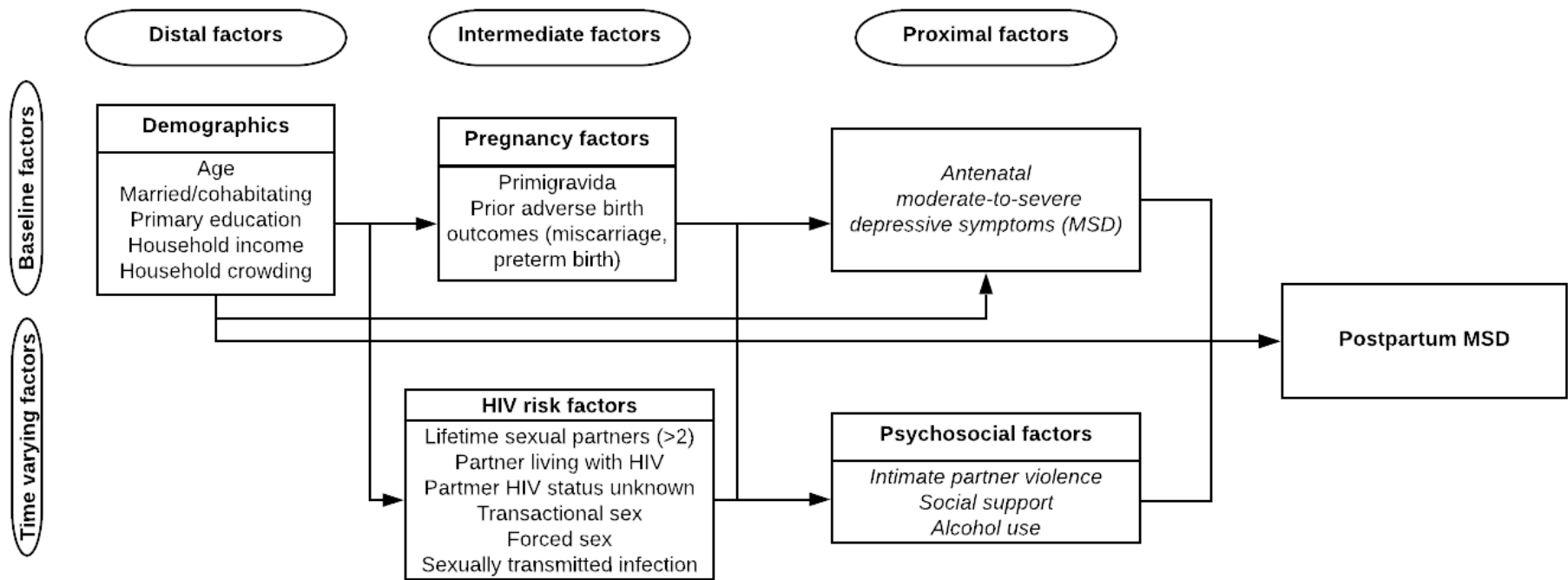**Conceptual model for perinatal depressive symptoms and cofactors**

Differences between women with depressive symptom information in pregnancy only, not postpartum
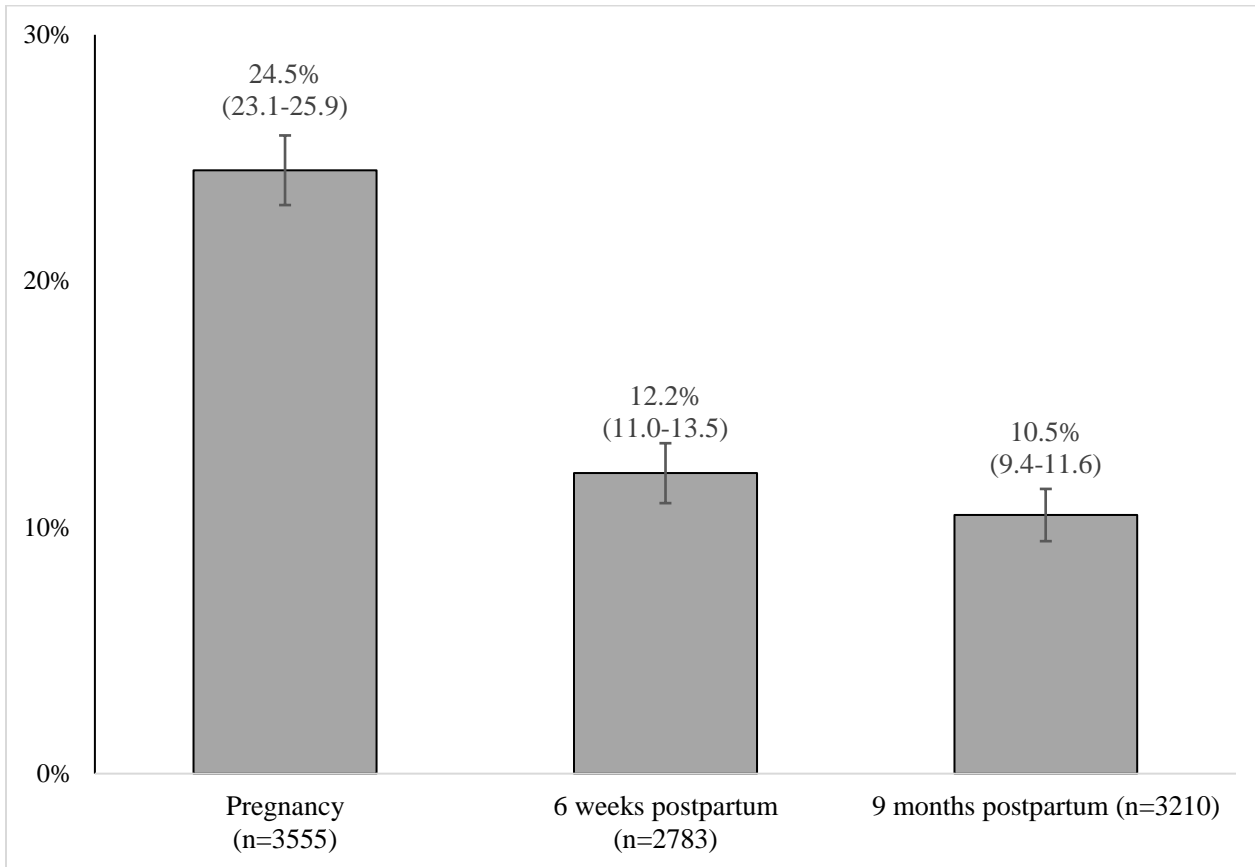
Characteristics	Depressive symptom information in pregnancy and postpartum (included in analysis)		Depressive symptom data in pregnancy only (not included in analysis)		
	N	n (%)	N	n (%)	p-value
Age (years)	3553	24.0 (21.0, 28.7)	327	23.1 (20.3, 27.0)	0.006
Gestational age at enrollment (weeks)	3555	24.0 (20.0, 29.4)	327	24.0 (20.0, 30.0)	0.38
Not married or not living with a partner	3522	501 (14.2%)	324	73 (22.5%)	<0.001
Regularly employed	3515	491 (14.0%)	320	56 (17.5%)	0.084
Household crowding (>2 people/room)	3529	1725 (48.9%)	324	133 (41.0%)	0.007
Partner living with HIV	3507	144 (4.1%)	322	13 (4.0%)	0.95
High HIV risk[1]	3555	1257 (35.4%)	327	126 (38.5%)	0.25
Social support score[2]	3489	75.0 (62.0, 88.0)	321	73.0 (60.0, 88.0)	0.28
Low social support[2] (MOS-SSS score <72)	3489	1330 (38.1%)	321	130 (40.5%)	0.40
Intimate partner violence [3] (HITS score ≥10)	3550	278 (7.8%)	326	28 (8.6%)	0.63
Moderate-to-severe depressive symptoms (pregnancy)	3555	870 (24.5%)	327	83 (25.4%)	0.71

[1]We evaluated HIV risk using the Pintye et al.[17] risk score (high HIV risk: score >6 = "Yes", score ≤6 = "No").
[2]We evaluated social support using the 18-item Medical Outcomes Study social support score (MOS-SSS), defining low social support as scores below 72 (Low social support: MOS-SSS score score <72 = "Yes", MOS-SSS score ≥ 72 = "No").
[3]We evaluated intimate partner violence using the 4-item Hurt, Insult, Threaten, and Scream scale (HITS), defining intimate partner violence as scores of 10 and above (IPV: HITS score ≥10 = "Yes", HITS score <10 = "No").

Moderate-to-severe perinatal depressive symptoms by study visit

Among the 2438 women with depressive symptom data in all three time points, prevalence estimates were not meaningfully different. Pregnancy: 23·7% (579/2438), 6 weeks postpartum: 11·6% (284/2438), 9 months postpartum: 10·5% (255/2438). Line brackets on bar chart represent 95% confidence intervals.

Moderate-to-severe depressive symptoms during pregnancy by PrIMA study site

Facility	N	n (%)
Siaya facility 1	112	28 (25.0)
Siaya facility 2	228	38 (16.7)
Homa Bay facility 1	150	6 (4.0)
Homa Bay facility 2	177	16 (9.0)
Homa Bay facility 3	196	23 (11.7)
Siaya facility 3	200	29 (14.5
Siaya facility 4	170	54 (31.8)
Homa Bay facility 4	174	60 (34.5)
Homa Bay facility 5	179	119 (66.5)
Homa Bay facility 6	178	40 (22.5)
Homa Bay facility 7	176	40 (22.7)
Siaya facility 6	215	20 (9.3)
Homa Bay facility 8	218	83 (38.1)
Homa Bay facility 9	234	59 (25.2)
Siaya facility 6	80	25 (31.3)
Siaya facility 7	197	21 (10.7)
Homa Bay facility 10	167	30 (18.0)
Siaya facility 8	158	91 (57.6)
Siaya facility 9	209	18 (8.6)
Siaya facility 10	137	70 (51.1)
Total	3555	870 (24.5)

Correlates of MSD during pregnancy and predictors of postpartum MSD compared to no MSD ever from multivariable GEE models

	Pregnancy (n=3041)			Postpartum (n=2567)		
	Multivariable GEE Analysis[1]			Multivariable GEE Analysis[2]		
	aPR	**95% CI**	**p**	**aRR**	**95% CI**	**p**
Baseline factors						
Age (years)	1·00	0·99-1·01	0·749	**1·03**	**1.01-1·05**	**0·007**
Completed education (years)	1·01	0·99-1·02	0·535	**1·04**	**1.00-1·08**	**0·040**
Household crowding (>2 people/room)	**1·14**	**1·01-1·29**	**0·041**	0.98	0·78-1·23	0·834
Not married/living with a partner	**1·41**	**1·03-1·91**	**0.030**	1·33	0·95-1.84	0·095
Gestational age at enrollment (weeks)	1·01	0·99-1·02	0·330			
Multiparous	1·06	0·89-1·26	0·518			
Prior pregnancy loss	1·14	0·95-1·38	0·165	1·21	0·88-1·66	0·243
Lifetime sexual partners ≥ 2	**1·36**	**1·11-1·66**	**0·003**	**1·42**	**1.01-2·00**	**0·044**
Partner HIV-positive	**1·48**	**1·09-2·00**	**0·012**			
Partner HIV status unknown	**1·30**	**0.91 -1·85**	0·143			
Sexually transmitted infection	**1·30**	**0·99-1·70**	**0·057**			
Transactional sex	1·19	0·81-1·75	0·370			
Forced sex	1·12	0·72-1·74	0·619			
Ever drinks alcohol	1·09	0·72-1·65	0·682	1·30	0.84-2.01	0·232
Low social support (MOS-SSS score <72)	**1·77**	**1·19-2·64**	**0·005**			
Intimate partner violence[a] (HITS score ≥10)	**1·84**	**1·44-2·35**	**<0·001**			
Time-varying factors						
Intimate partner violence[b]				**2.47**	**1.72-3.56**	**<0·000**
Low social support				**2.83**	**2.30-3.49**	**<0·001**
Time since delivery (days)				1·00	1·00-1·00	0·893

[1]We estimated adjusted Prevalence Ratios (aPR) from a multivariable generalized estimating equation (GEE) with a Poisson family, log link, and independent correlation structure, clustered by facility with outcome of MSD in pregnancy (Y/N); Independent variables: Age (years), Not married/living with a partner (Y/N), Completed education (years), household crowding (Y/N), Gestational age at enrollment (Y/N), Multiparous (Y/N), Prior pregnancy loss (Y/N), Lifetime sexual partners >2 (Y/N), Partner living with HIV (Y/N), Partner HIV status unknown (Y/N), Transactional sex (Y/N), Forced sex (Y/N), Sexually transmitted infection (Y/N), Ever drinks alcohol (Y/N), Low social support (Y/N), IPV (Y/N).

[2]We estimated adjusted Relative Risks (aRR) from a multivariable generalized estimating equation (GEE) with a Poisson family, log link, and independent correlation structure, clustered by participant with outcome of MSD in postpartum only (Y/N); Independent variables: Age (years), Not married/living with a partner (Y/N), Completed education (years), household crowding (Y/N), Prior miscarriage (Y/N), Lifetime sexual partners >2 (Y/N), Ever drinks alcohol (Y/N), , low social support (time-varying [current visit], Y/N), intimate partner violence (time-varying [current visit], Y/N), time since delivery (days).

[a]We evaluated social support using the 18-item Medical Outcomes Study social support score (MOS-SSS), defining low social support as scores below 72 (Low social support: MOS-SSS score score <72 = "Yes", MOS-SSS score ≥ 72 = "No")

[b]We evaluated intimate partner violence using the 4-item Hurt, Insult, Threaten, and Scream scale (HITS), defining intimate partner violence as scores of 10 and above (IPV: HITS score ≥10 = "Yes", HITS score <10 = "No"

Model selection process for selected group-based trajectory model for perinatal depressive symptoms among Kenyan women

	Bayesian Information Criterion (BIC)	Akaike Information Criterion (AIC)	Log Likelihood (LL)
Step 1: Identifying number of trajectory groups by best-fit model[1]			
Two trajectory groups	-26900.7	-26851.4	-26835.4
Three trajectory groups	-26867.0	-26793.0	-26769.0
Four trajectory groups	-26747.1	-26648.4	-26616.4
Five trajectory groups[2]	-26720.4	-26597.1	-26557.1
Step 2: Identifying polynomial form of each trajectory group by best-fit model[2]			
Model selected based on BIC value: Group 1 ("no depressive symptoms): linear Group 2: ("Resolving MSD") quadratic Group 3: ("Chronic mild symptoms") quadratic Group 4: ("Persistent MSD") cubic Group 5: ("Emergent MSD") cubic	-26648.8	-26525.5	-26485.5

[1]We compared BIC for each of the four models in Step 1 and selected the 5-trajectory model since it had the most optimal BIC value. All trajectory groups were initially modeled using cubic polynomials. We used the extension for non-random attrition to relax assumptions of missingness completely at random.

[2]We ran all model permutations for 5-trajectories with polynomial forms (linear – quadratic) and selected the best fitting model using BIC. We used the extension for non-random attrition to relax assumptions of missingness completely at random.

Model adequacy characteristics for selected group-based trajectory model for perinatal depressive symptoms among Kenyan women

	Group 1: "no depressive symptoms" n=372	Group 2: "Resolving MSD" n=139	Group 3: "Chronic mild symptoms" n=2709	Group 4: "Persistent MSD" n=295	Group 5: "Emergent MSD" n=40
Proportion in each group based on assignments for maximum posterior probability[1]	10.46%	3.91%	76.20%	8.30%	1.13%
Expected proportion in each group based on sums of posterior probabilities[1]	13.14 %	4.75%	71.65%	9.30%	1.16%
Average posterior probabilities[2]	71.88%	77.07%	87.90%	78.32%	90.83%

[1]We achieved model adequacy since the proportion based on maximum posterior probability and expected proportion based on sums of posterior probabilities are within <5% of each other.
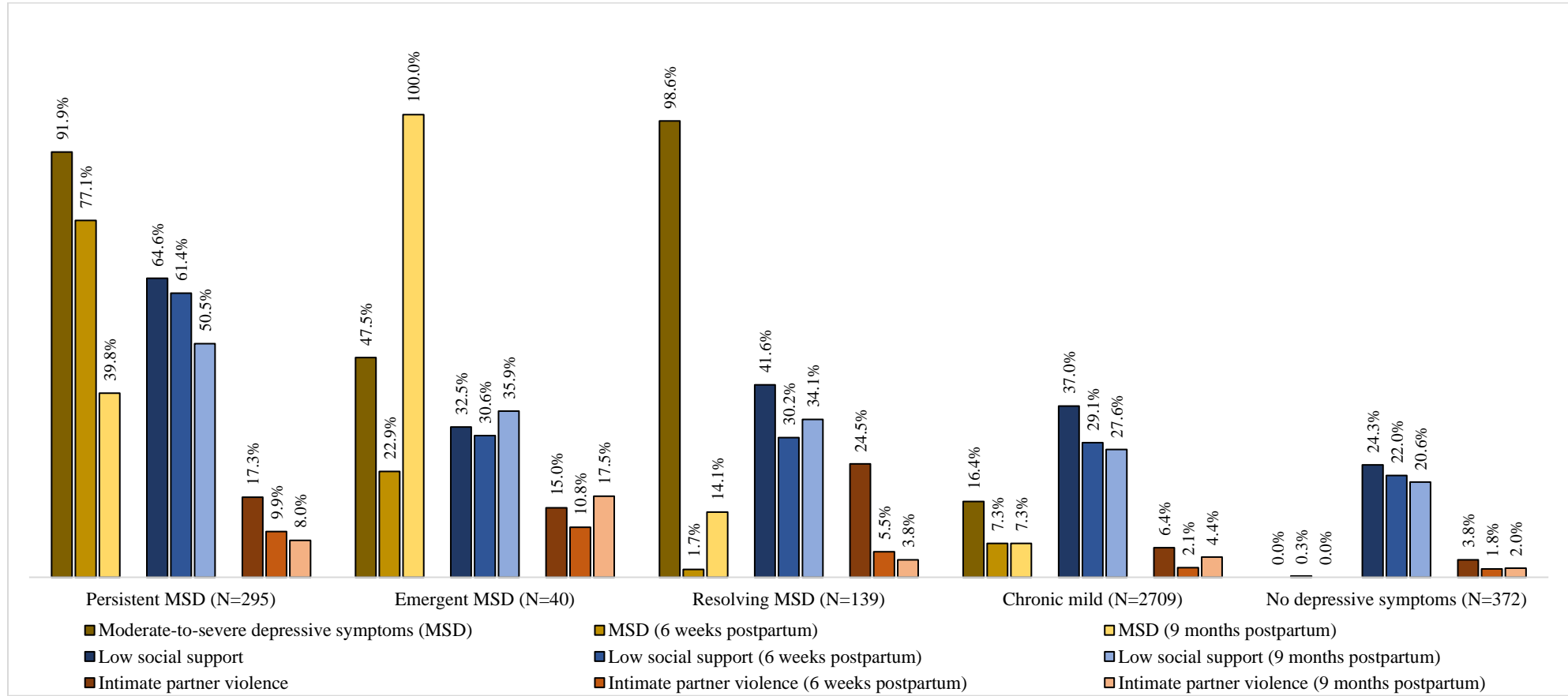
[2]We achieved model adequacy since average posterior probability in each group was ≥70%.

Predictors of perinatal depressive symptoms trajectory group membership: results from multivariable multinomial logistic regression

	Emergent MSD vs. No depressive symptoms (n=40)			Resolving MSD vs. No depressive symptoms (n=139)			Persistent MSD vs. No depressive symptoms (n=295)		
	aOR[1]	95% CI	P	aOR	95% CI	p	aOR	95% CI	p
Older adults (>24 years)	**2·2**	**1·1-4·4**	**0·034**	1·1	0·7-1·7	0·593	1·3	0·9-1·8	0·168
Not married/living with a partner	2·2	0·8-5·8	0·122	2·5	1·4-4·5	0·001	1·6	1.0-2.6	0·065
Household crowding	0.8	0·4-1·5	0·456	1·6	1·1-2·4	0·024	1·3	0·9-1·8	0·133
High HIV risk	1·0	0·5-2·1	0·902	**1·7**	**1·1-2·6**	**0·010**	**1·8**	**1·3-2·5**	**0·001**
Prior pregnancy loss	1·6	0·6-4·1	0·340	1·7	0·9-3·1	0·095	**1·9**	**1·2-3·1**	**0·011**
Low social support	1·4	0·7-2·8	0·366	**1·9**	**1·3-2·9**	**0·003**	**5·3**	**3·8-7·5**	**<0·001**
Intimate partner violence	**4·0**	**1·4-11·4**	**0·009**	**6·2**	**3·1-12·3**	**<0·001**	**3·5**	**1·8-6·5**	**<0·001**

[1]We estimated adjusted odds ratios (aOR) from a multivariable multinomial logistic regression model with outcome: trajectory groups from group-based trajectory model; independent variables: older age (>24 years) (Y/N), Not married/living with a partner (Y/N), Household crowding (Y/N), High HIV risk (Y/N), Prior pregnancy loss (Y/N), Low social support (Y/N), Intimate partner violence (Y/N).

Profiles of perinatal depressive symptom group members

Legend:
- Moderate-to-severe depressive symptoms (MSD)
- MSD (6 weeks postpartum)
- MSD (9 months postpartum)
- Low social support
- Low social support (6 weeks postpartum)
- Low social support (9 months postpartum)
- Intimate partner violence
- Intimate partner violence (6 weeks postpartum)
- Intimate partner violence (9 months postpartum)

	Persistent MSD			Emergent MSD			Resolving MSD			Chronic mild			No depressive symptoms		
	Median (IQR)			Median (IQR)			Median (IQR)			Median (IQR)			Median (IQR)		
CESD-10 Scores	Preg.	6 weeks	9 months	Preg.	6 weeks	9 months	Preg.	6 weeks	9 months	Preg.	6 weeks	9 months	Preg.	6 weeks	9 months
Among all members	14 (12-17)	12 (10-16)	8 (5-11)	9 (3-12)	3 (0-9)	22 (20-27)	19 (17-22)	2 (0-5)	3 (0-7)	5 (3-8)	4 (3-6)	3 (2-6)	0 (0-1)	0 (0-1)	0 (0-0)
Among members with MSD	14 (12-18)	13 (12-17)	12 (11-14)	12 (11-14)	13 (10-18)	22 (20-27)	19 (17-22)	11 (10-12)	11 (10-13)	11 (10-12)	11 (10-13)	11 (10-13)	0 (0-0)	10 (10-10)	0 (0-0)