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Women's work assessments, provider interactions, and discussions of work accommodations in pregnancy

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Running Head Title: Women's work assessments, provider interactions, and provision of work accommodations in pregnancy

STRUCTURED ABSTRACT: 133 words including headings

Objectives: More US women are working during pregnancy. We explore factors associated with obstetrical providers' assessment of pregnant women's work and necessary accommodations.

Methods: We conducted a cross-sectional survey of pregnant women from late 1st-3rd trimester. We explored self-reports of provider-initiated conversations on workplace accommodation and associated factors.

Results: Provider-patient communication about work during pregnancy varied by occupation, race, and medical history. Physically demanding occupations and Black race were associated with more discussions about job changes and safe work practices. Prior pregnancy complications and comorbidities increased the likelihood of work restrictions as did lower education level.

Conclusions: Occupation often goes undiscussed during prenatal visits. Work restriction-related conversations occur more frequently with medically complex or demographically classified high-risk workers. Providers need more tools to make work safety determinations in pregnancy in often-high-volume clinical settings.

KEYWORDS: Pregnancy-related work accommodations; provider conversations; provider-patient interactions; occupation; pregnancy; job hazards

LEARNING OUTCOMES:

- Summarize the factors associated with provider-patient conversations regarding job accommodations during pregnancy.
- Describe how provider-patient conversations may impact a pregnant woman's perceived need for job accommodations.

INTRODUCTION:

In 2022, 56.8 percent of US women participated in the labor force.[1] This represents a significant increase from the 1970s when only 43% of women participated.[2] More American women work into and through their childbearing years, with over 1.6 million first-time pregnant workers in the U.S. in any one year. [3] Almost eight of every ten employed pregnant women work during their last month of pregnancy, and the majority of them intend to return to work after maternity leave.[3-4] Given the number of pregnant individuals in the work force and the diversity of their jobs, awareness of the potential risks of certain types of work during pregnancy is important for both health care providers and patients. [5]

Employment in the United States has evolved from industrial and manufacturing work to predominantly service-oriented jobs and managerial positions. This requires a corollary shift in attention to potentially deleterious work exposures inherent in the current economy, and which include extensive hours, shift work, standing, lifting and physical workload, and their associated risks for adverse pregnancy outcomes.[6] Absent these risks, most individuals can safely work until the end of pregnancy without placing themselves or their fetus at undue risk.[5-6]

Providers are understandably uncertain in determining individual risk for a pregnant woman from specific work demands like standing, lifting, and working long hours or erratic shifts. Prior research has demonstrated that few providers who care for pregnant patients are routinely asking them about potential environmental exposures or about their occupations.[7-8] Furthermore, even those who do ask about occupation, fail to collect additional data on specific job tasks or hazards.[9] Many providers have reported a lack of training on how to properly assess exposures and how to follow-up, particularly in their earlier years of practice.[9] Many providers are inadequately trained on the concept of work accommodations, in how to write a work restriction

note, or about the consequences of a poorly written or poorly timed note on the patient, particularly when considering employment status and benefits. [10]

However, providers can play a critical role in identifying occupational hazards, educating patients on how to work safely, and interfacing with the employer to prevent harm without adversely affecting their employment and job benefits both in the short- and long-term, or causing hardship for other workers. Yet, many women remain uninformed about their job options or have not been empowered to ask their employers about workplace accommodations. In a national survey of women who gave birth in US hospitals, more than half of women felt they needed a change in their job duties or work schedule during pregnancy.[4] At least one-quarter of women who wanted a schedule adjustment, and 40% of those who felt they needed a duty change, did not discuss these concerns with their employers. [4] However, this survey did not address interactions with the obstetrician or other healthcare provider in facilitating change, or how those accommodations could be implemented. Our prior work also noted that women were infrequently requesting job accommodations even if they perceived a potential job hazard or felt that a job duty change is necessary.[11] Prior research has explored the prevalence of provider-led conversations, however the emphasis was on conversations that occurred prior to pregnancy and there were no data on the specifics of what was discussed. [12]

In this study, we explore how engagement in discussion of the problems of work assessment, hazard recognition, and workplace policy between patients and providers is impacted by occupation, and other demographic and health characteristics with the expectation that these may differ by factors perceived as placing a pregnant individual in a higher risk category. We also examine whether these conversations influence whether a woman asks for, or receives, work accommodations during pregnancy.

METHODS

We conducted a cross-sectional survey of women in the late-first through third trimester of pregnancy. Women were recruited by study personnel in two antepartum clinics within our hospital care system to complete a questionnaire on their workplace, obstetrical history and experiences with their obstetrical provider. The two clinic locations were selected because combined, we could recruit pregnant patients from diverse racial/ethnic, socioeconomic, and insurance backgrounds. To be eligible, participants must have been working 30 hours a week or more, a criterion for "full-time" work in prior studies; at least 18 years of age; and able to complete the questionnaire in either English or Spanish.[13]

Data Collection:

A validated questionnaire used in a prior study of occupational stressors was adapted for this study to include a focus on participant self-assessment of work, work modifications made by, or requested of, the employer during the pregnancy, and actions of the obstetrical provider in evaluating the woman's job.[13] The 15-minute questionnaire was administered by a trained research assistant in a private area of the clinic where they could also hear if they were being called in for their appointment. Individuals were asked if their obstetrical care providers asked about their current job duties or provided information on risky activities and safe work. Respondents were also asked if they received a work restriction note, discussed changes in their job duties, and whether their providers suggested any accommodation due to potential work hazards. Participants' free-text responses on their occupation were coded to the 2010 US Census Bureau Occupational Classification system using the National Institute for Occupational Safety and Health (NIOSH) automatic coding system, which represented the most up to date coding system that was available when study data collection began. Using the guidelines outlined in the

coding structure, the resulting Standardized Occupational Classification (SOC) codes, were then aggregated into four high level occupational categories that were used in our analyses. [14-15] Additional details on aggregation of occupational categories and initial analyses of the prevalence of pregnancy health risk factors and work features have been published previously.[11]

Data Analysis:

Associations between reported provider actions and participants' job perceptions were assessed using chi-squared analyses. Univariate and multivariable analyses were performed using a binary logistic model in the generalized linear modeling procedure of SPSS 24. We assessed the odds of provider discussions on work hazards and modification by occupation, race/ethnicity, income and education level, and medical and obstetrical history. Multivariable models were constructed by assessing the mutually adjusted contributions of occupation and race/ethnicity to the likelihood of provider discussion, adjusted for any of the above variables that were statistically significant in the univariate analyses and resulted in a greater than 10% change in parameter estimation for either the occupational or race/ethnicity factors. Asian/Pacific Islanders were excluded from the analyses due to the relatively small numbers of participants and the consequent impact on the overall stability of the models. The study was approved by the Institutional Review Board of the Icahn School of Medicine at Mount Sinai and all participants provided signed informed consent prior to questionnaire administration.

RESULTS

Demographics

Four hundred twenty-six eligible pregnant women agreed to complete the questionnaire, however 11 individuals (8 from Clinic #1 and 3 from Clinic #2) were called in for their appointments before answering all of the questions. The most common major occupational groups among the

participants were Management (n=58), Office and Administrative Support (n=52), and Sales (n=46). (Table 1) When looking at the four large scale aggregated occupational categories, the group with the largest representation in our study sample was "Management, Finance, Business and Health Sciences" which will be henceforth know as "management" in our results tables for simplicity. Forty-three percent (n=183) of participants identified as White, and about one-fifth each self-identified as Black/African American and Latina respectively. A little over one fifth of the participants had a high school or less (n=97), and about one-third had incomes less than $50,000 per year, though 15% of respondents chose not to answer the income question. Twenty-four percent (n=100) reported participation in income-screening entitlement programs (i.e. WIC, SNAP, TANF, Section 8), and all individuals were insured. Participants recruited from Clinic 1 were younger, enrolled at a later gestational age, less likely to identify as White, and lower income and education with higher participation in means tested programs. (Table 2)

Health Risk Factors:

Median maternal age and gestational age at enrollment in the study and survey completion were 31 years [IQR=27-36] and 22 weeks [IQR = 16.6-32.9] respectively; and half of the participants reported that their current pregnancy was their first. At the time of enrollment, about one-third reported having at least one current pregnancy comorbidity (n=159) which included hypertension, gestational diabetes, threatened miscarriage or fetal growth problem, though there were differences in distribution between the two clinic sites.

Provider Conversations and Job Accommodation

Less than half of the women (n=173) reported that their pregnancy care provider discussed their occupation; 35% (n=147) reported that they received counselling on high- risk activities, and one-third (n=138) reported that their care provider discussed safe work. Only 13% (n=52) of

participants reported receiving a work restriction note during their pregnancy, and only 11 % (n=46) reported that their providers suggested potential work accommodations. As shown in Table 3, the percentages of women who reported receiving a work restriction note, discussing a job duty change, or that their provider suggested potential accommodations, were higher among individuals who either reported a perception of job harm, felt that a change was needed, or who requested a job accommodation, compared to the overall sample.

Multivariable analyses of characteristics associated with provider conversations

Several characteristics were associated with whether pregnant patients had discussions with their treating provider regarding their work. In adjusted analyses, individuals working in installation, production, or transportation occupations had substantially higher odds of having conversations on potential changes to their job duties (OR = 8.79, 95% CI: 1.22–63.26) and reported being informed about the risks of taking leave too early (OR = 14.4, 95% CI: 1.54–134.8), compared with those in management, business, health, finance, or science occupations. (Table 4) Sales and office workers were also more likely to report that their provider proposed solutions or job duty modifications (OR = 2.67, 95% CI: 1.08–6.57). For counseling on risky job activities, only those in service and support roles showed significantly higher odds (OR = 2.38, 95% CI: 1.15–4.91) after adjustment for other variables.

Black participants had higher odds of discussing job duty changes (OR = 3.60, 95% CI: 1.10–11.80) and of receiving counseling on ways to work safely (OR = 2.55, 95% CI: 1.31–4.95), compared with White participants. Latina participants did not show significant adjusted associations across outcomes.

Participants' medical history was also a significant influence on provider conversations related to work. A history of complications in a prior pregnancy increased the likelihood of a provider

discussing job modifications (OR = 3.55, 95% CI: 1.21–10.43). Gestational age and current comorbidities were strongly associated with receiving a work restriction or leave note; each additional week of gestation increased the likelihood of a provider note by about 8% (OR = 1.08, 95% CI: 1.03–1.14), and those with medical comorbidities also had markedly higher odds of receiving a note (OR = 4.82, 95% CI: 2.17–10.70). Higher levels of educational attainment were inversely associated with discussions regarding safe work after adjustment in the model (OR=0.72, 95% CI 0.55-0.95). Increasing income levels demonstrated a negative association with several of our provider-patient conversation variables. However, inclusion of income and education covariates, while statistically significant in many of the univariate analyses did not result in measurable changes to the point estimates for occupation and race/ethnicity in most of the multivariable models, except for discussions regarding provider-proposed solutions to mitigating workplace hazards, where they served to attenuate the relationship.

DISCUSSION

Our data indicate that pregnant women and providers infrequently discuss work, current job duties, or ways to work safely during pregnancy at prenatal visits. This may be due to lack of training in work hazard assessment, and differing guidance on what constitutes unsafe work or how to advise these patients accordingly (particularly when work may involve psychosocial stressors in contrast to physical ones). However, there were notable response differences by occupation. In both the unadjusted and adjusted models, individuals working in installation, production and transportation occupations, although small in numbers, were more likely to report receiving counselling on high-risk activities and safe work practices; and more likely to be counselled on risks of taking leave early. These findings align with prior research showing that physically demanding or hazardous jobs prompt more frequent provider engagement around

work capacity and safety, likely because these roles involve exposures—such as heavy lifting, prolonged standing, or chemical hazards—that are more visibly incompatible with pregnancy.[16] Individuals working in service and support occupations had the highest odds of being counseled on risky job activities before and after adjustment compared to women working in management positions. The 'service and support' occupational category consists of a wide variety of disciplines, including traditional food service workers, healthcare support workers (home health aides and nursing assistants), protective service workers (firefighters and law enforcement); as well as personal service workers such as beauticians, trainers, and pet groomers. These jobs differ in many ways but are connected by their potential for high physical demands on workers and as a result, an increased risk of physical hazard. For example, individuals working in healthcare support occupations, such as home health aides, are at an elevated risk of experiencing musculoskeletal injuries, with back injuries being the most common.[17-19] By contrast, individuals who were classified as working in a "management" occupation tended to hold executive and leadership roles in business, finance, health care, and the sciences, where the physical demands of the work tend to be less. Similarly, individuals who work in sales and office administration had more than twice the odds compared to management on being counseled on risky job activities, but the point estimate was no longer statistically significant after adjustment for confounding variables. Interestingly however, sales and office administration workers were most likely reported that their provider suggested potential job modifications after adjustment. This may suggest that providers may respond not only to physical demands but also to perceived flexibility within certain job structures.

Racial differences were also evident. Black participants were more likely than White participants to report discussions about changing job duties and receiving counseling on safe work practices.

One possible explanation for this may be increased awareness of racial and ethnic disparities in birth outcomes, resulting in greater attention to a variety of possible physical and psychosocial risk factors from work, with the intent of preventing unnecessary risks to the fetus from the mothers' jobs. Disparities in pregnancy-related morbidity and mortality, especially among Black women through preterm delivery, are well documented. As a result, some providers may be aware of a need to spend additional time focusing on identification of modifiable risk factors including those related to occupational and environmental exposures. However, the absence of significant associations for Latina participants after adjustment suggests that racial and ethnic disparities in work-related counseling are not uniform and may be shaped by intersecting factors such as job type, socioeconomic status, or communication dynamics within clinical encounters. We found that women with a history of pregnancy complications or with at least one current comorbidity were more likely to report a work accommodation or restriction note; and that individuals with a prior pregnancy co-morbidity were likely to report discussing job duty changes with their pregnancy care provider. This suggests that providers are likely to consider occupational activity restrictions if the patient has a documented risk of a prior poor health outcome or is perceived to be an increased risk because of a current medical condition. Therefore, it is evident that clinical history played an important role in shaping the provider's behavior. Similarly, advancing gestational age also showed a positive association with receiving a work-restriction note. This is consistent with clinical guidelines that emphasize heightened monitoring and accommodation needs as pregnancy progresses or medical complexity increases.[5]

We also found that having a higher education level made individuals less likely to have conversations with their pregnancy providers. This is consistent with prior research

demonstrating that lower education levels are generally associated with higher rates of hazardous work conditions, albeit with some racial/ethnic differences in factors that mediate that relationship.[20] Having a higher level of education may be perceived as a protective factor during pregnancy, or perhaps is assumed to denote a less-physically-demanding job, and may result in obstetrical providers not feeling that counseling is necessary. This pattern raises concerns about potential assumptions that could inadvertently limit counseling for some groups while overlooking risks in others. We did not ask our study participants to specify who initiated the conversations (provider vs themselves); and future studies of this topic should attempt to ascertain that information more directly, especially given that results from qualitative studies of post-natal women suggest a preference that providers initiate the conversations.[21]

Our study had several strengths, such as intentional recruitment from two different clinical settings to ensure that our sample was sufficiently socioeconomically, racially, and occupationally diverse to obtain a wide variety of participant perspectives on their providers. However, there were several limitations to our methodology. We did not collect information on type of pregnancy provider (i.e. physician vs nurse practitioner vs midwife or other), nor did we collect data on who initiated the conversation (patient vs provider) as mentioned earlier. At the time of our study recruitment, all participants had at least one prenatal visit, but we did not have data on the number of prenatal appointments they had prior to enrollment in our study. We also did not collect data on the staffing models of the two clinics to assess any potential impact of practice level factors. Furthermore, our primary predictor and outcome variables were based on self-report, and some data were incomplete due to participants' inability to complete the full questionnaire before initiating their clinic appointments. In addition, given that the median gestational age for survey completion was 22 weeks, and the survey was completed only once,

the study did not allow us to consider the possibility of different pregnancy providers opting to have those discussions further along in a woman's pregnancy. Future studies should collect data on detailed characteristics of providers, including existing practices to discuss leave from work at specific points during pregnancy, assess these questions longitudinally as pregnancy progresses, and obtain objective data of pertinent comorbidities from medical documentation.

CONCLUSION/IMPLICATIONS

Work-related conversations between pregnant patients and their healthcare providers varied substantially by occupational demands, race, and clinical history. Individuals in physically demanding jobs and those with medical risk factors were most likely to receive counseling, proposed job modifications, or work restrictions. These patterns suggest that providers tailor guidance based on perceived risk, yet the variability across groups highlights opportunities to standardize work-related counseling during prenatal care. One of the important factors that may contribute to this variability is the amount of time a provider has allotted for prenatal visit and their having to prioritize the content of a clinic visit. This is especially true if a patient has other medical comorbidities that could affect a pregnancy, and which thus need to be addressed more rapidly, differing health priorities by gestational age, and whether the medical problems have a direct effect on reduction or removal from work. Ensuring that all pregnant workers receive consistent, evidence-informed guidance may help reduce disparities in workplace protections and support healthier pregnancy outcomes.

Prenatal care providers need to understand both the hazards of the workplace and employment law when writing work restrictions or leave notes to ensure they are protecting both the pregnant person and their employment rights. However, they receive little formal education about how to write work restriction notes.[10] Best practices for an effective work restriction request include a

brief summary of the patient's pregnancy-related capacities (insofar as this is consistent with medical privacy and confidentiality statutes) and specific limitations on job tasks.[10,22-23] Avoidance of job restriction or accommodation language that is overly vague or broad is important to avoid jeopardizing a patient's employment status, salary, and benefits. Instead, medical certification should include: the specific capabilities and limitations of the pregnant worker based on their medical impairments; the expected duration of the condition and restrictions; the worker's capacity to perform the position's essential functions; and the specific limitations required.[23]Additionally, a patient's occupation and essential job tasks should be assessed with special attention given to industries with a high physical burden, that may not always be immediately apparent. Though providers may appreciate the demands and hazards of manufacturing, transportation and construction workers, the demands of individuals working in the service sector may be less apparent. For example, individuals who work in food services spend the majority of their workday walking or standing, often lifting or carrying over 30 pounds of weight at a time.[24]

Other helpful strategies include working together to provide a list of reasonable accommodations that the pregnant woman could present to her employer as part of the interactive process for reasonable accommodations. In the US, these are made in compliance with the Pregnant Workers Fairness Act, the Americans with Disabilities Act and its amendments, and other federal and state statutes that address work disability, with similar regulations in other jurisdictions.[25-27] Further research on how to provide prenatal care providers with better tools to make these determinations is essential and will help reduce uncertainty and improve maternal health in the workplace.

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Table 1: Occupations held by participants at time of study enrollment, by 2010 Standardized Occupational Classification (SOC) major group

Major Occupational Group (SOC Major Code)	**N =426**	**%**
Management (SOC 11)	58	14%
Office and Administrative Support (SOC 43)	52	12%
Sales and Related (SOC 41)	46	11%
Education, Training and Library (SOC 25)	39	9%
Healthcare Support (SOC 31)	33	8%
Business and Finance (SOC 13)	28	7%
Arts, Design, Entertainment, Sports and Media (SOC 27)	28	7%
Healthcare Practitioners and Technical (SOC 29)	22	5%
Food Preparation and Serving (SOC 35)	22	5%
Community and Social Services (SOC 21)	21	5%
Personal Care and Service (SOC 39)	18	4%
Computer, Mathematics, Architecture, Engineering, Life and Social sciences (SOC 15,17,19)	16	4%
Legal (SOC 23)	14	3%
Building and Grounds Cleaning, Maintenance (SOC 37)	14	3%
Installation Production, Transportation, and Material Moving, Military* (SOC 49, 51,53)	8	2%
Protective Services (SOC 33)	7	2%
Aggregated Occupational Category Name (SOC Major Codes)	**N=426**	
Management, Finance, Business, Health Sciences (11-27)	226	53.1%
Service and Support (31-39)	94	22.1%
Sales and Administration (41-43)	98	23.0%
Installation, Production and Transportation (49-53)	8	1.9%

***** Represents a combination of SOC groups with similar physical demands and fewer than 5 participants.

Table 2: Demographics and health characteristics of participants

Variable	Total Participants (n=426)	Clinic 1	Clinic 2
Maternal Age: Median [IQR]	31 years [27-36]	28 years [24-33]	33 years [29-36]
Gestational Age at Enrollment: Median (IQR)	22 weeks [16.6-32.9]	31.7 weeks [24.5-35.9]	20 weeks [13.4-22.9]
Education			
High school or less	22.8% (n=97)	39.8% (n=61)	13.6%(n=36)
Associate's degree	23.7% (n=101)	35.3%(n=54)	17.7% (n=47)
Bachelor's Degree	29.6% (n=126)	19.0% (n=29)	36.5% (n=97)
Master's Degree or higher	22.3% (n=95)	5.9%(n=9)	32.3%(n=86)
Missing/No response	1.6% (n=7)	N/A	N/A
Race/Ethnicity			
White	43% (n=183)	6.0%(n=9)	65.2%(n=174)
Black	19.2% (n=82)	32.7%(n=49)	12.4%(n=33)
Latina	19% (n=81)	54.0% (n=81)	0.0%(n=0)
Asian/Pacific Islander	12.2% (n=52)	3.3%(n=5)	18.4% (n=49)
*Other/No response**	6.1% (n=26)	9.4%(n=15)	4.1% (n=11)
Household Income			
< 50,000	31.6% (n=135)	56.0% (n=89)	17.2%(n=46)
50,000-100,000	23% (n=98)	20.1%(n=32)	24.7%(n=66)
>100,000	30.3% (n=129)	2.5%(n=4)	46.8%(n=125)
Missing/Did not answer	14.9% (n=64)	21.4%(n=34)	11.2%(n=30)
Participation in Income-Screening Entitlement Programs	24% (n=100)	56%(n=84)	6%(n=16)
First Pregnancy			
Yes	49.5%(n=211)	44.7%(n=71)	52.4% (n=140)
No	50.5%(n=215)	55.3%(n=88)	47.6%(n=127)
Prior pregnancy comorbidity (Non-nulliparous participants only)^			
Yes	56.1%(n=119)	63.5%(n=54)	51.2%(n=65)
No	43.9%(n=93)	36.5%(n=31)	48.8%(n=62)
Current pregnancy comorbidity^			
Yes	37.5%(n=159)	30.8% (n=49)	16.6%(n=44)
No	62.5%(n=265)	69.2%(n=110)	83.4%(n=221)

*Includes one individual who identified as Native American and individuals for whom there was no response

^Includes individuals with hypertension, threatened miscarriage, gestational diabetes or a fetal growth problem

Table 3: Reported Provider Actions vs Participant Job Perceptions and Need for Accommodation

		Total participants (n=414)^	Participant job perceptions		
			Report Job Harm Perception (n=104)	Felt Job Change Needed (n=133)	Requested Job Change (%) (n=105)
Did your provider?					
Ask about current work					
	Yes	42% (n=173)	39% (n=41)	44% (n=58)	48% (n=50)
Counsel on high-risk activities					
	Yes	35% (n=147)	35%(n=36)	42% (n=56)	48% (n=50)**
Discuss safe work					
	Yes	33% (n=138)	33% (n=34)	41% (n=55)*	48% (n=50)*
Give work restriction note					
	Yes	13% (n=52)	24% (n=24)***	24% (n=31)***	30% (n=31)***
Discuss job duty change					
	Yes	9% (n=37)	21% (n=22)***	22% (n=29)***	24% (n=25)***
Inform on risks of leaving job early					
	Yes	6% (n=24)	5% (n=5)	8% (n=10)	8% (n=8)
Suggest accommodations					
	Yes	11% (n=46)	17% (n=18)*	20% (n=26)***	26 % (n=27)***

^Missing respondents (12) *p value <0.05 **p value <0.01 *** p value <0.001 for chi-squared analysis comparing those with a positive answer to those answering 'no'

Table 4. Multivariable analyses of characteristics associated with provider conversations related to work.

	Did you discuss the possibility of changing your job duties with your physician? (N=299)				**Did provider counsel you on risky job activities in pregnancy? (N=299)**			
Factor (n)	Univariate odds ratio* (95% CI)		Multivariable model odds ratio* (95% CI)		Univariate odds ratio* (95% CI)		Multivariable model odds ratio* (95% CI)	
Major SOC Group								
Installation, production, transportation (6)	**11.00**	**1.72 - 70.6**	**8.79**	**1.22 - 63.26**	3.02	0.59 - 15.6	2.43	0.43 - 13.59
Sales & office administration (71)	**3.73**	**1.36 - 10.3**	2.49	0.81 - 7.67	**2.21**	**1.23 - 3.98**	1.86	0.96 - 3.59
Services & support (57)	2.20	0.67 - 7.24	1.47	0.40 - 5.41	**3.13**	**1.67 - 5.87**	**2.38**	**1.15 - 4.91**
Management, finance, business, health, science (165)	REF		REF		REF		REF	
Race/Ethnicity								
Latina (67)	**3.81**	**1.27 - 11.46**	1.87	0.48 - 7.28	1.39	0.77 - 2.55	0.74	0.35 - 1.58
Black (64)	**5.23**	**1.81 - 15.09**	**3.60**	**1.10 - 11.80**	**2.35**	**1.29 - 4.25**	1.51	0.77 - 2.98
White (168)	REF		REF		REF		REF	
History of complication in a previous pregnancy								
Yes (31)	**4.58**	**1.71 - 12.25**	**3.55**	**1.21 - 10.43**	**1.66**	**0.78 - 3.51**		
No or primigravida (268)	REF		REF		REF			
Gestational age at visit (weeks)	1.03	0.98 - 1.08			1.03	0.98 - 1.08		
Current comorbidity (yes) (72)	1.73	0.70 - 4.23			1.29	0.75 - 2.23		
Educational attainment (299)	**0.61**	**0.41 - 0.91**			**0.72**	**0.58 -0.89**		
Total family income (299)	**0.64**	**0.36 - 0.92**			**0.68**	**0.52 - 0.88**		

	Did your provider propose solutions or changes in your job duties to potential hazards at work? (N=299)				**Did your provider discuss with you ways to work safely? (N=299)**			
	Univariate odds ratio* (95% CI)		Multivariable model odds ratio* (95% CI)		Univariate odds ratio* (95% CI)		Multivariable model odds ratio* (95% CI)	
Major SOC Group								
Installation, production, transportation	**6.82**	**1.12 – 41.4**	4.49	0.70 – 28.8	3.34	0.65 – 17.24	1.34	0.24 - 7.50
Sales & office administration	**3.79**	**1.64 – 8.76**	**2.67**	**1.08 - 6.57**	**2.18**	**1.20 – 3.96**	1.35	0.69 - 2.63
Services & support	2.32	0.88 - 6.11	1.41	0.49 - 4.06	**3.22**	**1.71 - 6.01**	1.77	0.87 - 3.61

Management, finance, business, health, science	REF		REF		REF		REF	
Race/Ethnicity								
Latina	**2.72**	**1.16 - 6.33**	1.32	0.50 - 3.53	**3.08**	**1.67 - 5.66**	1.95	0.99 - 3.80
Black	**2.59**	**1.09 - 6.14**	1.58	0.61 - 4.08	**3.80**	**2.05 - 7.03**	**2.55**	**1.31 - 4.95**
White	REF		REF		REF		REF	
History of complication in a previous pregnancy								
Yes	1.15	0.37 – 3.52			1.58	0.74 – 3.37		
No or primigravida	REF				REF			
Gestational age at visit (weeks)	1.03	0.99 - 1.07			**1.05**	**1.02 - 1.07**		
Current comorbidity (yes)	1.31	0.59 - 2.87			1.57	0.91 - 2.73		
Educational attainment	0.79	0.58 - 1.08			**0.57**	**0.45 - 0.72**	**0.72**	**0.55 - 0.95**
Total family income	**0.60**	**0.40 - 0.90**	0.67	0.38- 1.19	**0.60**	**0.46 - 0.78**		

	Has your physician ever written you a work restriction or work leave note during this pregnancy? (N=299)				**Provider inform you of the risk of going on leave too early? (N=299)**			
	Univariate odds ratio* (95% CI)		Multivariable model odds ratio* (95% CI)		Univariate odds ratio* (95% CI)		Multivariable model odds ratio* (95% CI)	
Major SOC Group								
Installation, production, transportation	4.40	0.79 – 24.5	3.23	0.40 - 26.01	**27.0**	**3.49 - 208.8**	**14.4**	**1.54 - 134.8**
Sales & office administration	**2.48**	**1.15 – 5.38**	1.32	0.48 - 3.65	**4.98**	**1.21 – 20.5**	3.00	0.63 - 14.1
Services & support	1.94	0.81 - 4.65	0.67	0.19 - 1.89	**5.29**	**1.22 – 22.9**	2.83	0.56 - 14.4
Management, finance, business, health, science	REF		REF		REF		REF	
Race/Ethnicity								
Latina	**4.28**	**1.89 - 9.67**	1.66	0.59 - 4.70	1.88	0.57 - 6.16	0.56	0.14 - 2.21
Black	2.22	0.88 - 5.57	1.18	0.41 - 3.42	1.53	0.43 - 5.42	0.59	0.15 - 2.35
White	REF		REF		REF		REF	
History of complication in a previous pregnancy								
Yes	1.49	0.53 – 4.20			0.52	0.08 – 4.03		
No or primigravida	REF				REF			
Gestational age at visit (weeks)	**1.09**	**1.05 - 1.14**	**1.08**	**1.03 - 1.14**	1.01	0.95 - 1.06		
Current comorbidity (yes)	**5.05**	**2.46 - 10.36**	**4.82**	**2.17 - 10.70**	0.71	0.20 - 2.57		
Educational attainment	**0.60**	**0.44 - 0.84**			**0.49**	**0.30 - 0.81**	0.68	0.36 – 1.28

Total family income	**0.49**	**0.33 - 0.74**			**0.51**	**0.29 - 0.92**	0.62	0.24 – 1.60

*Models constructed using 299 participants with complete information recorded and Asian/Pacific Island and Other ethnicity groups not used due to small numbers.

Statistically significant results shown in **bold** type. 95%CI: 95% confidence interval around odds ratio.

Univariate models present odds ratios for each factor separately; multivariable models incorporate work (major SOC group) and race/ethnicity retaining other covariates that remained significant or changed the point estimates for SOC group or race/ethnicity by 10% or more.

Graphical abstract