Night work and postpartum depression: a national register-based cohort study[1]

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1. *Supplementary tables*
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Supplementary table S1. Odds ratios of postpartum depression by number of night shifts during the first trimester among 19 221 public hospital employees in Denmark, 2007–2015.

Number of night shifts	Pregnancies		Cases		Crude analysis		Adjusted analysis [a]	
	N	%	N	%	OR	95% CI	OR	95% CI
All pregnancies, N=24 257								
Day work [b]	9898	40.8	36	0.4	1.00	Referent	1.00	Referent
1-3	3364	13.9	12	0.4	0.98	0.51-1.90	0.97	0.49-1.93
> 3	10 995	45.3	29	0.3	0.73	0.44-1.20	0.65	0.39-1.11
Pregnancies with ≥ 1 night shift during the first 32 pregnancy weeks, N=14 359								
1-3	3364	23.4	12	0.4	1.00	Referent	1.00	Referent
> 3	10 995	76.6	29	0.3	0.74	0.38-1.45	0.65	0.33-1.28

OR = odds ratio; CI = confidence interval
[a] Adjusted for age, body mass index, socioeconomic status, parity, sickness absence three months prior to pregnancy and prior diagnosed severe depression
[b] At least one day shift and no night, evening or early morning shift during the first trimester

Supplementary table S2. Odds ratios of postpartum depression by duration of night shifts during the first trimester among 19 221 public hospital employees in Denmark, 2007–2015.

Duration of night shifts	Pregnancies		Cases		Crude analysis		Adjusted analysis [a]	
	N	%	N	%	OR	95% CI	OR	95% CI
All pregnancies, N=19 235								
Day work [b]	10 376	53.9	36	0.4	1.00	Referent	1.00	Referent
≤ 8 hours [c]	3677	19.1	10	0.3	0.78	0.39-1.59	0.74	0.35-1.56
> 12 hours [d]	5182	27.0	15	0.3	0.83	0.45-1.54	0.83	0.43-1.58
Pregnancies with ≥ 1 night shift during the first 32 pregnancy weeks, N=8859								
≤ 8 hours	3677	41.5	10	0.3	1.00	Referent	1.00	Referent
> 12 hours	5182	58.5	15	0.3	1.06	0.48-2.37	0.77	0.28-2.17

OR = odds ratio; CI = confidence interval
[a] Adjusted for age, body mass index, socioeconomic status, parity, sickness absence three months prior to pregnancy and prior diagnosed severe depression
[b] At least one day shift and no night, evening or early morning shift during the first trimester
[c] Only night shifts lasting ≤ 8 hours
[d] At least one night shift lasting > 12 hours

Supplementary table S3. Odds ratios of postpartum depression by consecutive night shifts during the first trimester among 19 221 public hospital employees in Denmark, 2007–2015.

Consecutive night shifts	Pregnancies N	%	Cases N	%	Crude analysis OR	95% CI	Adjusted analysis [a] OR	95% CI
All pregnancies, N=24 735								
Day work [b]	10 376	42.0	36	0.4	1.00	Referent	1.00	Referent
1 [c]	4955	20.0	16	0.3	0.93	0.51-1.69	0.96	0.51-1.82
2-3 [d]	7125	28.8	21	0.3	0.85	0.49-1.47	0.74	0.14-1.35
≥ 4 [e]	2279	9.2	4	0.2	0.51	0.18-1.43	0.48	0.17-1.35
Pregnancies with ≥ 1 night shift during the first 32 pregnancy weeks, N=14 359								
1	4955	34.5	16	0.4	1.00	Referent	1.00	Referent
2-3	7125	49.6	21	0.3	0.91	0.48-1.75	0.94	0.41-2.17
≥ 4	2279	15.9	4	0.2	0.54	0.18-1.62	0.64	0.18-2.23

OR = odds ratio; CI = confidence interval
[a] Adjusted age, body mass index, socioeconomic status, parity, sickness absence three months prior to pregnancy and prior diagnosed severe depression
[b] At least one day shift and no night, evening or early morning shift during the first trimester
[c] Only single night shifts
[d] At least one spell of 2-3 consecutive night shifts and no spells of ≥ 4 consecutive night shifts
[e] at least one spell of ≥ 4 consecutive night shifts

Supplementary table S4. Odds ratios of postpartum depression by number of quick returns [a] and quick returns after a night shift [b] during the first trimester among 19 221 public hospital employees in Denmark, 2007–2015.

Quick Returns	Pregnancies N	%	Cases N	%	Crude analysis OR	95% CI	Adjusted analysis [c] OR	95% CI
All pregnancies, N=24 735								
Day work [d]	10 376	42.0	36	0.4	1.00	Referent	1.00	Referent
0 [e]	5814	23.5	19	0.3	0.94	0.53-1.66	0.94	0.52-1.68
1-3	6285	25.4	18	0.3	0.83	0.46-1.47	0.75	0.41-1.37
> 3	2260	9.1	4	0.2	0.51	0.18-1.44	0.38	0.11-1.28
Pregnancies with ≥ 1 night shift during the first 32 pregnancy weeks, N=14 359								
0	5814	40.5	19	0.3	1.00	Referent	1.00	Referent
1-3	6285	43.8	18	0.3	0.88	0.46-1.67	0.86	0.44-1.69
> 3	2260	15.7	4	0.2	0.54	0.18-1.59	0.43	0.12-1.50
Quick Returns after a night shift								
All pregnancies, N=24 735								
Day work	10 376	42.0	36	0.4	1.00	Referent	1.00	Referent
0	1286	5.2	8	0.6	1.80	0.83-3.91	1.77	0.81-3.89
1-3	6015	24.3	14	0.2	0.67	0.36-1.25	0.60	0.31-1.16
> 3	7058	28.5	19	0.3	0.78	0.44-1.37	0.73	0.40-1.34
Pregnancies with ≥ 1 night shift during the first 32 pregnancy weeks, N=15 367								
0	1286	8.9	8	0.7	1.00	Referent	1.00	Referent
1-3	6015	41.9	25	0.3	0.37	0.16-0.89	0.32	0.14-0.76
> 3	7058	49.2	11	0.2	0.43	0.19-0.99	0.42	0.19-0.96

OR = odds ratio; CI = confidence interval
[a] Less than 11 hours between any type of shifts
[b] Less than 28 hours between a night shift and the next shift

[c] Adjusted for age, body mass index, socioeconomic status, parity, sickness absence three months prior to pregnancy and prior diagnosed severe depression

[d] At least one day shift and no night, evening or early morning shift during the first trimester

[e] At least one night shift and no quick returns