problems, sleep deprivation, and back and pelvic pain [7–9]. Among women who experienced complications during pregnancy, health concerns can extend beyond the first year postpartum, as these women are at increased risk for the development of chronic disease later in life [10]. Severe maternal morbidity or “unexpected

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outcomes of labor and delivery that result in significant short- or long-term consequences to a woman's health" [11] is on the rise in the United States, affecting 144 of every 10,000 hospitalized deliveries in 2014 [12]. In addition, mood and anxiety disorders affect a substantial number of new mothers, with estimates for postpartum depression reported at between approximately 9% [13] and nearly 22% [14] and postpartum anxiety ranging from 5.8% [15] to 30.7% [16].

Addressing the postpartum needs of new mothers returning to work is a crucial task for employers. Recent international research suggests that pregnancy, childbirth, and postpartum ill health result in the highest costs of absenteeism and of productivity losses for employers [17,18]. A Dutch study revealed that a large number of absences among postpartum women returning to work were because of physical concerns including pelvic pain, back pain, and fatigue, as well as mental health concerns [19]. Physical and mental health problems among women returning to work postpartum also contribute to presenteeism, or being present at work, but unable to perform one's job [20]. A study conducted in the Netherlands reported that among a group of 514 postpartum working mothers across 15 companies, sick leave and presenteeism accounted for 48% and 52%, respectively, of productivity loss [20]. Yet, when pregnancy-related costs are excluded from total estimates of absenteeism and productivity loss, the total value of loss associated with female employees was 9.8% less than the value of loss associated with male employees [17].

There has been scant research pertaining to the overall health of women returning to the workforce in the period of time after maternity leave, specifically the factors affecting overall health at the time of work reentry, a crucial transition that sets the stage for longer term health and work adjustment. We were not able to identify any studies that examined women's experiences in the first month of this transition nor any that examined work reentry among university faculty and staff. Studies examining post-childbirth work reentry in the United States are absent from the literature. Thus, the aim of this study was to examine selected pregnancy, childbirth, and return-to-work correlates of overall self-rated health within the first month of returning to the work environment after maternity leave. We hypothesize that antenatal maternal mental and physical health complications during pregnancy, as well as adverse childbirth experiences, are related to self-rated overall health of women in the first month of work reentry. Further, we expect duration of maternity leave to be associated with health at reentry, as it represents the amount of time that has passed since childbirth for each woman in the study. We expect these relationships to exist while controlling for demographic variables and postpartum depression and anxiety. Understanding this phenomenon has implications for women of childbearing age in the workforce, working pregnant women, and employers, including in terms of workplace policies and interventions.

2. Materials and methods

The retrospective, cross-sectional study from which survey items are drawn for this analysis was approved by the Institutional Review Board of Kent State University. The study sample was secured via online survey at a major public university and was designed to explore the work reentry period after childbirth and maternity leave among women who had given birth in the past five years. Fertility lessens among women in their mid-40's [21]; therefore, the population of interest was employed women aged 50 and younger.

Data were gathered during December 2016 and January 2017. Human resource records for the main campus and regional campuses were accessed to secure the e-mail addresses for 2322

women aged 50 and younger, who were employed as full time or part time, and who were in classified or unclassified positions (staff, faculty, and graduate assistants) within all colleges and departments. An invitation requesting participation through response to a survey about the work reentry and adjustment for new mothers and mothers of young children was sent to each e-mail address obtained. Potential respondents were given the option to click on a link within the e-mail to receive more information about the survey. Invited respondents also had the opportunity to unsubscribe from future e-mails sent regarding this study. Potential participants who did not respond to the initial survey invitation were sent follow-up invitations via e-mail at one, two, and three weeks after the original e-mail was sent.

Invited respondents who followed the presented link to receive more information were presented with a qualtrics survey [22]. Informed consent solicitation was presented. Participants who provided consent were asked whether they identified as a female faculty, staff, or graduate assistant employee of Kent State University and whether they had given birth in the past five years. Respondents who did not meet these criteria were then presented with a screen thanking them for their time. Respondents who met the criteria were directed to the survey. Survey completion took approximately 20 minutes; analyses reported here use variables that represent a subset of survey items. Once the survey was completed, respondents were redirected to a website where they were provided with the option to enter their e-mail address to be included in a drawing to win one of the several gift cards.

To approximate response rate, we drew upon the most recent estimate of the fertility rate (number of live births per 1,000 women in a given year) in Ohio for women aged 15–44 years to be 63.0 [23]; therefore, the estimated number of women to have given birth over the past 5 years of the 2322 female university employees contacted initially by e-mail was 731.

$$[(63.0 * 2322) / 1000] * 5 = 731$$

Three hundred six women attempted to enroll in the study. Two women did not consent, 31 women did not meet the criteria for inclusion, and 24 did not provide data on most or all key variables. A total of 249 women were included in the analysis, with an estimated response rate of 34.1%.

2.1. Measures

2.1.1. Demographics

Demographics are included as control variables. Respondents were asked to provide information about their age, race/ethnicity, marital status, highest level of education, and annual household income. Age was entered into the analysis as a continuous variable. Respondents selected among multiple racial and ethnic categories and could choose as many as applied, including white; Hispanic, Latino, or Spanish origin; black or African American; Asian; American Indian or Alaska Native; Middle Eastern or North African, Native Hawaiian or other Pacific Islander; and other race, ethnicity, or origin. For the analysis, racial categories were divided into white and other (reference category). Respondents selected among the following marital statuses: single, never married; married or domestic partnership; widowed; divorced; or separated. For the analysis, marital status was recategorized as married and other (reference category). Respondents provided the highest level of education completed, including no schooling completed; nursery school to 8th grade; some high school, no diploma; high school graduate, diploma or equivalent; some college credit, no degree; trade, technical or vocational training; associate's degree; master's degree; professional degree; or doctorate degree. For the analysis,

education was recoded as bachelor's degree or less and master's, professional, or doctorate (reference category). Income categories included four categories: less than \$50,000 (reference category), \$50,000 to \$74,999, \$75,000 to \$99,999, and \$100,000 or more. Income was entered into the analysis as a categorical variable.

2.1.2. Anxiety and depression at work reentry after maternity leave (mental health month 1)

Because of high correlations typically found between mental health and physical health [24] and the cross-sectional study design, items that asked about anxiety and depression during the first month back to work after maternity leave were entered into the analysis as control variables. Respondents were asked to rate their symptoms the first month of work reentry after maternity leave for depression (Thinking about the first month when you returned to work after maternity leave, to what extent did you feel down, depressed, or hopeless?) and anxiety (During the first month when you returned to work after maternity leave, to what extent did you feel nervous, anxious, or on edge?) as follows: nearly every day, more than half the days, several days, and not at all. Higher scores corresponded with fewer symptoms or better mental health.

2.1.3. Duration of maternity leave

Respondents reported the length of their maternity leave with their most recent child. Possible responses were 6 weeks or less (reference category), 7 to 9 weeks, 10 to 12 weeks, 13 to 16 weeks, or 17 weeks or more. For the ordinal regression, maternity leave was treated as a categorical variable.

2.1.4. Pregnancy complications (mental and physical health)

Participants were asked about maternal complications during their most recent pregnancy. Participants were asked whether they had experienced medical complications during pregnancy, including depression or anxiety, gestational diabetes, hemolysis, elevated liver enzymes, low platelet count (HELLP) syndrome, hyperemesis gravidarum, hypertension, multiple pregnancy, placental abruption, placenta previa, preeclampsia, preterm labor, or any other maternal medical complication. For the ordinal regression, respondents who indicated they had experienced depression or anxiety during the pregnancy were coded as "1" for the variable pregnancy mental health complications. Respondents who indicated they had experienced any of the physical health complications of pregnancy, or some other physical problem of pregnancy, were coded as "1" for the variable physical complications of pregnancy.

2.1.5. Childbirth complications

Participants were asked whether they experienced childbirth complications, including assisted birth (forceps, vacuum), breech presentation, failure to progress/prolonged labor, fetal heart rate anomalies, preterm birth, posterior positioning ("sunny side up"), 3rd or 4th degree perineal laceration/tear, transverse lie, umbilical cord issues, unanticipated/emergency caesarean section, or any other maternal childbirth complication. Respondents who reported any of the childbirth complications, or listed some other complication of childbirth, were coded as "1" for the variable childbirth complications.

2.1.6. Physical health at work reentry after maternity leave

For the dependent variable, physical health at work reentry, participants were asked to rate their overall health within the first month of work reentry (Now think about the first month when you returned to work after maternity leave. How would you rate your overall health during that month?) Possible responses were poor, fair, good, very good, and excellent. Higher scores corresponded with greater overall health.

2.2. Analysis

Data were analyzed using IBM SPSS Statistics for Windows, Version 25.0 [25]. Descriptive statistics were calculated for the independent variables: demographics (race, marital status, education attainment, and income), depression and anxiety during the first month of work reentry, maternity leave duration, and maternal mental and physical pregnancy complications, and childbirth complications. Descriptive statistics were also calculated for the dependent variable of overall maternal health in the first month of work reentry.

Four models using cumulative odds ordinal logistic regression with proportional odds were run to examine whether the independent variables predicted overall maternal health within the first month of work reentry after maternity leave. Statistical significance was determined by p -values of $<.05$.

In Model 1, demographic control variables were entered. In Model 2, depressive symptoms in the first month back to work and anxious symptoms in the first month back to work were entered as control variables. In Model 3, duration of maternity leave was added to the model. Finally, in Model 4, maternal physical health complications during pregnancy, maternal mental health complications during pregnancy, and maternal childbirth-related complications were added to the model to determine their effects on self-reported health in the first month back to work.

3. Results

Descriptive statistics are presented in Table 1. The mean age of participants was 34 years. Most respondents were white, married or in a domestic partnership, had a master's degree or professional/doctorate degree, and earned an income of \$50,000 or more per year. About one-third of women experienced physical health complications during pregnancy, 12% experienced mental health issues during pregnancy, and 47% experienced childbirth complications. Most women took twelve or fewer weeks off for maternity leave. In the first month back to work, 54.9% of respondents reported feeling depressed several days or more often and 71.1% reported feeling anxious several days or more often. Overall, 72.3% of respondents reported their health as good, very good, or excellent; 25.5% reported poor or fair health.

Parameter estimates, Nagelkerke pseudo R^2 , and -2LL for the four models predicting overall health in the first month of work reentry are included in Table 2. Assumptions of ordinal logistic regression, including the absence of multicollinearity and proportional odds, were met.

The demographic control variables were not consistent predictors of health across the models. However, mental health symptoms during the first month of return to work were consistently related to health across the models, with more frequent mental health symptoms associated with poorer health, compared with those with no mental health symptoms. In the final model, compared with those who experience no mental health symptoms, the more frequently symptoms are experienced, the lower the odds are for positive health (e.g., depression experienced nearly every day, odds ratio [OR] = 0.096 [95% confidence interval {CI} = 0.019 to 0.483, $p = 0.004$] versus depression experienced several days, OR = 0.315 [95% CI = 0.169 to 0.587, $p < 0.001$]).

We observed that even after controlling for demographic variables and mental health symptoms during the first month of return to work, length of maternity leave and physical complications were significant predictors of overall health in the first month of work reentry. Compared with those who took leave of six weeks or less, only those who took 17 weeks or greater were associated with

Table 1
Descriptive statistics (n = 249)

Variable	Value n (%)
Age (n = 245)	34.4 (SD = 4.4)
Race	
White	208 (83.5%)
Black	14 (5.6%)
Other	25 (10.0%)
Missing	2 (0.8%)
Marital status	
Single, never married	11 (4.4%)
Married or domestic partnership	224 (90.0%)
Divorced	12 (4.8%)
Separated	2 (0.8%)
Highest level of education	
Less than bachelor's	17 (6.8%)
Bachelor's	39 (15.7%)
Master's	135 (54.2%)
Professional/Doctorate	58 (23.3%)
Annual household income	
Less than \$50,000	48 (19.3%)
\$50,000 to \$74,999	36 (14.5%)
\$75,000 to \$99,999	70 (28.1%)
\$100,000 or more	94 (37.8%)
Missing	1 (0.4%)
Depression (first month back to work)	
Not at all	107 (43.0%)
Several days	89 (35.7%)
More than half the days	31 (12.4%)
Nearly every day	17 (6.8%)
Missing	5 (2.0%)
Anxiety (first month back to work)	
Not at all	69 (27.7%)
Several days	116 (46.6%)
More than half the days	36 (14.5%)
Nearly every day	25 (10.0%)
Missing	3 (1.2%)
Duration of maternity leave	
6 weeks or less	67 (26.9%)
7 to 9 weeks	32 (12.9%)
10 to 12 weeks	111 (44.6%)
13 to 16 weeks	17 (6.8%)
17 weeks or more	20 (8.0%)
Missing	2 (0.8%)
Maternal mental health complications during pregnancy	
Yes	30 (12.0%)
No	219 (88.0%)
Maternal physical health complications during pregnancy	
Yes	86 (33.7%)
No	163 (65.5%)
Maternal childbirth complications	
Yes	117 (47.0%)
No	132 (53.0%)
Overall health (first month back to work)	
Poor	18 (7.2%)
Fair	48 (19.3%)
Good	104 (41.8%)
Very Good	57 (22.9%)
Excellent	19 (7.6%)
Missing	3 (1.2%)

SD, standard deviation.

significantly increased odds of reporting better overall health within the first month of work reentry, OR = 14.552 (95% CI = 4.934 to 42.918, $p < 0.001$). Experiencing maternal medical complications

during pregnancy was associated with reporting poorer overall health within the first month of work reentry, OR = 0.540 (95% CI = 0.311 to 0.935, $p = 0.028$).

4. Discussion

Our study is among the first to examine work reentry after childbirth and the interplay of pregnancy experiences and duration of leave from work on self-reported health during the first month back to work. In our sample, women struggled with both emotional and lingering pregnancy-related physical health problems when they returned to the workplace. A key finding of this study is that more than a quarter of participants (26.5%) reported that their health was “fair” or “poor” during the first month of work reentry. Further, most participants reported significant mental health challenges at reentry. Over half reported feeling depressed several days or more in their first month back to work after childbirth, and over two-thirds reported feeling anxious several days or more. In the final ordinal regression model, physical complications of pregnancy were significantly related to self-reported overall health in the first month back to work even after controlling for the other variables, suggesting that lingering health problems are affecting women as they make the transition from maternity leave to employment outside the home. Previous research has established that more than 20% of pregnancies are labeled “highrisk” [26], including both preexisting chronic and unanticipated conditions that arise during the pregnancy. In our study, more than a third (33.7%) of the women experienced physical complications during pregnancy, substantially more than would be expected. However, our respondents were, on average, 34 years old, compared with the mean age of 28 years for all mothers [27], and pregnancy complications have been found to increase along with maternal age [28,29].

Self-reported depressed and anxious symptoms at the time of reentry were also significantly associated with overall health at reentry. In this study, it is not possible to untangle causal ordering of the emotional and physical health issues present at the transition back to work after maternity leave. However, it is clear that a significant proportion of women are facing major challenges as they attempt to balance family, work, and their own health-care needs. These findings have major implications for health-care access and costs in the immediate postpartum work reentry period for women. In addition, these findings suggest that employers face patterned health challenges of employees upon work reentry and thus have opportunities to do more to support workers' health as they move through the postpartum work reentry transition.

In this study, those with the longest maternity leave (17 weeks or more) reported better health upon work reentry by a factor of 14.552 than those with shortest length of maternity leave. This finding portends consequences for work productivity and health. In accordance with the Bureau of Labor Statistics, only 13% of workers employed by private companies have access to paid family leave in the United States [30]. The provision of up to twelve weeks of unpaid medical leave and job protection as defined and entitled by the Family Medical Leave Act has remained essentially unchanged since its inception in 1993 [31] and is not accessible to all employed persons in the United States. Although leave and job protection are provided for up to twelve weeks for American workers meeting minimum length of employment, hours worked, and company size requirements, existing research indicates that twelve weeks may not be a sufficient length of time for women who have given birth to rest, recover [32], and adjust nor affordable for many women. Regardless of the provision, many women in the United States return to work much sooner than twelve weeks: more than 25% return within two months of giving birth and about 10% return in four

Table 2
Ordinal regression of health in the first month after returning to work

Variable	Model 2* (N = 237)				Model 3 (N = 236)				Model 4 (N = 236)			
	B	SE	OR	95% CI	B	SE	OR	95% CI	B	SE	OR	95% CI
Demographics												
Age	.012	.030	1.012	.954–1.073	.013	.030	1.013	.955–1.075	.023	.031	1.024	.964–1.088
Race (white) Ref = other	-.072	.367	.931	.454–1.909	.017	.382	1.017	.481–2.150	.083	.387	1.086	.509–2.319
Marital status (married) Ref = other	.340	.459	1.405	.572–3.453	.455	.468	1.577	.631–3.943	.394	.496	1.483	.561–3.923
Income												
Ref = less than \$50,000												
\$50,000 to \$74,999	-.150	.4677	.861	.344–2.153	-.186	.482	.830	.323–2.134	-.114	.486	.892	.344–2.312
\$75,000 to \$99,999	.007	.4124	1.007	.449–2.259	.177	.423	1.193	.521–2.736	.188	.426	1.207	.523–2.784
\$100,000 or more	.044	.412	1.045	.466–2.344	.106	.422	1.111	.486–2.539	.174	.427	1.190	.516–2.746
Education (less than/bach.) Ref = Master's/prof./doc.	-.201	.321	.818	.436–1.534	-.342	.329	.710	.372–1.355	-.429	.333	.651	.339–1.249
Mental health (month 1)												
Ref = "not at all"												
Depression "nearly every day"	-2.597	.791	.074	.016–.351	-2.394**	.802	.091	.019–.439	-2.343**	.825	.096	.019–.483
Depression "more than half the days"	-1.769**	.511	.171	.063–.464	-1.705**	.529	.182	.064–.512	-1.760**	.534	.172	.060–.490
Depression "several days"	-1.152***	.308	.316	.173–.578	-1.203***	.314	.300	.162–.556	-1.155***	.317	.315	.169–.587
Anxiety "nearly every day"	-1.455*	.680	.233	.062–.886	-1.781*	.687	.169	.044–.648	-1.811**	.693	.164	.042–.635
Anxiety "more than half the days"	-1.551**	.5080	.212	.078–.574	-1.732**	.524	.177	.063–.494	-1.664**	.529	.189	.067–.534
Anxiety "several days"	-.762*	.309	.467	.255–.854	-.795*	.315	.451	.243–.837	-.783*	.317	.457	.246–.850
Duration maternity leave												
Ref = 6 weeks or less												
7 to 9 weeks					-.023	.432	.977	.419–2.276	-.051	.434	.950	.406–2.225
10 to 12 weeks					.302	.310	1.352	.736–2.483	.291	.315	1.337	.722–2.477
13 to 16 weeks					.610	.566	1.840	.606–5.581	.537	.571	1.711	.559–5.243
17 weeks or more					2.668***	.551	14.418	4.896–42.460	2.678***	.552	14.552	4.934–42.918
Pregnancy/childbirth comp.												
Pregnancy mental health complications									.139	.452	1.150	.474–2.790
Pregnancy physical complications									-.617*	.281	.540	.311–.935
Childbirth complications									.094	.264	1.099	.655–1.843
Model fit statistics												
-2 Log Likelihood (-2LL)	540.786***				537.783***				544.202***			
Nagelkerke Pseudo R Square	.314				.389				.403			

* $p < .05$. ** $p < .01$. *** $p < .001$.

B, unstandardized beta; SE, standard error; OR, odds ratio; CI, confidence interval.

* Model 1 results not shown; available upon request.

weeks or less [33]. In terms of the broader global context in which these patterns ensue, the United States is an extreme outlier in terms of having no federal mandate of paid maternity/parental leave, whereas the trend in other Organisation for Economic Co-operation and Development (OECD) countries is to mandate a minimum of two months paid leave upward to a year or more in some nations [34]. The findings of this study suggest measurable and significant costs in terms of health and work adjustments that are related to length of leave.

While beyond the scope of this study due to sample size limitations, breastfeeding support in the workplace is another important aspect of work re-entry for mothers. Breastfeeding protections in the workplace were secured for Americans in 2010, per the Patient Protection and Affordable Care Act amended Section 7 of the Fair Labor Standards Act of 1938 (29 U.S.C. 207) [35]. These provisions include the right to break times for milk expression for up to

a year postpartum as well as access to a private space, other than a bathroom, in which to express milk. Although not directly measured in this study, additional exploration is needed of the links between availability of these formal types of work reentry supports and women's wellness.

Although some advances have been made regarding the protection of breastfeeding rights in the workplace, little has been carried out to address other possible employee postpartum needs. The policy response in the United States to postpartum adjustment among women who work and have given birth has mostly been based on the assumption that women can and should return to work and resume all aspects of the job as if nothing has changed and no additional supports are needed. The findings of this study challenge the adequacy of the status quo response. Additional difficulties faced by new mothers, such as marital strain [36–38], increased expenditures [39], and fatigue due to sleep disturbances

[40–43] are all real in their consequences for well-being and work outcomes. Because sleep specifically has been identified as an occupational need in other research [44] without expressly identifying its pertinence to women returning to work after childbirth, more research is needed to identify the ways sleep deprivation may be tied to health and work adjustments after childbirth.

Employers who wish to retain employees and maximize longer term productivity would benefit from considering a menu of supports in the workplace for new mothers, including but not limited to referrals to periodic mental health screenings, added flexibility in work schedules to prioritize and accommodate health care appointments, and options to flex schedule or reenter at reduced hours, especially within the first months of work reentry. In addition to structural and policy changes, changing the cultures of workplaces to respect, accommodate, and integrate the unique needs of returning mothers could be facilitated by implementing parent-friendly policies overtly, sharing these policies and expectations widely, and having supervisors and mentors trained to model desired modes of professional conduct.

While supportive work options should be universally available, pregnancy and birth experiences vary considerably—physically, psychologically, and socially [45,46]—and individual needs may require additional accommodations and support to help workers make this important transition. Given the potential consequences for women and their job-related adjustment, interventions that aim to reduce physical and psychological sequelae of pregnancy and childbirth are a worthwhile pursuit. Our study suggests need, opportunity, and potential benefit for employers to play a strategic and proactive role in these efforts. Physical and occupational therapy interventions may hold particular promise, particularly for women with preexisting disabilities [47].

4.1. Limitations

Several limitations to the present study merit consideration. First, the study drew upon variables from a one-time cross-sectional survey; a prospective longitudinal design would address several of these limitations. A longitudinal design would allow for determination of causal ordering among the mental health and health variables at work-reentry. In addition, a prospective study would address issues of potential recall bias by investigating maternal experiences at work transition in real time. The survey used in this study was anonymous and responses were not verified with patient health records. While several studies have found that maternal pregnancy-related recall corresponds highly to patient charts [48,49], and Githens et al. [50] found that maternal recall within 6 years is as accurate as data extracted from the patient chart, caution should be used in interpreting findings because the possibility of recall bias remains [51].

Second, the sample was highly educated, had higher than average income, and was relatively homogenous in terms of race (predominantly white) and marital status (majority are married or in a domestic partnership). Results cannot be generalized outside of this sample. Further work is necessary to determine whether findings would be replicated in a more demographically and occupationally diverse sample.

Finally, single-item measures were used to measure self-rated depression, anxiety, and health, which is limiting from a measurement standpoint. However, previous research has provided justification for the use of single-item measures for depression screening [52,53], established discriminant [54], and predictive value [55]. Similarly, single-item measures of self-rated health have been found to demonstrate reliability and concurrent, as well as discriminant validity [56,57]. Although this study provides evidence that the constructs in this analysis are related to one another

in patterned ways, results should be interpreted with caution until the same patterns are demonstrated with measures of the constructs that have demonstrated reliability and validity.

4.2. Future directions

To better understand the challenges and opportunities faced by women and employers in the postpartum return-to-work period, several areas of specific research are needed. First, systematic research on a myriad of employer-based policies, accommodations, and interventions offered in the United States to support women's work reentry after childbirth is needed. This would provide a detailed map of the structural employment landscapes that working women must negotiate as they traverse postpartum transitions, which is lacking in research literature. Second, although this study contributes to research in this area by ascertaining perspectives of women directly about their own postpartum experiences, more studies are needed that lift voices of women regarding both their experiences and their ideas of what employer-based responses they would want or need. Such research must include qualitative and quantitative approaches. Third, studies that build and use longitudinal data are needed to refine analysis of the temporal ordering of health experiences during the work reentry transitions in the postpartum period. Fourth, studies are needed that evaluate employer-sponsored programs intended to support women's reentry to work in the postpartum period. Such studies could include refined cost–benefit analyses regarding employer-based supports to women in postpartum and attention to work safety issues facing women workers in the postpartum period.

5. Conclusion

A significant proportion of women in our study was found to be struggling with health and emotional needs at the time of work reentry after maternity leave. In addition, physical complications of pregnancy and length of maternity leave were found to impact work reentry health. These findings suggest that employers have an interest in addressing the unique needs of women returning to work environments after childbirth. For several reasons, it may be advantageous for employers to address workers' unmet needs in the postpartum work reentry transition. Given the significant costs associated with replacing employees [57] and the direct and indirect costs associated with postpartum ill health, absenteeism, and productivity loss [17,18], inclusion of provisions in employee benefits and employer policies may prove cost effective in the long run. Such support mechanisms are highly relevant to employers who wish to embrace, attract, and retain the diverse talents and skills which women bring to the labor force in the form of increased profitability, productivity, and innovation [58].

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

Acknowledgments

The authors are grateful to the women who were willing to share their pregnancy, childbirth, and return-to-work experiences with us for this study.

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