Te mate pēpi | Perinatal mortality

Body mass index (BMI)

BMI is used here as a proxy indicator of risk. Higher BMI has a number of implications for the health of the mother and the baby, as well as implications for care. While not a perfect measure of all these aspects, it is straightforward to calculate, and therefore forms the basis of most risk assessment in studies that help in our understanding of adverse weight-related outcomes.

Women with a high BMI are more likely to have higher amounts of visceral fat, which is associated with a higher risk of gestational diabetes.[1] However, as it is not currently feasible to determine visceral fat on all pregnant women, BMI is used as a proxy, albeit imperfect, indicator of risk. In general, women with a higher BMI have an increased amount of visceral fat.[2] However, distribution of fat does vary by ethnic group. For example, women of Indian ethnicity tend to have higher amounts of total body fat with lower BMI.[3] As well as the risk from gestational diabetes,[4] obesity as measured by BMI increases the risk of stillbirth,[5, 6] hypertension[7] and pre-eclampsia.[8]

In addition, it is important for providers to consider the care needs of women with higher weight. Increased access to ultrasound may be required, as abdominal palpation can be difficult. Furthermore, different equipment is often needed, such as appropriate-sized blood pressure cuffs, hoists, and suitably weight-rated beds and operating tables. DHBs need to have appropriate equipment to meet the needs of women in their care, in order to provide care in a way that does not cause discomfort or distress to women.

Our data show that regardless of whether data from MAT (Table 3.20 and Figure 3.14) or the PMMRC (Table 3.21) were used, mortality from stillbirths, neonatal deaths and perinatal related deaths overall increased with increasing maternal BMI. Due to incomplete matching between the two data sets, there were some individuals who were in the PMMRC data set but not in MAT, and other situations where individuals in MAT were not able to be matched to the PMMRC records. Using PMMRC data for maternal BMI (numerator) had the net effect of reducing the numbers of women in BMI categories 25.00–29.99 and 30.00–34.99, and increasing the numbers of women in BMI categories 35.00–39.99 and ≥40. This suggests that MAT records provide an underestimate of true maternal BMI.

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Extracted from the full report at: www.hqsc.govt.nz/our-programmes/mrc/pmmrc/publications-and-resources/publication/3832

Table 3.20: Perinatal related mortality rates (per 1,000 births) by maternal BMI at registration with maternity care 2013–2017 using MAT data*

Maternal BMI (kg/m^2)	Total births		Fetal deaths						Neonatal deaths			Perinatal related deaths (total)		
			Termination of pregnancy			Stillbirths								
	N=274,506		n=551			n=1,261			n=655			n=2,467		
	N	%	n	%	Rate	n	%	Rate	n	%	Rate	n	%	Rate
<18.50	7,648	2.8	16	2.9	2.09	21	1.7	2.75	14	2.1	1.84	51	2.1	6.67
18.50–24.99	130,864	47.7	291	52.8	2.22	491	38.9	3.75	247	37.7	1.90	1,029	41.7	7.86
25.00–29.99	71,278	26.0	139	25.2	1.95	371	29.4	5.20	173	26.4	2.44	683	27.7	9.58
30.00–34.99	36,988	13.5	67	12.2	1.81	179	14.2	4.84	122	18.6	3.32	368	14.9	9.95
35.00–39.99	17,290	6.3	24	4.4	1.39	119	9.4	6.88	60	9.2	3.50	203	8.2	11.74
≥40	9,941	3.6	13	2.4	1.31	76	6.0	7.65	38	5.8	3.86	127	5.1	12.78
Unknown	497	0.2	<3	x	-	4	0.3	-	<3	x	-	6	0.2	-
Data not supplied to MAT			18			-			−21			−3		

* All data limited to mothers who were registered for care with an LMC (either a midwife, obstetrician or GP) claiming from the Section 88 Primary Maternity Services Notice.

'x' indicates percentage suppressed due to small numbers.

Sources: Numerator: PMMRC's perinatal data extract where matched to MAT data, 2013–2017; Denominator: MAT births 2013–2017.

Table 3.21: Perinatal related mortality rates (per 1,000 births) by maternal BMI at registration with maternity care 2013–2017 using PMMRC and MAT data*

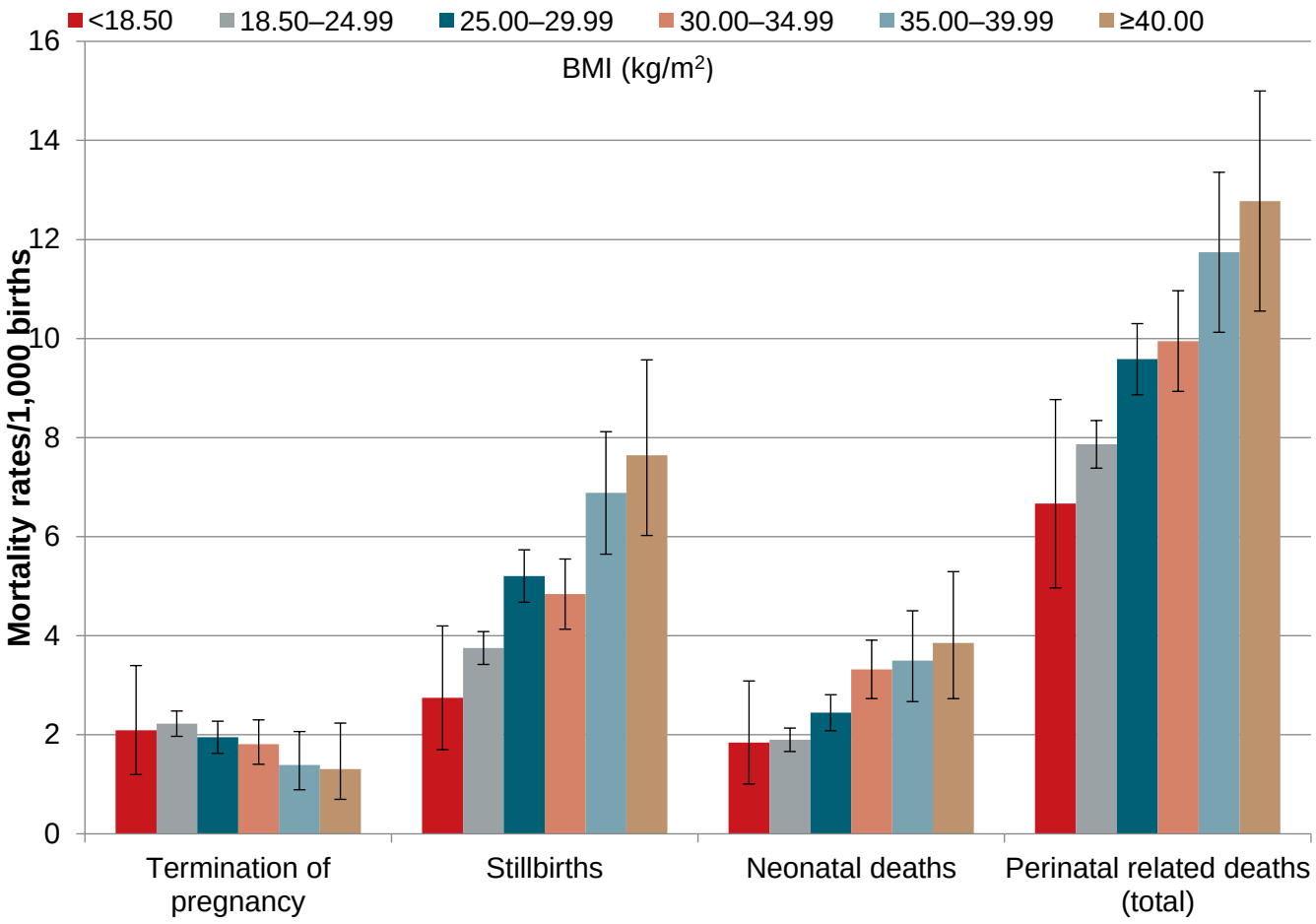
Maternal BMI (kg/m^2)	Total births		Fetal deaths						Neonatal deaths			Perinatal related deaths		
			Termination of pregnancy			Stillbirths								
	N=274,506		n=569			n=1,261			n=634			n=2,464		
	N	%	n	%	Rate	n	%	Rate	n	%	Rate	n	%	Rate
<18.50	7,648	2.8	16	2.8	2.09	22	1.7	2.88	8	1.3	1.05	46	1.9	6.01
18.50–24.99	130,864	47.7	295	51.8	2.25	497	39.4	3.80	240	37.9	1.83	1,032	41.9	7.89
25.00–29.99	71,278	26.0	143	25.1	2.01	354	28.1	4.97	174	27.4	2.44	671	27.2	9.41
30.00–34.99	36,988	13.5	66	11.6	1.78	183	14.5	4.95	106	16.7	2.87	355	14.4	9.60
35.00–39.99	17,290	6.3	26	4.6	1.50	121	9.6	7.00	62	9.8	3.59	209	8.5	12.09
≥40	9,941	3.6	17	3.0	1.71	78	6.2	7.85	40	6.3	4.02	135	5.5	13.58
Unknown	497	0.2	6	1.1	-	6	0.5	-	4	0.6	-	16	0.6	-

* All data limited to mothers who were registered for care with an LMC (either a midwife, obstetrician or GP) claiming from the Section 88 Primary Maternity Services Notice.

BMI = body mass index.

Sources: Numerator: PMMRC's perinatal data extract where matched to MAT data, 2013–2017; Denominator: MAT births 2013–2017.

Figure 3.14: Perinatal related death rates (per 1,000 births) by maternal BMI* (with 95% CIs) 2013–2017



* All data limited to mothers who were registered for care with an LMC (either a midwife, obstetrician or GP) claiming from the Section 88 Primary Maternity Services Notice.

BMI = body mass index.

Sources: Numerator: PMMRC's perinatal data extract where matched to MAT data, 2013–2017; Denominator: MAT births 2013–2017.