

The impact of obesity on outcomes of midwife-led pregnancy and childbirth in a primary care population: a prospective cohort study.

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Disclosure belangen spreker

(potentiële) belangenverstrengeling	Geen
Voor bijeenkomst mogelijk relevante relaties met bedrijven	n.v.t.
<ul style="list-style-type: none">• Sponsoring of onderzoeksgeld• Honorarium of andere (financiële) vergoeding• Aandeelhouder• Andere relatie, namelijk ...	Onderzoek tot stand gekomen binnen aanstelling bij Academie Verloskunde Maastricht

The impact of obesity in a midwife-led care population

Aanleiding

Congenitale Afwijkingen ↑

Zwangerschapsdiabetes

Hypertensie ↑

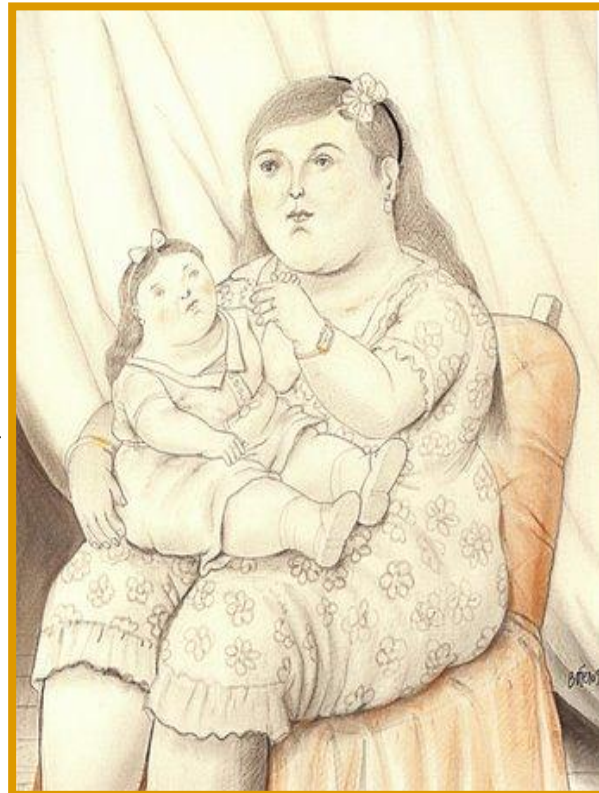
Doodgeboorte ↑

Inleidingen ↑

NVO ↑

Epidurale analgesie ↑

Meconium ↑



Foetale nood ↑

Vaginale kunstverlossing ↑

Sectio ↑

Apgarscore <7 at 5 min ↑

HPP ↑

LGA ↑ **SGA** ↓

NICU opname ↑

Maternale infecties ↑

Borstvoeding ↓

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Onderzoeksvragen

1. Hebben zwangeren met overgewicht en obesitas, die na de intake in aanmerking komen voor eerstelijns zorg, minder **fysiologische** zwangerschappen en bevallingen dan vrouwen met een normaal gewicht?



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Onderzoeksvragen



2. Hebben vrouwen met overgewicht en obesitas **meer spoedverwijzingen** durante partu en – in geval van baring in de eerste lijn- **meer ongunstige** uitkomsten post partum dan vrouwen met een normaal gewicht?

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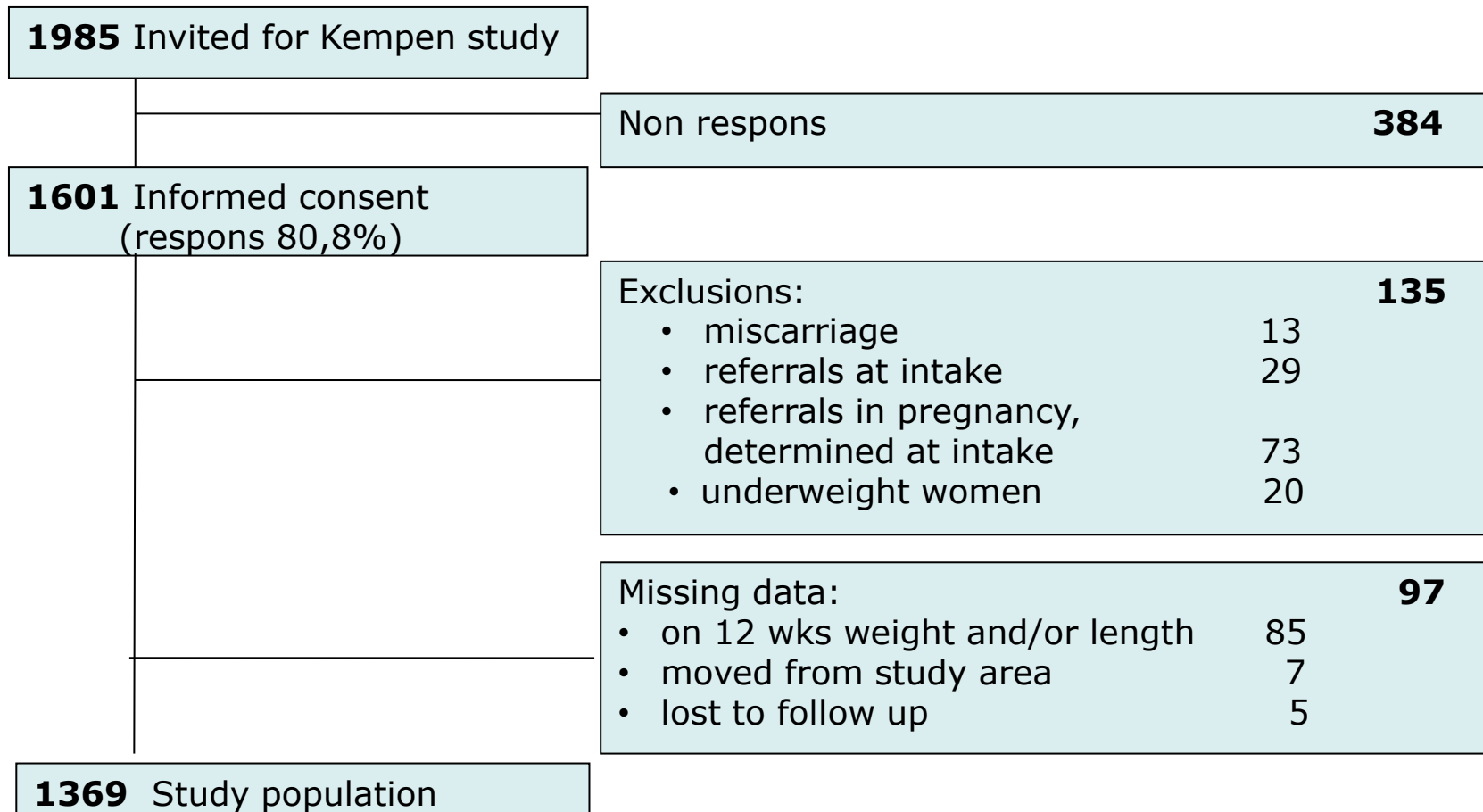


Fig 1 Flowchart study population

The impact of obesity in a midwife-led care population

Resultaten

Tabel 1 Prevalentie obesitas

WHO-classif.	N	(%)
BMI 18.5-24.9	756	(55.2)
BMI 25 -29.9	412	(30.1)
BMI 30 -34.9	137	(10.0)
BMI \geq 35	64	(4.7)
	1369	(100.0)

Table 1: Multiple logistic regression: predictor variables on midwife-led pregnancy and childbirth

Predictor variables	Midwife-led pregnancy (N=989)		Midwife-led childbirth (N=613)	
	N (%)	AOR (95% CI)	N (%)	AOR (95% CI)
Multiparous (vs. nulliparous)		2.35 (1.76-3.15)		6.18 (4.39-8.70)
Age		0.98 (0.94-1.02)		0.99 (0.95-1.04)
Partner				2.23 (0.65-7.67)
Education: Low		1*		-
Middle		1.45 (1.01-2.10)		-
High		1.72 (1.15-2.55)		-
BMI: Normal weight (n=756)	570 (75.4)	1*	365 (48.3)	*
Overweight (n=412)	294 (71.4)	0.81 (0.60-1.10)	182 (44.2)	0.63 (0.44-0.90)
Obese class I (n=137)	90 (65.7)	0.66 (0.43-1.01)	47 (34.3)	0.49 (0.29-0.84)
Obese classes II-III (n=64)	35 (54.7)	0.38 (0.21-0.69)	19 (29.7)	0.48 (0.21-1.12)



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Table 2: Multiple logistic regression: BMI classification as predictor of midwife-led pregnancy

BMI classes		Midwife-led pregnancy (N=989)	
		N (%)	AOR (95% CI)
Normal weight	(n=756)	570 (75.4)	1*
Overweight	(n=412)	294 (71.4)	0.81 (0.60-1.10)
Obese class I	(n=137)	90 (65.7)	0.66 (0.43-1.01)
Obese classes II-III	(n=64)	35 (54.7)	0.38 (0.21-0.69)
<i>Nagelkerke R²</i>		1.5%	

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Table 3: Multiple logistic regression: BMI classification as a predictor of midwife-led childbirth


BMI classes		Midwife-led childbirth (N=613)	
		N (%)	AOR (95% CI)
Normal weight	(n=756)	365 (48.3)	*
Overweight	(n=412)	182 (44.2)	0.63 (0.44-0.90)
Obese class I	(n=137)	47 (34.3)	0.49 (0.29-0.84)
Obese classes II-III	(n=64)	19 (29.7)	0.48 (0.21-1.12)
<i>Nagelkerke R²</i>			1.7% 

Table 4 Four most frequent reasons for referral during pregnancy and childbirth

	Normal	Overweight	Obese class I	Obese class II-III	Total
Reasons for referral pregnancy	N= 186 N (%)	N=118 N (%)	N=47 N (%)	N=29 N (%)	N= 380 (27.8) N (%)
Hypertensive disorders	30 (16.3)	31 (26.3)	19 (40.3)	9 (31.0)	89 (23.4)
Post-term gestation	35 (18.8)	22 (18.6)	7 (14.9)	2 (6.9)	66 (17.4)
Abnormal fetal positions	35 (18.8)	14 (11.9)	4 (8.5)	5 (17.2)	58 (15.3)
Preterm labor	23 (12.4)	15 (12.7)	4 (8.5)	3 (10.4)	45 (11.8)

68%

	Normal	Overweight	Obese class I	Obese class II-III	Total
Reasons for referral birth	N= 205 N (%)	N=112 N (%)	N=43 N (%)	N=16 N (%)	N= 376 (27.8) N (%)
Meconium stained fluid	59 (28.8)	31 (27.7)	11 (25.6)	4 (25)	105 (27.9)
Prolonged 1 st stage	26 (12.7)	17 (15.2)	10 (23.3)	3 (18.8)	56 (14.9)
PROM	29 (14.1)	19 (17)	3 (7)	3 (18.8)	54 (14.4)
Request pain relief	23 (11.2)	14 (12.5)	9 (20.9)	4 (25)	50 (13.3)

71%

Table 4 Four most frequent reasons for referral during pregnancy and childbirth

	Normal	Overweight	Obese class I	Obese class II-III	Total
Reasons for referral pregnancy	N= 186 N (%)	N=118 N (%)	N=47 N (%)	N=29 N (%)	N= 380 (27.8) N (%)
Hypertensieve aandoeningen	30 (16.3)	31 (26.3)	19 (40.3)	9 (31.0)	89 (23.4)
Reasons for referral birth	N= 205 N (%)	N=112 N (%)	N=43 N (%)	N=16 N (%)	N= 376 (27.8) N (%)
NVO	26 (12.7)	17 (15.2)	10 (23.3)	3 (18.8)	56 (14.9)
Behoeftte aan pijnstilling	23 (11.2)	14 (12.5)	9 (20.9)	4 (25)	50 (13.3)

Table 5. Urgent and non-urgent referrals during birth, in relation to BMI classification

Referrals during birth: yes/no	Normal weight N=570 (%)	Overweight N=294 (%)	Obese class I-III N=125 (%)	Total N=989	X ²	p- value
Not referred	365 (64.0)	182 (61.9)	66 (52.8)	613 (62.0)		
Referred:	205 (36.0)	112 (38.1)	59 (47.2)	376 (38.0)		
Non-urgent referrals	171 (30.0)	98 (33.3)	52 (41.6)	321 (32.5)	1.40	0.50
Urgent referrals	34 (6.0)	14 (4.8)	7 (5.6)	55 (5.6)		



M. Amelink (2008)

- Abnormal fetal positions and ruptured membranes
- (Suspected) fetal distress
- Blood loss/Placental problems
- Intrapartum fetal death
- Apgar < 7 at 5 min
- PPH > 1000 ml
- Resp. problems
- Congenital malf. needing immediate care
- Preterm labour in active phase

Table 6. Birth outcomes of women referred and not referred during birth, in relation to normal weight, overweight and obesity

Birth outcomes		Normal weight	Overweight	Obese class I-III	Total	X ²	p
		R (N=205) NR (N=365) N (%)	R (N=112) NR (N=182) N (%)	R (N=59) NR (N=66) N (%)	R (N=376) NR (N=613) N (%)		
Stillbirth	R	0	0	0	0	-	-
	NR	0	0	0	0	-	-
Intrapartum pain relief	R	53 (25.9)	36 (32.1)	24 (40.7)	113 (30.1)	5.12	.08
	NR	-	-	-	-	-	-
Instrumental delivery	R	50 (24.4)	28 (25.0)	15 (25.4)	93 (24.7)	.03	.98
	NR	-	-	-	-	-	-
Caesarean section	R	16 (7.8)	16 (14.3)	9 (15.3)	41 (10.9)	4.49	.11
	NR	-	-	-	-	-	-
Shoulder dystocia	R	5 (2.4)	5 (4.5)	1 (2.3)	11 (2.9)	†	.46
	NR	4 (1.1)	2 (1.1)	2 (3.0)	8 (1.3)	†	.21
Apgar score < 7 at 5 min	R	8 (3.9)	1 (0.9)	1 (1.7)	10 (2.7)	†	.52
	NR	0	0	0	0	-	-
Birth trauma	R	1 (0.5)	0	0	1 (0.3)	†	.84
	NR	0	0	0	0	-	-
SGA < 2.3 centile	R	1 (0.5)	0	0	1 (0.3)	†	.84
	NR	3 (0.8)	1 (0.5)	1 (1.5)	5 (0.8)	†	.44
LGA > 97.7 centile	R	6 (2.9)	6 (5.4)	3 (5.1)	15 (4.0)	†	.43
	NR	7 (1.9)	6 (3.3)	8 (12.1)	21 (3.4)	17.6	.000*
Cong. malformations	R	1 (0.5)	1 (0.9)	0	2 (0.5)	†	.71
	NR	6 (1.6)	6 (3.3)	4 (6.1)	16 (2.6)	†	.08
Neonat probl < 24 hrs	R	16 (7.8)	9 (8.0)	7 (11.9)	32 (8.5)	1.02	.60
	NR	6 (1.6)	2 (1.1)	0	8 (1.3)	†	.40

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Table 6. Birth outcomes of women referred and not referred during birth, in relation to normal weight, overweight and obesity

Birth outcomes		Normal weight	Overweight	Obese class I-III	Total	X ²	p
		R (N=205) NR (N=365) N (%)	R (N=112) NR (N=182) N (%)	R (N=59) NR (N=66) N (%)	R (N=376) NR (N=613) N (%)	R NR	
LGA > p 97.7	R	6 (2.9)	6 (5.4)	3 (5.1)	15 (4.0)	†	.43
	NR	7 (1.9)	6 (3.3)	8 (12.1)	21 (3.4)	17.6	.000*

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Resultaten

- **6 IUVD:**
 - **1 eerder verwezen ivm hypertensie**
 - **3 gediagnosticeerd in eerste lijn**
 - **2 immature partus met overlijden direct pp**

Geen obese vrouw
- **9 schouderdystocieën in midwife-led care:**
 - **8 in midwife-led care:**
 - **4 x normale BMI, 3x baby p10-90, 1x >p90**
 - **2 x overgewicht, 1x baby p 10-90, 1x>97.7**
 - **1 x obese class I, baby>97.7**
 - **1 x obese class II-III, baby >90**
 - **1 met spoed verwezen: normale BMI, baby LGA>97.7, Apgar <7 at 5 min.**

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Discussie

- **Kaukasische , regionale populatie**
- **Actualiteit data**
- **Lage prevalentie van aantal uitkomstvariabelen**

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Aanbevelingen

- **Preventie obesitas:**
 - **Preconceptioneel**
 - **Voorkom verhoogde BMI in volgende zwangerschap**
 - **door aandacht gewichtstoename huidige zwangerschap**
 - **gewichtsvermindering pp**
- **Verloskundig beleid:**
 - **Nulliparae ≠ multiparae**
 - **Zwangerschap ≠ baring**
 - **Aandacht voor preventie LGA**
 - **Risico-selectie lijkt ook in relatie tot BMI te werken**
- **Verder onderzoek**

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Bedankt voor uw aandacht!
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