Fedmeoperasjon og arbeidslivsdeltaking

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Agenda

- Kva er årsakene og konsekvensane av redusert arbeidslivdeltaking?
- Korleis endrar arbeidslivdeltaking seg etter fedmekirurgi?
  - Kva seier systematiske oversiktar?
  - Kva seier norske studiar?
- Kva er dei viktigaste kunnskapshola?
- Kva kan vi gjere for å bidra til auka arbeidslivdeltaking *no*?

Definisjonar

- Arbeidslivdeltaking
  - Å ha ein jobb (stillingsstorleik)
  - I kva grad ein jobbar i den stillingsstorleiken ein er tilsett i (arbeidstimar og arbeidsevne)

Kva er årsakene og konsekvensane av redusert arbeidslivdeltaking?

- Årsaker
  - Helseutfordringar
  - Diskriminering
  - Hol i CV
- Konsekvensar
  - Redusert livskvalitet
  - Dårlegare råd
  - Tap av arbeidsressurs for samfunnet

Neovius K et al.Obes Rev. Disability pension, employment and obesity status: a systematic review. 2008 Nov;9(6):572-81. doi: 10.1111/j.1467-789X.2008.00502.x.
Lund RS et al.Employment is associated with the health-related quality of life of morbidly obese persons.Obes Surg. 2011 Nov;21(11):1704-9. doi: 10.1007/s11695-010-0289-6.
Goettler A et al. Productivity loss due to overweight and obesity: a systematic review of indirect costs.BMJ Open. 2017 Oct 5;7(10):e014632. doi: 10.1136/bmjopen-2016-014632.

Tidsskriftet
DEN NORSKE LEGEFORENING

Helseøkonomi – kort innføring i nytte-kostnads-analyser

Erik Nord *Om forfatteren*

I helseøkonomisk systemanalyse evalueres ulike sider ved helsevesenets organisering, mens i nytte-kostnads-analyse evalueres konkrete programmer, teknologier og prosedyrer. Det redegjøres kort for de viktigste former for nytte-kostnads-analyse. Helsepersonell bør i mange tilfeller selv kunne gjennomføre slike analyser, men noen fallgruver er det viktig å merke seg.

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Utgave 28, 20. november 2002

Tidsskr Nor Legeforen 2002; 122: 2719-22

Ein svært enkel modell som ein ha i mente i høve temaet……..

- Ein noko overforenkla modell: Når ein person ikkje deltek i arbeidslivet tilsvararar dette i snitt = 532.000 NOK i produksjonstap per år
  - Basert på snittløn i Norge = 532.000 NOK

- Den reelle produksjonstapet per år er truleg om lag 50% av dette
  - 266.000 NOK

Korleis endrar arbeidslivdeltaking seg etter fedmekirurgi?

Kva seier systematiske oversiktar?

OBES SURG (2017) 27:774–781
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ORIGINAL CONTRIBUTIONS

Systematic Review and Meta-Analysis of Occupational Outcomes after Bariatric Surgery

Alistair J. Sharples[1] · **Chandra V. N. Cheruvu**[1]

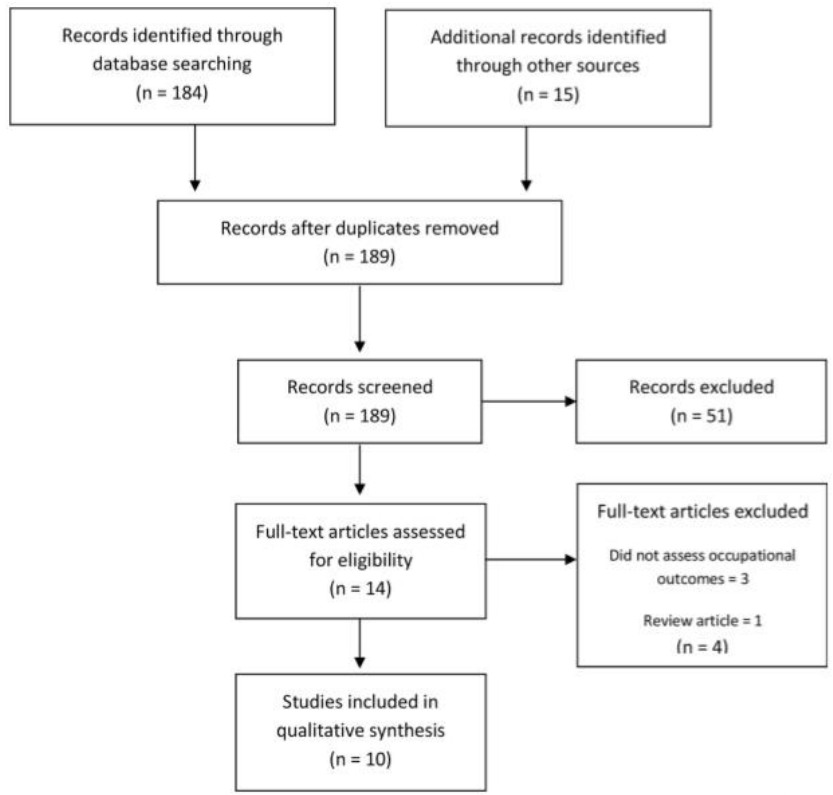
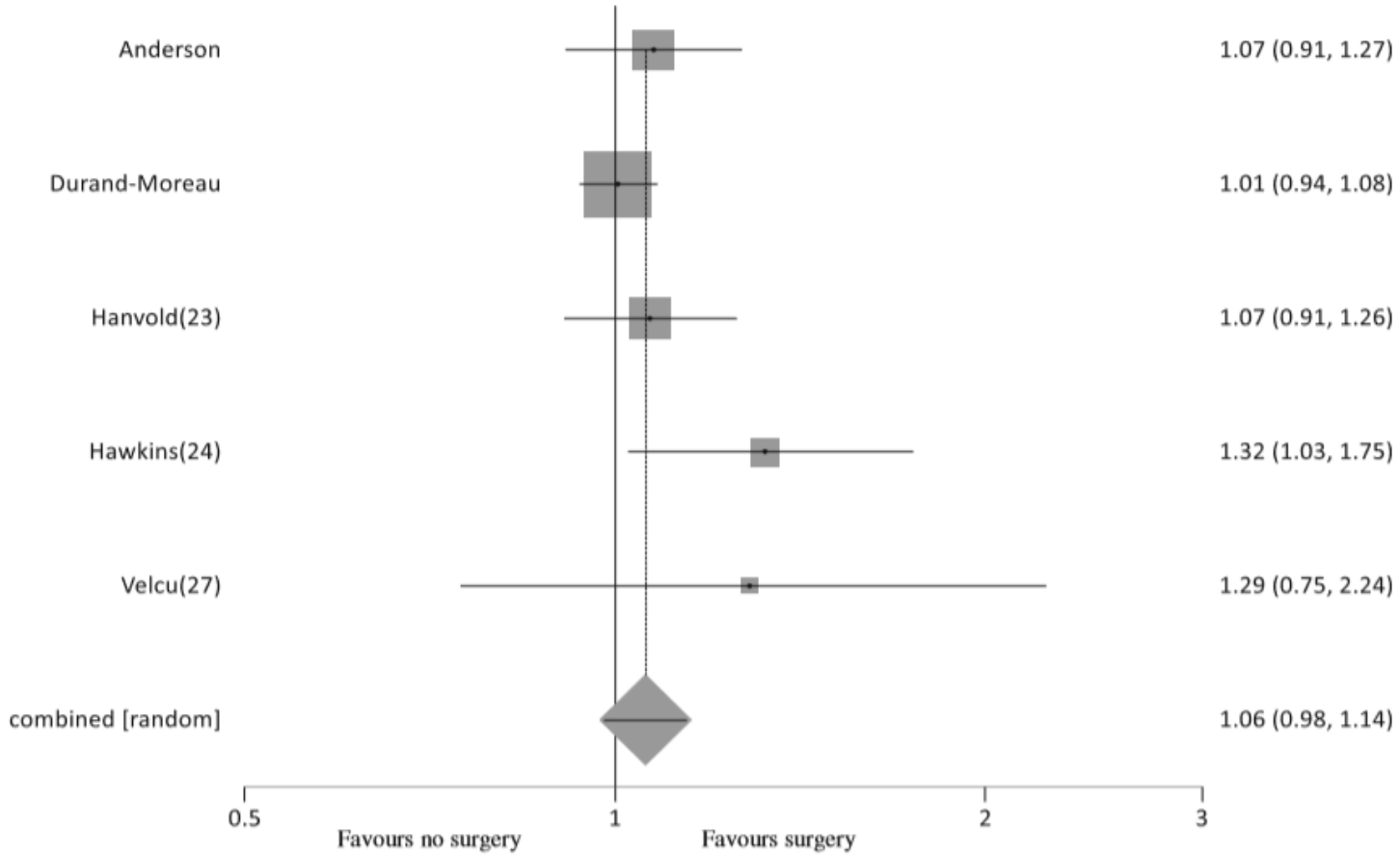


Fig. 1 PRISMA flow diagram for systematic review of clinical prediction rules for intra-abdominal injury in blunt trauma [34]

Table 2 Occupational outcomes

	Employment rate (%)			Proportion of unemployed patients in employment after surgery (%)	Mean sick days taken annually		
	Preoperative	Postoperative	*p* value		Preoperative	Postoperative	*p* value
Anderson [32]	54.0	58.0	0.34	30.0	56	28	<0.01
Durand-Moreau [30]	64.4	64.7	0.94	24.4			
Hanvold [37]	62.3	66.7	0.19				
Hawkins [31]	57.6	76.3	<0.05				
Ewing [29]	82.0				33	1	
Mathus-Vliegen [38]	69.4				12.5	6.3	<0.05
Sockalingam [39]	100						
Turchiano [40]				23.7			
Wagner [41]				36.8			
Velcu [33]	34.1	43.9	0.38	14.8			

Fig. 2 Meta-analysis of studies looking at the proportion of patients employed preoperatively and postoperatively



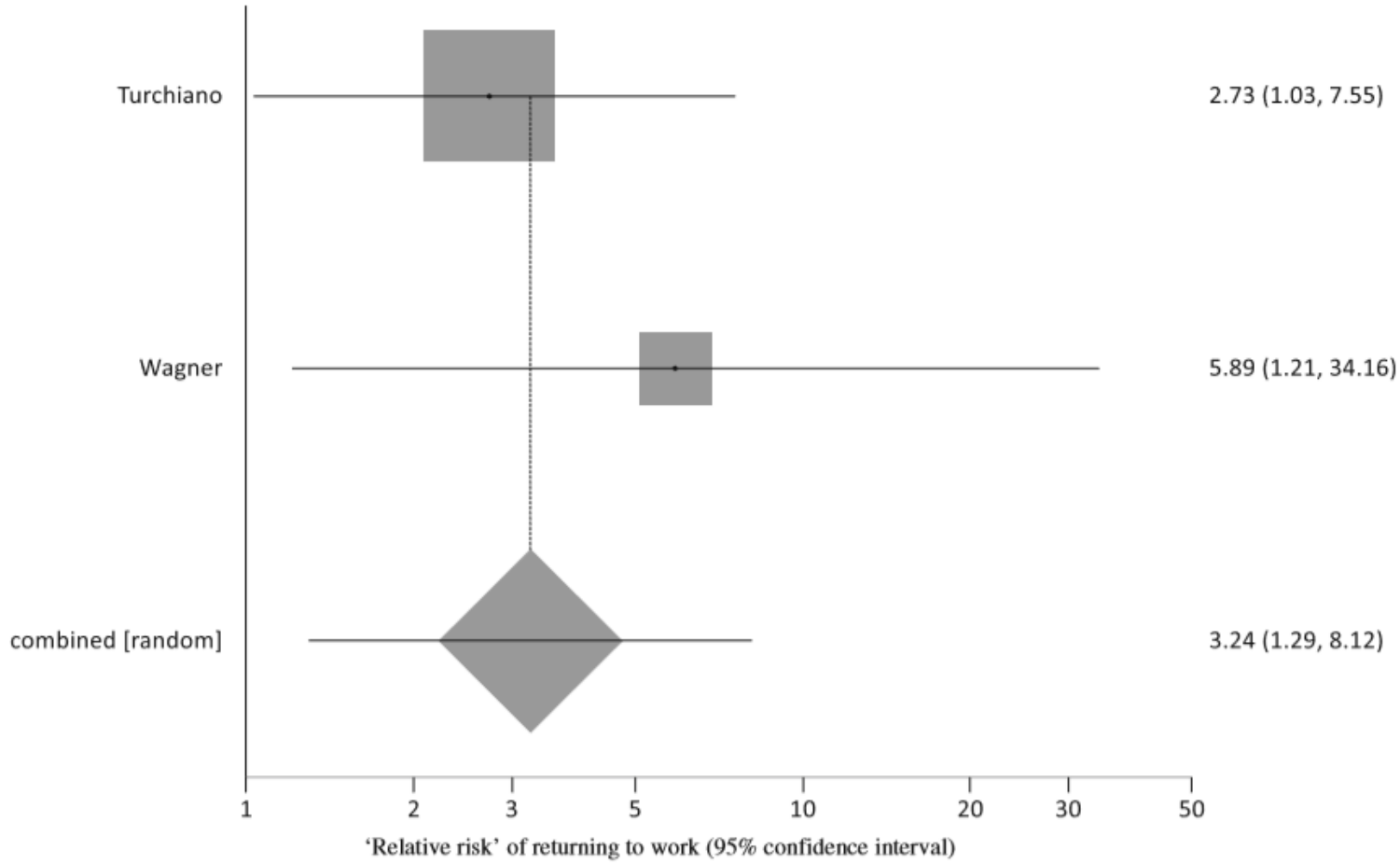


Fig. 3 Meta-analysis of studies comparing the return to work of unemployed, obese patients after surgery compared with controls

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Conclusions There is limited evidence in the literature regarding occupational outcomes following bariatric surgery, and further studies are required before firm conclusions can be drawn. However, the existing evidence does suggest that bariatric surgery has a generally positive impact on occupational outcomes. This suggests that surgery may have wider economic, social and psychological benefits above and beyond its immediate health benefits.

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Research Letter

FREE

October 18, 2016

Longitudinal Evaluation of Work Status and Productivity After Bariatric Surgery

Rafael Alfonso-Cristancho, MD, PhD, MSc[1]; Wendy C. King, PhD[2]; James E. Mitchell, MD[3]; et al

» Author Affiliations | Article Information

JAMA. 2016;316(15):1595-1597. doi:10.1001/jama.2016.12040

USA

N = 1773

Helse Førde

Table 1. Employment Status and Work Productivity Before and After Bariatric Surgery Among Adults With Severe Obesity

	Model-Based Estimates, % (95% CI)[a]					Adjusted *P* Value for Pairwise Comparisons[b]			
	Baseline	Year 1	Year 2	Year 3	Overall *P* Value	Baseline vs Year 1	Baseline vs Year 2	Baseline vs Year 3	Year 1 vs Year 3
Employment Status[c]									
Employed	74.8 (72.8-76.9)	74.0 (71.8-76.2)	74.9 (72.6-77.2)	73.0 (70.6-75.5)	.23				
Unemployed	3.7 (2.9-4.5)	4.2 (3.3-5.1)	4.9 (3.8-5.9)	5.6 (4.4-6.8)		.78	.17	.02	.12
Disabled	14.0 (12.5-15.6)	13.1 (11.6-14.7)	13.4 (11.8-15.0)	14.1 (12.4-15.8)	.17				
Work Productivity[d]									
Absenteeism (any missed work due to health)	15.2 (13.0-17.4)	10.4 (8.4-12.4)	11.6 (9.4-13.8)	13.8 (11.4-16.1)		.003	.05	.74	.07
Presenteeism (any impairment while working due to health)	62.8 (59.7-65.9)	31.9 (28.8-35.1)	35.6 (32.2-39.0)	41.0 (37.5-44.6)		<.001	<.001	<.001	<.001
Percentage reduction in productive work due to health problems[e]						<.001	<.001	<.001	<.001
0	37.4 (37.2-37.7)	68.2 (68-68.5)	64.9 (64.6-65.1)	59.5 (59.3-59.8)					
10	18.8 (18.5-19.1)	14.2 (13.8-14.6)	15.1 (14.7-15.5)	13.4 (13.0-13.8)					
20	14.2 (13.8-14.6)	8.5 (8.2-8.9)	7.1 (6.7-7.4)	12.0 (11.5-12.4)					
30	11.8 (11.4-12.2)	5.0 (4.6-5.4)	4.2 (3.8-4.6)	5.3 (4.9-5.7)					
40	6.2 (5.8-6.6)	2.0 (1.6-2.4)	2.3 (1.9-2.7)	3.9 (3.4-4.3)					
50	4.9 (4.5-5.4)	1.2 (0.9-1.6)	2.3 (1.8-2.8)	2.4 (1.9-2.8)					
>50	9.0 (8.6-9.4)	2.4 (2.0-2.7)	6.5 (6.0-7.0)	5.3 (4.9-5.8)					

[a] Poisson mixed models with robust error variance were used for binary
retention among participants with baseline data was 75% (1522/2019), 67%

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https://doi.org/10.1007/s11695-017-2963-4

ORIGINAL CONTRIBUTIONS

Occupational Outcomes of Obesity Surgery—Do the Employed Return to Work, and Do the Unemployed Find Work?

Michael J. Courtney[1,2] · K. Mahawar[1] · P. Burnell[1] · N. Jennings[1] · S. Balupuri[1] · N. Schroeder[1] · P. Small[1] · W. Carr[1]

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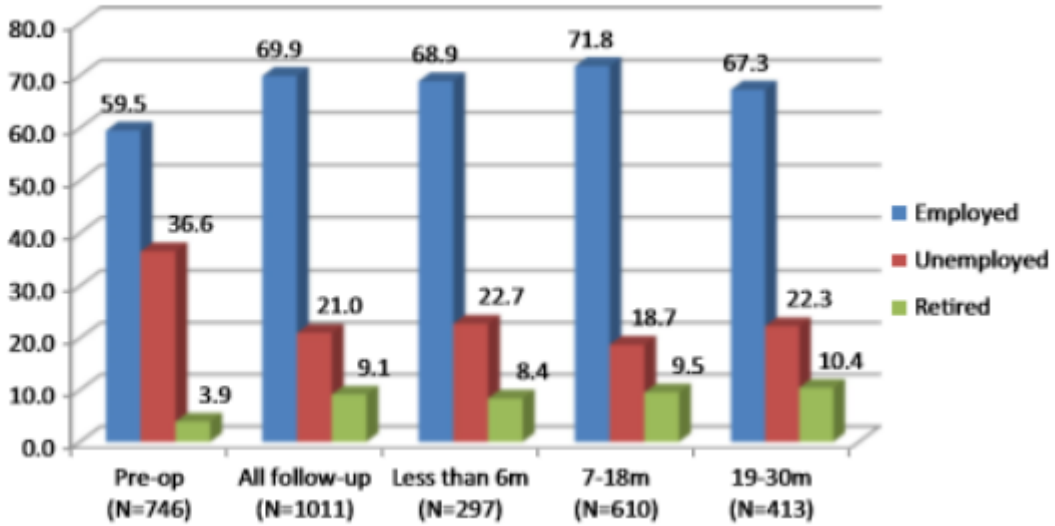
Fig. 3 Percentage of employment status at each duration of follow-up



P <0,05

UK

N = 1011

Korleis endrar arbeidslivdeltaking seg etter fedmekirurgi?

Kva seier norske studiar?

Employment status and sick-leave following obesity surgery: a five-year prospective cohort study

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ABSTRACT

Background. Severe obesity is a risk factor for lower participation in paid work, but whether employment increases and sick leave decreases after obesity surgery is not well documented.

Methods. We assessed 224 Norwegian patients with severe obesity (mean age: 40; mean BMI: 49; 61% female) regarding employment status (working versus not working) and the number of days of sick leave during the preceding 12 months, before and five years after obesity surgery (75% follow-up rate). Logistic regression analysis was used to study preoperative predictors of employment status after surgery.

Results. There were no change in the employment rate over time (54% versus 58%), but the number of days of sick leave per year was significantly reduced, from a mean of 63 to a mean of 26, and from a median of 36 to a median of 4. Most of this change was attributable to patients with zero days of sick leave, which increased from 25% to 41%. Being female, older, having low education level, receiving disability pension and not being employed before obesity surgery were important risk factors for not being employed after obesity surgery. The type of obesity surgery, BMI and marital status were not useful predictors.

Conclusions. Our findings suggest that undergoing obesity surgery is not associated with a higher rate of employment, although it may reduce the number of days of sick leave. Additional interventions are likely needed to influence the employment status of these patients. The significant preoperative predictors of not being employed in this study provide suggestions for further research.

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Nora Nock

Additional Information and Declarations can be found on page 9

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Subjects Epidemiology, Gastroenterology and Hepatology, Nursing, Surgery and Surgical Specialties
Keywords Work, Employment, Sick-leave, Predictors, Surgery, Obesity, Norway

INTRODUCTION

Severe obesity, defined as having a body mass index (BMI) $\geq$ 40.0 or having obesity-related diseases and a BMI $\geq$ 35, has been associated with lower employment rates, largely because of the detrimental effect of obesity on health (*Andersen et al., 2010*; *Gripeteg et al., 2012*;

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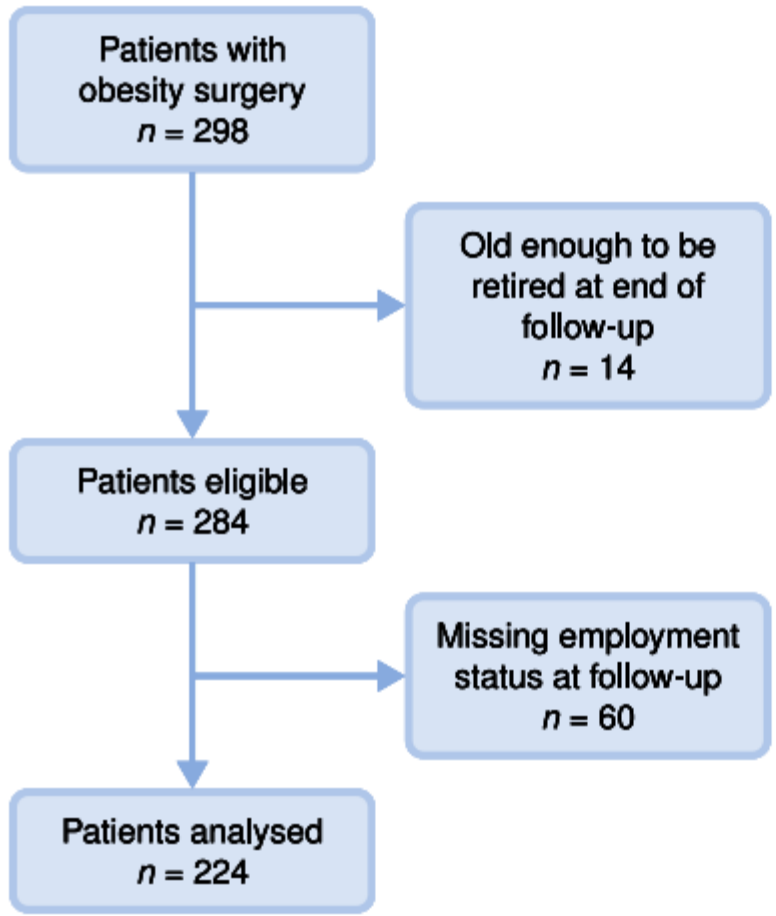

Figure 1 Study population flow chart.

Helse Førde

Table 1 **Patient characteristics at baseline ($n = 224$).**

	Mean/count	SD/(%)
Age	40	9
Sex		
Female	136	(61%)
Male	88	(39%)
Married/cohabitation	130	(58%)
Education ($n = 222$)		
College/university	56	(25%)
High school	107	(48%)
Primary school	59	(27%)
BMI	49	8
Disability pension ($n = 216$)	70	(32%)
Surgery method		
Biliopancreatric diversion with duodenal switch	154	(69%)
Sleeve gastrectomy	51	(23%)
Gastric bypass	5	(2%)
Revisions	14	(6%)

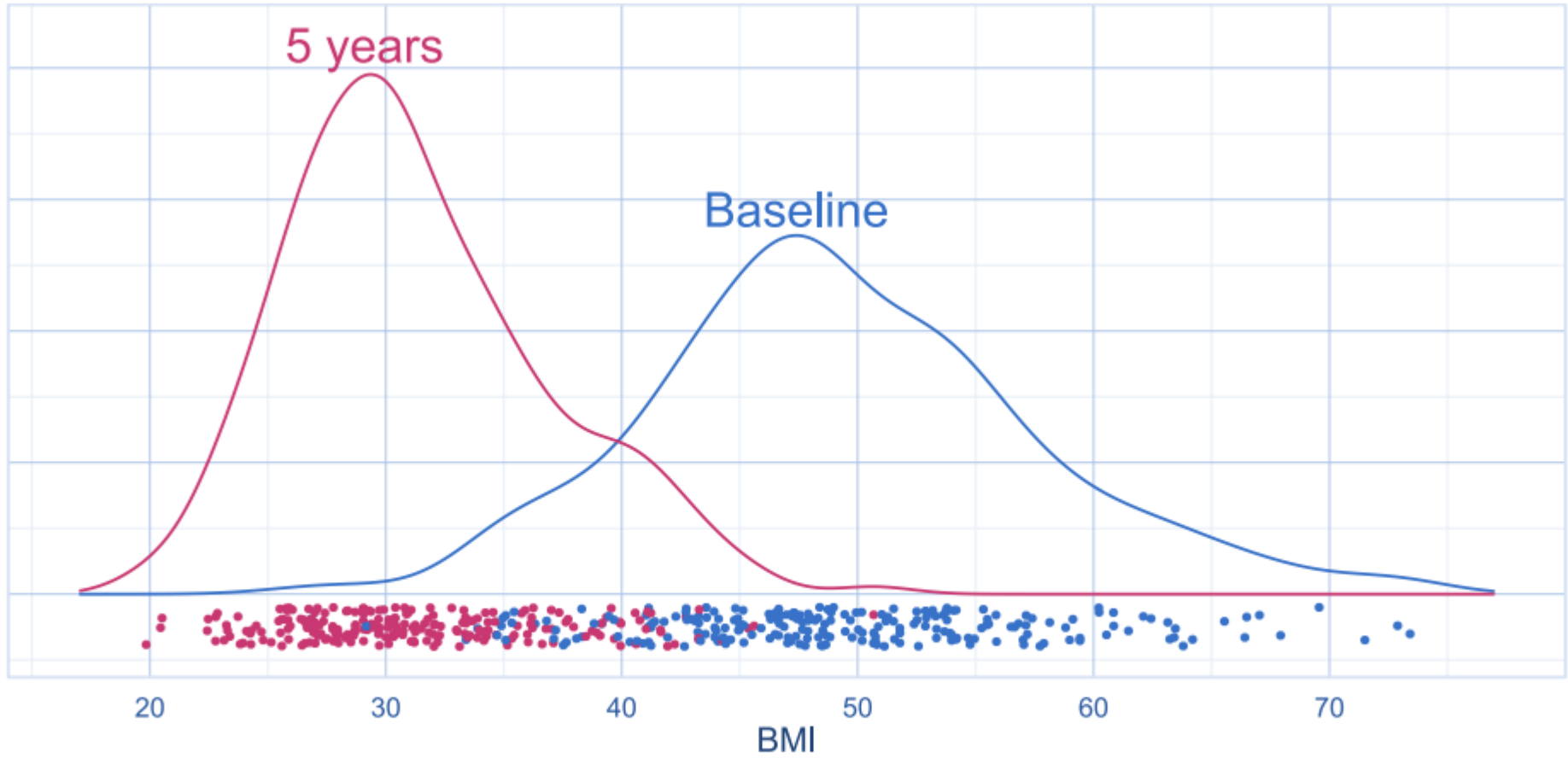

Figure 2 **Distribution of BMI before and five years after obesity surgery (density plots with jittered strip chart) ($n = 224$ at baseline, $n = 219$ at follow-up).**

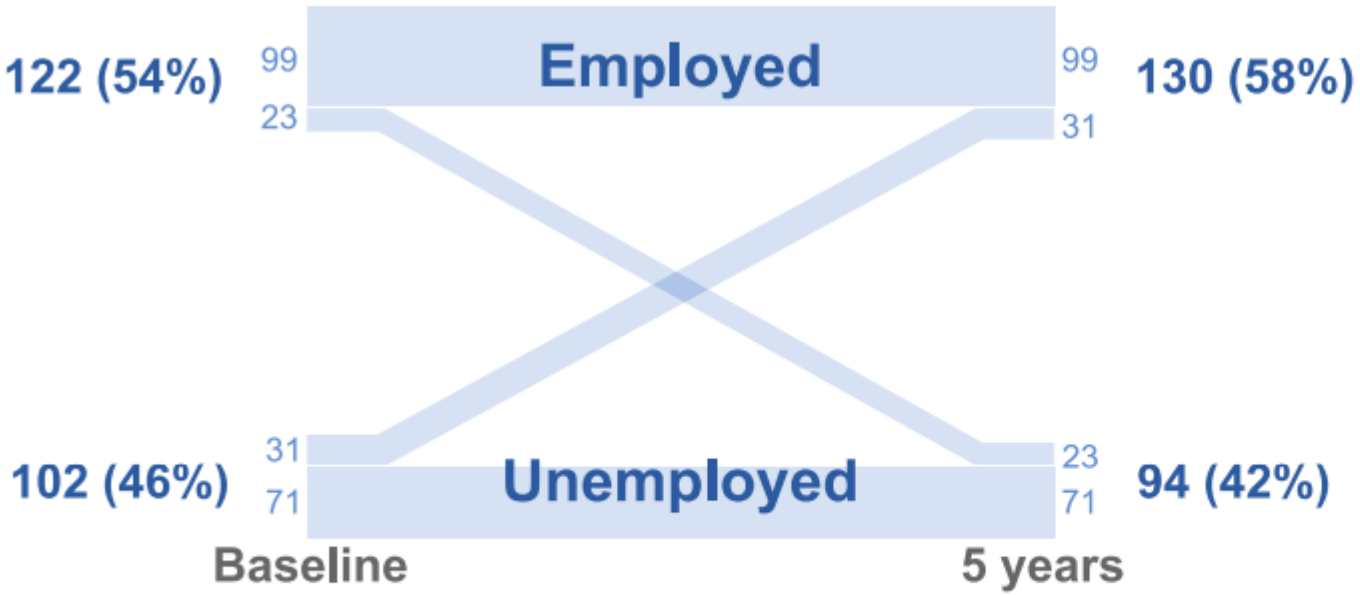

Figure 3 Parallel set plot showing the number and percentage of patients employed before and five years after obesity surgery. The widths of the lines are proportional to the number of patients.

Arbeidslivdeltaking i Norge (justert for alder og kjønn) = 83%

Table 2 **Employment status and days per years with sick leave before and five years after obesity surgery ($n = 224$).**

	Before operation			5 years after operation			*P*-value
	Mean/count	SD/(%)	Quartiles	Mean/count	SD/(%)	Quartiles	
Employed (yes/no), count	122	(54%)	–	130	(58%)	–	0.34
Full-time equivalent, mean[a]	0.46	0.46		0.49	0.46		0.54
Days with sick leave per year[b]							
Patients employed at both baseline and follow-up (paired *t*-test, $n = 75$), mean	56	61	2; 40; 86.5	28	46	0; 5; 39	0.002
Patients employed at at least one time point ($n = 108$ at baseline, $n = 113$ at follow-up), mean	63	73	1.5; 36; 108	26	45	0; 4; 35	–

Notes.

[a] The fraction of full-time employment, e.g., 0 = unemployed, 0.5 = working half time, 1 = working full time.

[b] There was missing data on number of days with sick leave for some patients who stated they *were* employed (14 patients at baseline and 17 patients at follow-up). One patient reported being employed but having 365 days of sick leave. This was truncated to 260 days, the maximum possible number of working days.

Table 3 **Logistic regression for the risk of not being employed five years after obesity surgery.**

	Unadjusted model			Adjusted model		
	OR[a]	95% CI	*P*-value	OR[a]	95% CI	*P*-value
(A) For all patients ($n = 211$)						
Age (years)[b]	1.04	1.01 to 1.07	0.01	1.05	1.01 to 1.10	0.02
Sex			<0.01			0.003
Female (ref.)	1	– to –	–	1	– to –	–
Male	0.34	0.18 to 0.61	<0.01	0.31	0.13 to 0.68	0.003
Married/cohabitation	0.94	0.54 to 1.64	0.83	0.83	0.38 to 1.79	0.63
Education			<0.001			<0.001
University/college (ref.)	1	– to –	–	1	– to –	–
High school	1.64	0.79 to 3.55	0.20	1.13	0.45 to 2.90	0.80
Primary school	8.40	3.65 to 20.56	<0.001	6.98	2.41 to 21.73	<0.001
BMI (kg/m^2)[b]	1.01	0.97 to 1.04	0.74	1.03	0.98 to 1.08	0.30
Disability pension before surgery	10.56	5.39 to 21.84	<0.001	4.05	1.68 to 10.07	0.002
Not working before surgery	9.84	5.29 to 18.96	<0.001	6.40	2.85 to 15.05	<0.001
Treatment[c]			1.00			0.25
Biliopancreatric diversion with duodenal switch	1	– to –	–	1	– to –	–
Sleeve gastrectomy	0.98	0.51 to 1.89	0.96	1.59	0.63 to 4.11	0.33
Revisions	0.98	0.31 to 2.97	0.98	0.38	0.06 to 1.94	0.26

OBES SURG (2015) 25:1672–1679
DOI 10.1007/s11695-015-1583-0

ORIGINAL CONTRIBUTIONS

Great Health Benefits But No Change in Employment or Psychopharmaceutical Drug Use 2 Years After Roux-en-Y Gastric Bypass

Susanna E. Hanvold · Elin B. Løken · Sofie F. Paus · Eva Rustad de Brisis · Kirsti Bjerkan · Helga Refsum · Anne-Marie Aas

Published online: 2 February 2015

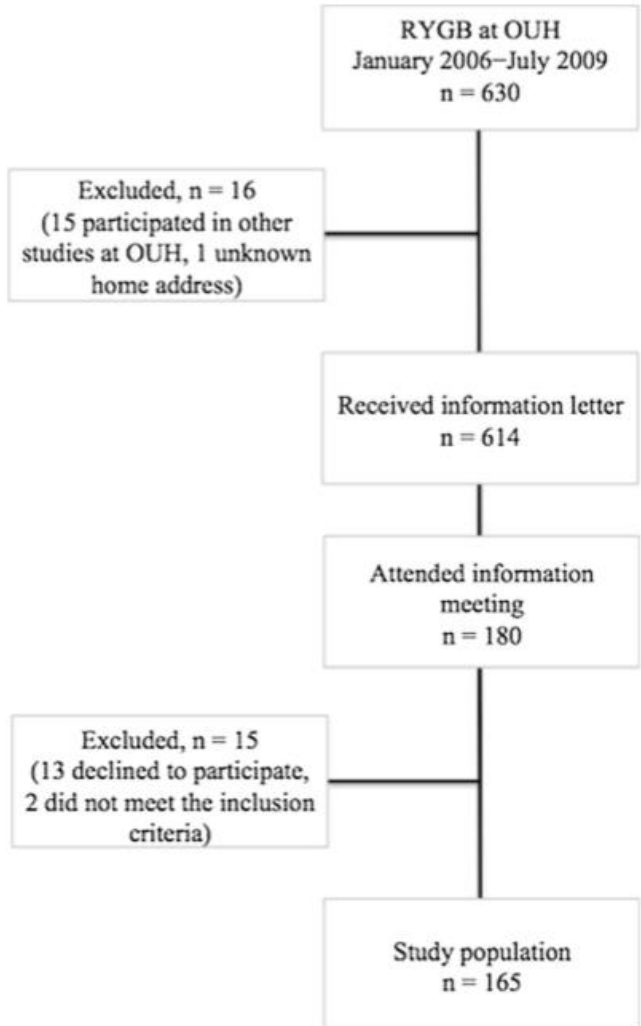

Fig. 1 Flowchart for inclusion to the study. *RYGB* Roux-en-Y gastric bypass, *OUH* Oslo University Hospital

Table 1 Characteristics before and 2 years after Roux-en-Y gastric bypass, n=165

	Before	After	P value[a]
Women [n (%)]	123 (74.5 %)	123 (74.5 %)	
Age (years)	44.0±8.6	45.7±8.6	
Smokers [n (%)]	42 (25.5)	34 (20.6)	0.115
BMI (kg/m^2)	44.3±5.1[b]	30.9±4.9	<0.001
Systolic blood pressure (mmHg)[c]	144±16	124±16	<0.001
Diastolic blood pressure (mmHg)[c]	90±11	79±11	<0.001
Hypertension [n (%)][d,e]	132 (80.5)	47 (28.7)	<0.001
Antihypertensive drugs [n (%)]	61 (37.0)	29 (17.6)	<0.001
Systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg [n (%)][c]	118 (72.4)	30 (18.4)	<0.001
HbA_{1c} (%)[c,f]	5.5 (5.3–6.1)	5.2 (5.0–5.4)	<0.001[g]
Type 2 diabetes mellitus [n (%)][h,i]	51 (31.5)	16 (9.9)	<0.001
HbA_{1c} ≥6.0 % [n (%)][c]	44 (27.2)	15 (9.3)	<0.001
Antidiabetic drugs, including insulin [n (%)]	38 (23.2)	8 (4.9)	<0.001
Oral antidiabetic drugs [n (%)]	35 (21.2)	4 (2.4)	<0.001
Insulin [n (%)]	12 (7.3)	5 (3.0)	0.016
Statins [n (%)]	32 (19.4)	10 (6.1)	<0.001
Metabolic syndrome [n (%)]	127 (77.0)	43 (26.1)	<0.001
Psychopharmaceutical drugs [n (%)]	34 (20.6)	31 (18.8)	0.549
Antidepressive drugs [n (%)]	30 (18.2)	24 (14.5)	0.109
Unemployed [n (%)][j]	61 (37.7)	54 (33.3)	0.189

OBES SURG
DOI 10.1007/s11695-016-2499-z

ORIGINAL CONTRIBUTIONS

Chronic Abdominal Pain and Symptoms 5 Years After Gastric Bypass for Morbid Obesity

Ingvild K. Høgestøl[1,2] · Monica Chahal-Kummen[1] · Inger Eribe[1] · Cathrine Brunborg[3] · Audun Stubhaug[2,4] · Stephen Hewitt[1,2] · Jon Kristinsson[1] · Tom Mala[1,5]

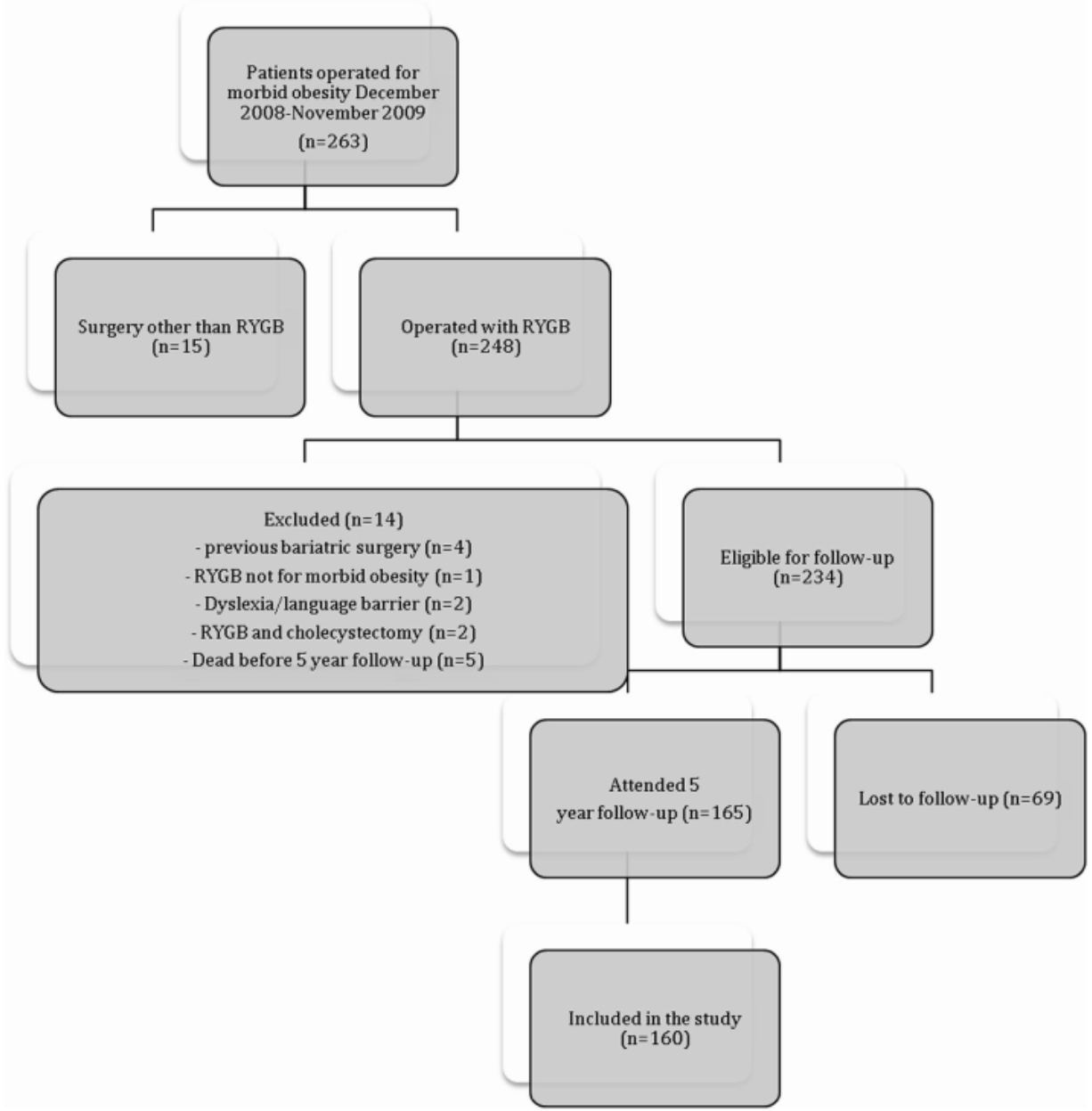

Fig. 1 Flow chart of the inclusion of patients operated with Roux-en-Y gastric bypass (RYGB) during a 12-month period and attending a 5-year follow-up

Table 1 Patient characteristics at baseline and 5 years after Roux-en-Y gastric bypass

	Baseline[a]	5 years	*p* value
Gender, female	94 (59%)	na	na
Norwegian ethnicity	145 (91%)	na	na
Previous abdominal surgery	67 (42%)	na	na
Age, years	42.5 (8.7)	47.9 (8.8)	na
Body mass index, kg/m^2	45.2 (5.5)	35.8 (6.6)	<0.001
Weight, kg	135.5 (23.5)	103.6 (24.2)	<0.001
Living with partner	97 (61%)	114 (71%)	0.005
Working full-time	94 (58%)	97 (61%)	0.736
Diabetes	44 (28%)	20 (13%)	<0.001
Hypertension	64 (40%)	31 (19%)	<0.001
Reflux	57 (36%)	11 (7%)	<0.001
Hypothyroidism	8 (5%)	10 (6%)	0.625
Depression	52 (34%)	37 (23%)	0.023
Joint pain	113 (71%)	91 (57%)	0.001

The results are given as number (proportion in %) for categorical variables, mean (SD) for continuous variables

na non-applicable

[a] At baseline, some variables have missing values: reflux (2 patients), depression (5 patients), and joint pain (1 patient)

Kva er dei viktigaste kunnskapshola?

- Sikrare tal knytt til arbeidslivdeltaking (Kohortstudiar)
- Prediktorar for postoperativ arbeidslivdeltaking (Regresjonsanalysar)
- Personar som er fedmeoperte sine synspunkt og erfaringar knytt til arbeidslivdeltaking (Kvalitative studiar)
- Kva intervensjonar kan vere nyttige? (Kvasieksperimentelle/RCT)
- *Reell brukarmedverknad i utvikling av design og oppfølging av slike studiar kan vere ekstremt nyttig*

Kva kan vi gjere for å bidra til auka arbeidslivdeltaking *no*?

Ta det opp med pasientane på kontrollar, og gi oppmuntring og støtte

Oppsummering

- Det er usikkert om fedmekirurgi fører til høgare arbeidslivdeltaking målt i tal personar (pre/post) som har ein betalt jobb
  - Ulike funn i studiar med og utan kontrollgruppe
  - Dersom effekten skulle vise seg å være positiv og reell, vil effektstorleiken truleg variere med ulike kontekstar
- Det er sannsynleg at fedmekirurgi kan redusere sjukefråvær og auke arbeidsevna (i alle fall på etter nokre år postoperativt), men dette er basert på avgrensa empirisk grunnlag
- Det er stort behov for meir kunnskap på feltet, og dette vil også kunne ha vesentleg relevans for andre pasientgrupper