E.1 Adherence for CPAP

E.1.1 Behavioural therapy + CPAP versus control + CPAP –severe OSAHS

Figure 2: CPAP Device Usage (hours/night) (higher is better)

Study or Subgroup	Behavioural+CPAP Mean	SD	Total	control+CPAP Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI
Aloia 2001	7.76	1.86	6	4.65	3.38	6	1.3%	3.11 [0.02, 6.20]
Aloia 2013	4.34	2.35	62	3.65	2.36	55	17.1%	0.69 [-0.17, 1.55]
Bakker 2016	4.4	2.9	41	3.3	2.7	42	8.6%	1.10 [-0.11, 2.31]
Dantas 2015	6.2	1.3	20	5.1	1.4	20	17.8%	1.10 [0.26, 1.94]
Diaferia 2017	5.1	2.3	22	3.6	1.8	27	9.0%	1.50 [0.32, 2.68]
Lai 2014	4.4	1.8	49	2.4	2.3	51	19.2%	2.00 [1.19, 2.81]
Olsen 2012	4.63	2.69	50	3.16	2.69	50	11.2%	1.47 [0.42, 2.52]
Sparrow 2010	2.4	2.5	110	1.48	2.5	112		Not estimable
Wang 2012	3.7	2.3	38	2.6	1.6	38	15.8%	1.10 [0.21, 1.99]
Total (95% CI)			**288**			**289**	**100.0%**	**1.31 [0.95, 1.66]**

Heterogeneity: Chi² = 6.89, df = 7 (P = 0.44); I² = 0%
Test for overall effect: Z = 7.24 (P < 0.00001)

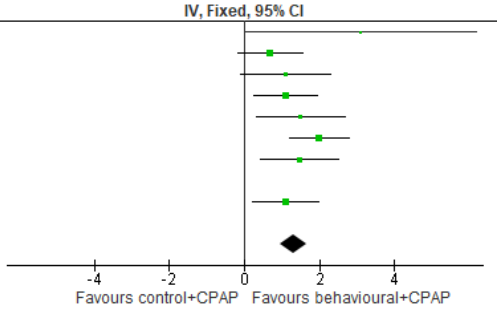


Figure 3: N deemed adherent (≥ four hours/night)

Study or Subgroup	behavioural+CPAP Events	Total	Control+CPAP Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Aloia 2001	5	6	4	6	3.9%	1.25 [0.64, 2.44]
Diaferia 2017	11	22	8	27	7.0%	1.69 [0.82, 3.45]
Lai 2014	20	49	10	51	9.5%	2.08 [1.09, 3.99]
Smith 2009	30	55	24	42	26.4%	0.95 [0.67, 1.36]
Sparrow 2010	46	104	38	111	35.7%	1.29 [0.92, 1.81]
Wang 2012	26	38	18	38	17.5%	1.44 [0.97, 2.15]
Total (95% CI)		**274**		**275**	**100.0%**	**1.33 [1.10, 1.61]**
Total events	138		102			

Heterogeneity: Chi² = 5.81, df = 5 (P = 0.32); I² = 14%
Test for overall effect: Z = 2.97 (P = 0.003)

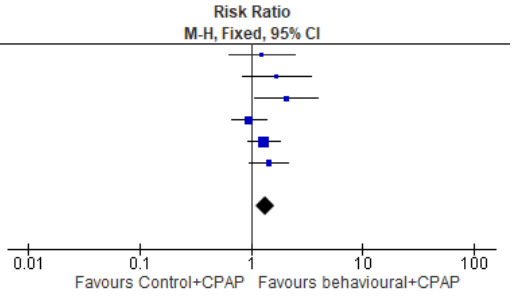


Figure 4: Withdrawal

Study or Subgroup	behavioural+CPAP Events	Total	Control+CPAP Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Aloia 2001	0	6	0	6		Not estimable
Aloia 2013	11	73	19	74	27.0%	0.59 [0.30, 1.15]
Bakker 2016	3	41	2	42	2.8%	1.54 [0.27, 8.73]
Dantas 2015	0	20	1	20	2.1%	0.33 [0.01, 7.72]
Lai 2014	1	49	1	51	1.4%	1.04 [0.07, 16.18]
Olsen 2012	5	53	7	53	10.0%	0.71 [0.24, 2.11]
Scala 2012	0	13	0	15		Not estimable
Smith 2009	11	55	13	42	21.1%	0.65 [0.32, 1.30]
Sparrow 2010	14	124	14	126	19.9%	1.02 [0.51, 2.04]
Wang 2012	5	38	11	38	15.7%	0.45 [0.17, 1.18]
Total (95% CI)		**472**		**467**	**100.0%**	**0.70 [0.51, 0.98]**
Total events	50		68			

Heterogeneity: Chi² = 3.28, df = 7 (P = 0.86); I² = 0%
Test for overall effect: Z = 2.07 (P = 0.04)

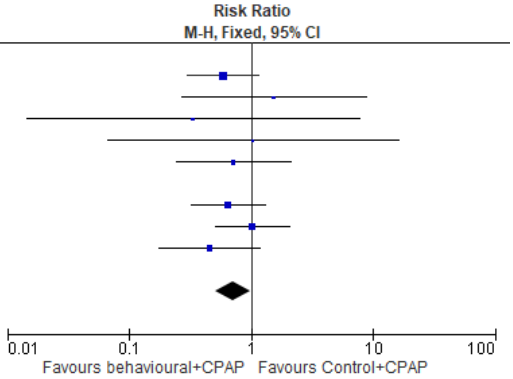


Figure 5: Epworth Sleepiness Scale (Endpoint scores) (0-24; higher is worse)

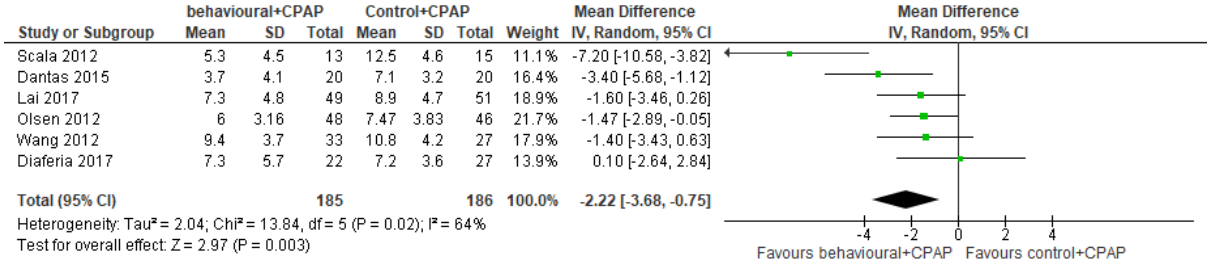


Figure 6: AHI on treatment – Endpoint (lower is better)

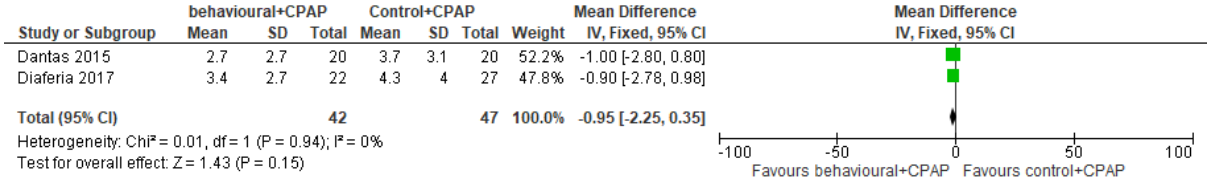
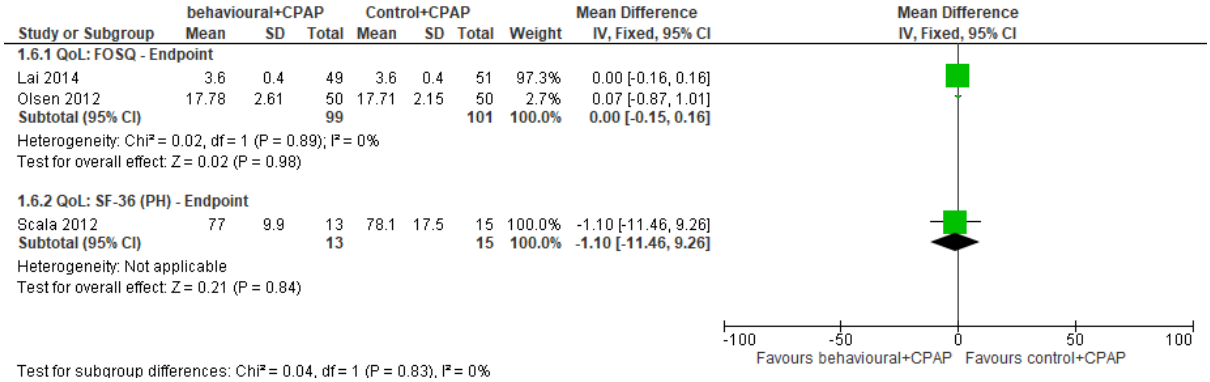


Figure 7: Quality of Life - Comparison of Values at Endpoint (FOSQ 5-20, higher is better) (SF- 36, 0-100, higher is better)



E.1.2 Educational interventions + CPAP versus usual care + CPAP- severe OSAHS

Figure 8: CPAP Device Usage (hours/night) (higher is better)

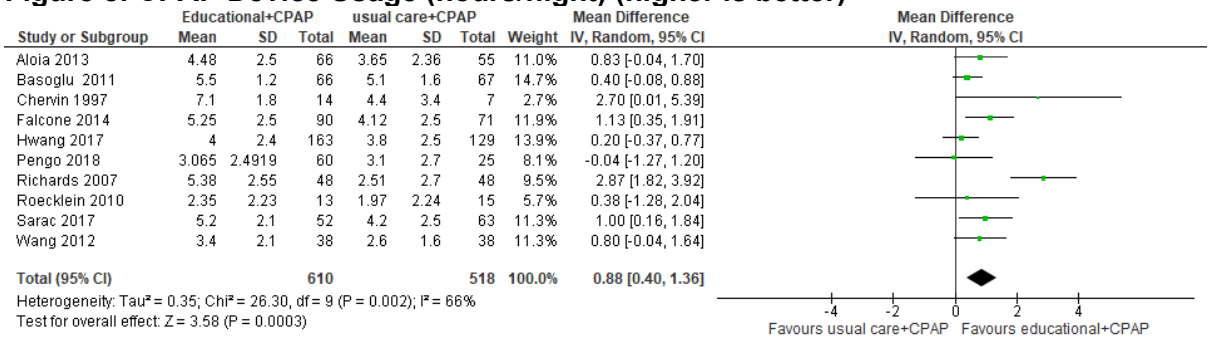


Figure 9: N deemed adherent (≥ four hours/night)

Study or Subgroup	Educational+CPAP Events	Total	usual care+CPAP Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Basoglu 2011	47	66	38	67	14.0%	1.26 [0.97, 1.63]
Falcone 2014	87	90	50	71	22.7%	1.37 [1.17, 1.60]
Hwang 2017	100	163	69	129	18.3%	1.15 [0.94, 1.40]
Richards 2007	37	48	15	48	6.4%	2.47 [1.58, 3.86]
Sarac 2017	45	52	43	63	18.5%	1.27 [1.04, 1.55]
Soares-Pires 2013	45	71	41	75	13.2%	1.16 [0.88, 1.52]
Wang 2012	23	38	18	38	7.0%	1.28 [0.84, 1.95]
Total (95% CI)		**528**		**491**	**100.0%**	**1.31 [1.15, 1.48]**
Total events	384		274			

Heterogeneity: Tau² = 0.01; Chi² = 10.66, df = 6 (P = 0.10); I² = 44%
Test for overall effect: Z = 4.18 (P < 0.0001)

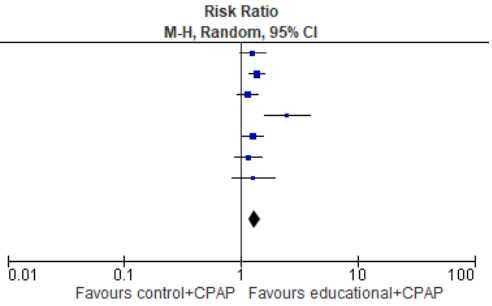


Figure 10: Withdrawals

Study or Subgroup	Educational+CPAP Events	Total	usual care+CPAP Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Aloia 2013	14	80	19	74	17.3%	0.68 [0.37, 1.26]
Basoglu 2011	0	66	0	67		Not estimable
Falcone 2014	13	103	32	103	18.3%	0.41 [0.23, 0.73]
Hwang 2017	51	375	53	354	27.9%	0.91 [0.64, 1.30]
Richards 2007	2	50	2	50	2.9%	1.00 [0.15, 6.82]
Roecklein 2010	1	14	1	16	1.5%	1.14 [0.08, 16.63]
Sarac 2017	0	52	0	63		Not estimable
Soares-Pires 2013	29	100	27	102	23.8%	1.10 [0.70, 1.71]
Wang 2012	4	38	11	38	8.2%	0.36 [0.13, 1.04]
Total (95% CI)		**878**		**867**	**100.0%**	**0.73 [0.52, 1.02]**
Total events	114		145			

Heterogeneity: Tau² = 0.07; Chi² = 10.12, df = 6 (P = 0.12); I² = 41%
Test for overall effect: Z = 1.84 (P = 0.07)

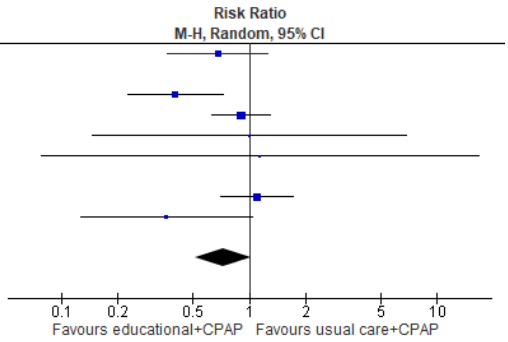
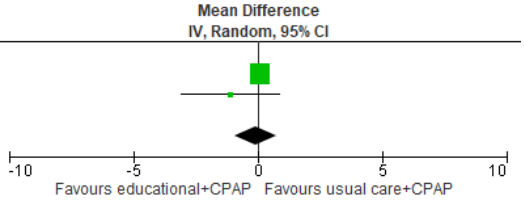


Figure 11: ESS – comparison of values at end point (0 to 24, higher is worse)

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI
Basoglu 2011	3.8	0	66	4.4	0	67		Not estimable
Falcone 2014	4.14	0.31	90	4.04	0.23	71	85.1%	0.10 [0.02, 0.18]
Wang 2012	9.7	3.5	34	10.8	4.2	27	14.9%	-1.10 [-3.07, 0.87]
Total (95% CI)			**190**			**165**	**100.0%**	**-0.08 [-0.92, 0.76]**

Heterogeneity: Tau² = 0.21; Chi² = 1.42, df = 1 (P = 0.23); I² = 29%
Test for overall effect: Z = 0.18 (P = 0.85)



E.1.3 Increased practical support and encouragement during follow-up + CPAP versus usual care + CPAP- severe OSAHS

Figure 12: CPAP Device Usage (hours/night) (higher is better)

Study or Subgroup	Increased support+CPAP Mean	SD	Total	usual care+CPAP Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI
Chervin 1997	5.7	2.3	12	4.4	3.4	7	1.6%	1.30 [-1.54, 4.14]
DeMolles 2004	4.4	3	15	2.9	2.4	15	3.1%	1.50 [-0.44, 3.44]
Fox 2012	3.18	2.45	28	1.75	1.97	26	6.2%	1.43 [0.25, 2.61]
Hoet 2017	5.7	1.6	20	4.2	1.9	17	6.4%	1.50 [0.36, 2.64]
Hoy 1999	5.4	1.8974	40	3.8	2.5298	40	7.5%	1.60 [0.62, 2.58]
Hwang 2017	4.4	2.2	125	3.8	2.5	129	11.0%	0.60 [0.02, 1.18]
Mendelson 2014	3.12	2.97	54	4.17	2.77	53	6.8%	-1.05 [-2.14, 0.04]
Munafo 2016	5.1	1.9	58	4.7	2.1	64	9.8%	0.40 [-0.31, 1.11]
Nilius 2019	4.4	2.5	37	2.1	2.2	38	6.9%	2.30 [1.23, 3.37]
Parthasarathy 2012	4.35	2.6	22	3.4	2.6	15	3.8%	0.95 [-0.76, 2.66]
Pepin 2019	5.28	2.23	157	4.75	2.5	149	11.5%	0.53 [-0.00, 1.06]
Stepnowsky 2007	4.1	1.8	20	2.8	2.2	20	5.8%	1.30 [0.05, 2.55]
Stepnowsky 2013	3.9	2.3	126	3.2	2.4	114	10.9%	0.70 [0.10, 1.30]
Turino 2017	5.1	2.1	52	4.9	2.2	48	8.6%	0.20 [-0.64, 1.04]
Total (95% CI)			**766**			**735**	**100.0%**	**0.83 [0.45, 1.22]**

Heterogeneity: Tau² = 0.26; Chi² = 29.44, df = 13 (P = 0.006); I² = 56%
Test for overall effect: Z = 4.23 (P < 0.0001)

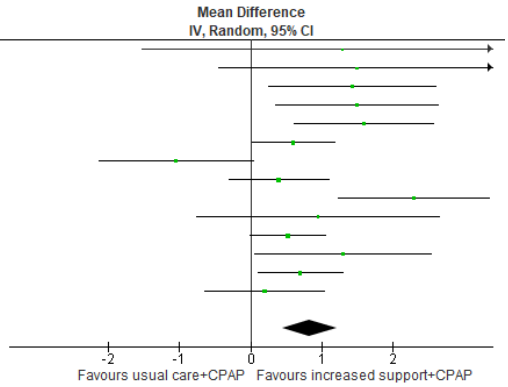


Figure 13: Days PAP used >4 h at 12 months

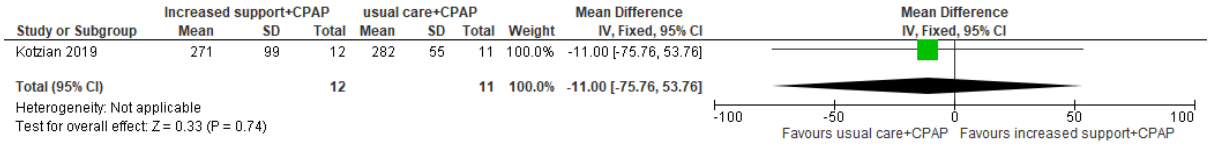


Figure 14: Days PAP used >4 h at 3 months

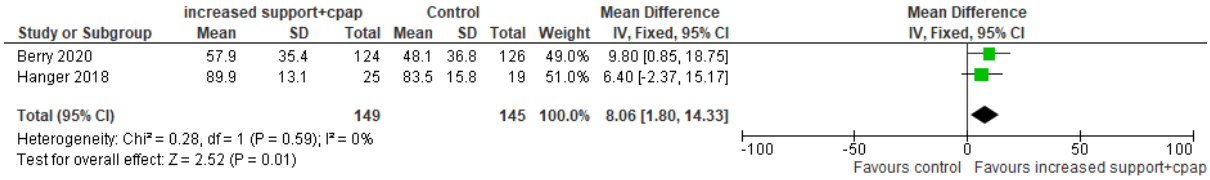


Figure 15: Mean adherence all days (min per day)

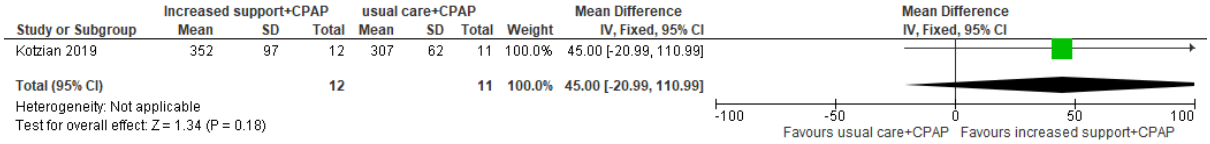


Figure 16: CPAP use min/night

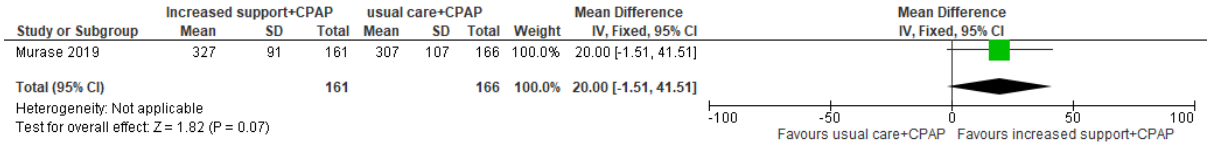


Figure 17: N deemed adherent (≥ four hours/night)

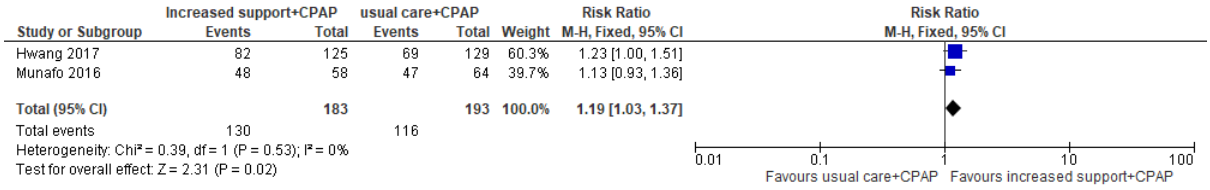


Figure 18: Withdrawals

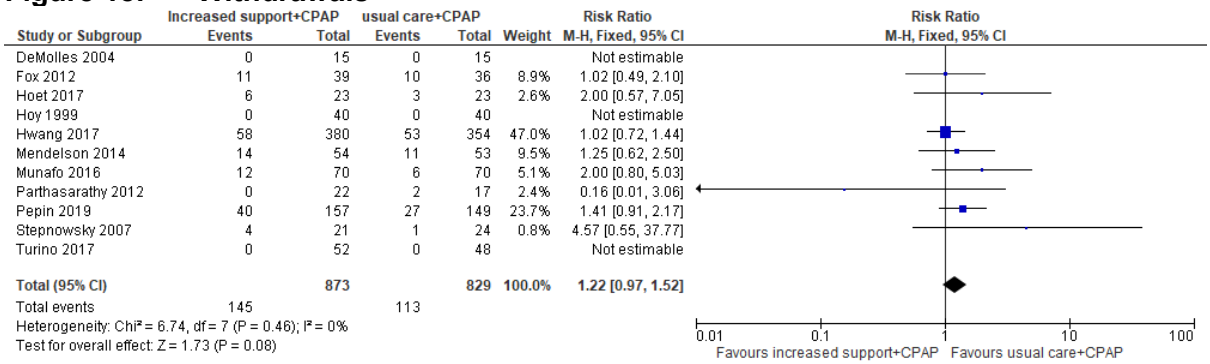


Figure 19: ESS score – end point and change from baseline (0-24; higher is worse)

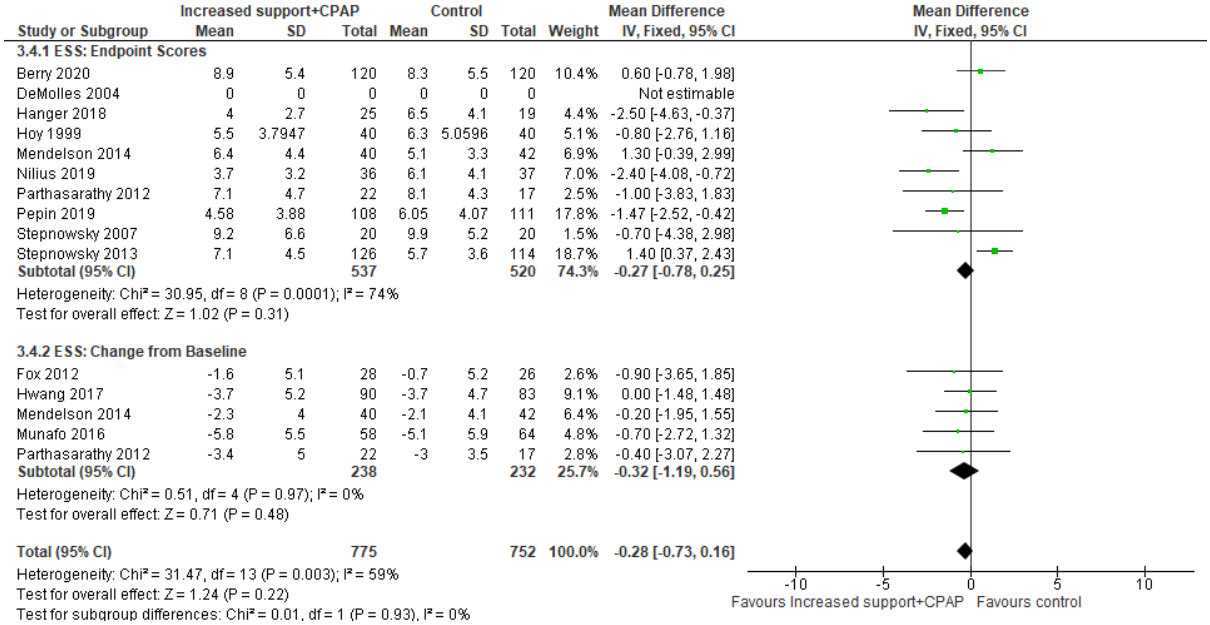


Figure 20: Quality of Life: Comparison of Values at Endpoint (FOSQ 5-20; higher is better, SF-36 0-100; higher is better)

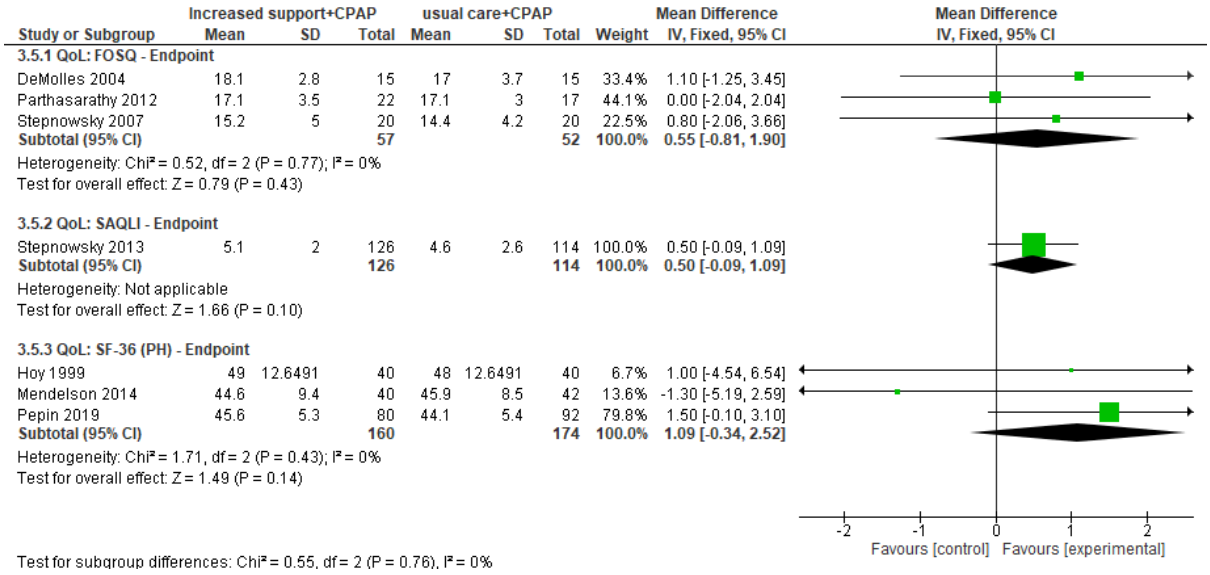


Figure 21: Quality of Life: Comparison of Change from Baseline Values(FOSQ, 5-20; higher is better, SF-36 0-100; higher is better)

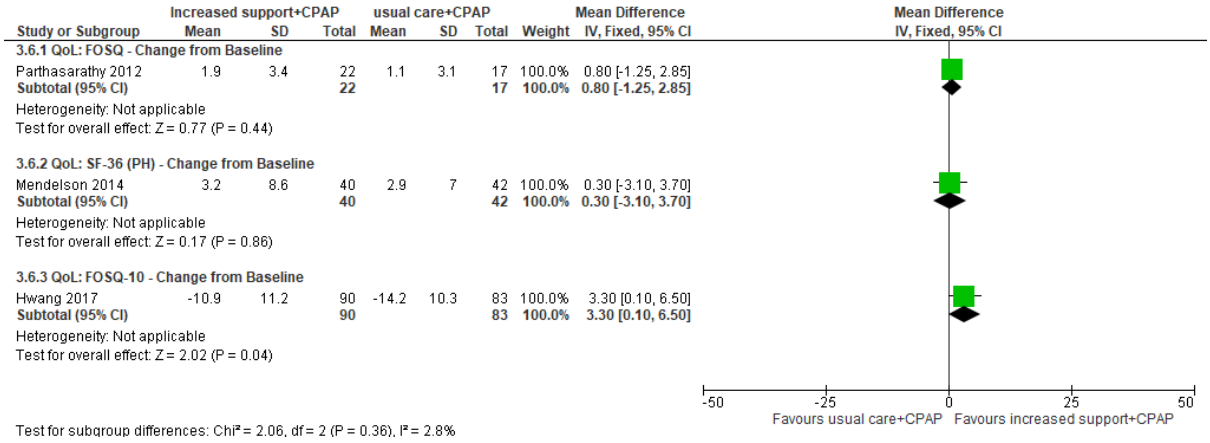


Figure 22: diastolic blood pressure

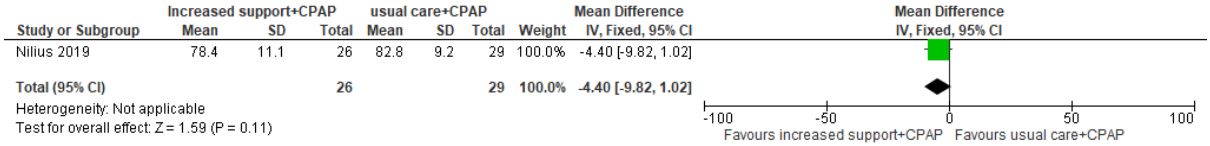


Figure 23: systolic blood pressure

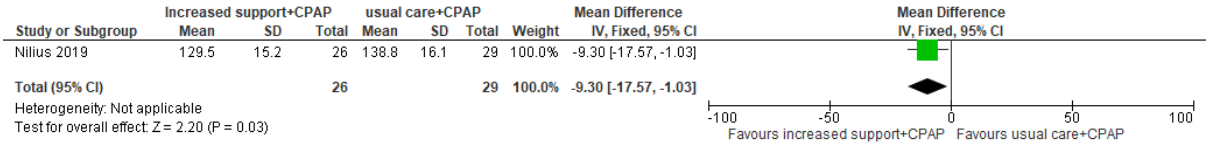
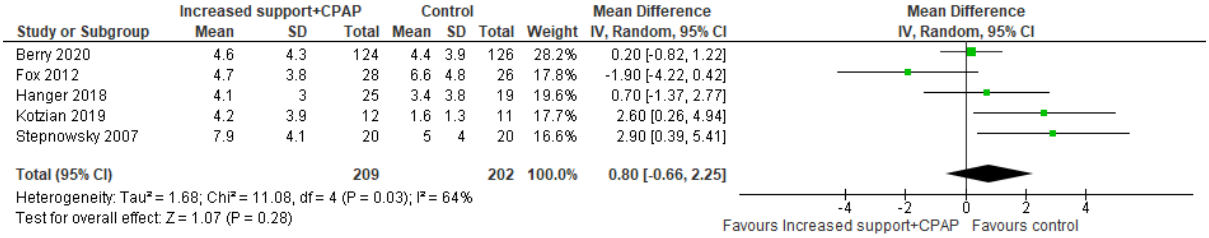


Figure 24: AHI on treatment- comparison of values at end point (lower is better)



E.1.4 Mixed (SUP/EDU/BEH) Intervention + CPAP versus Usual Care + CPAP- severe OSAHS

Figure 25: CPAP Device Usage (hours/night) (higher is better)

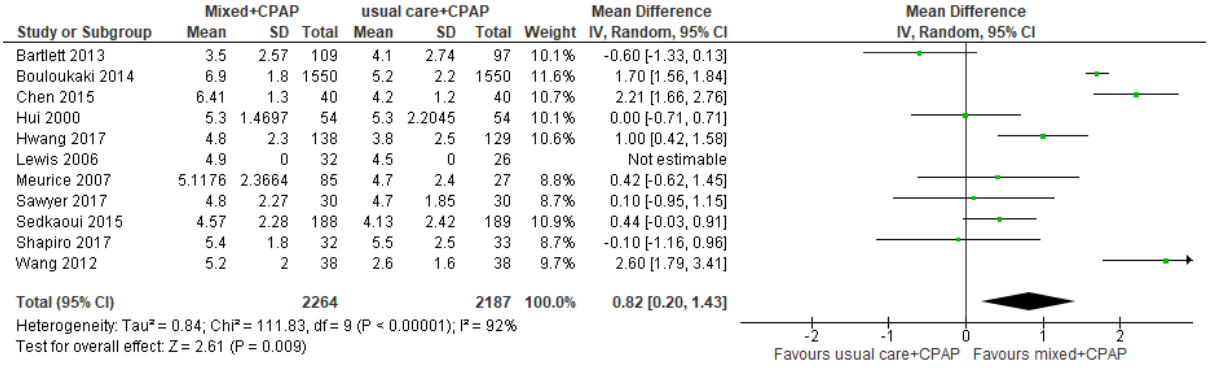


Figure 26: N deemed adherent (≥ four hours/night)

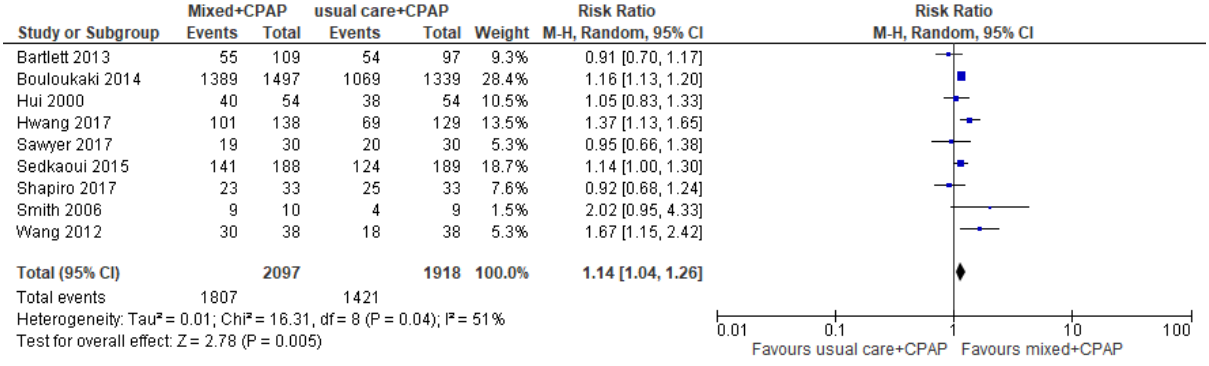


Figure 27: Withdrawal

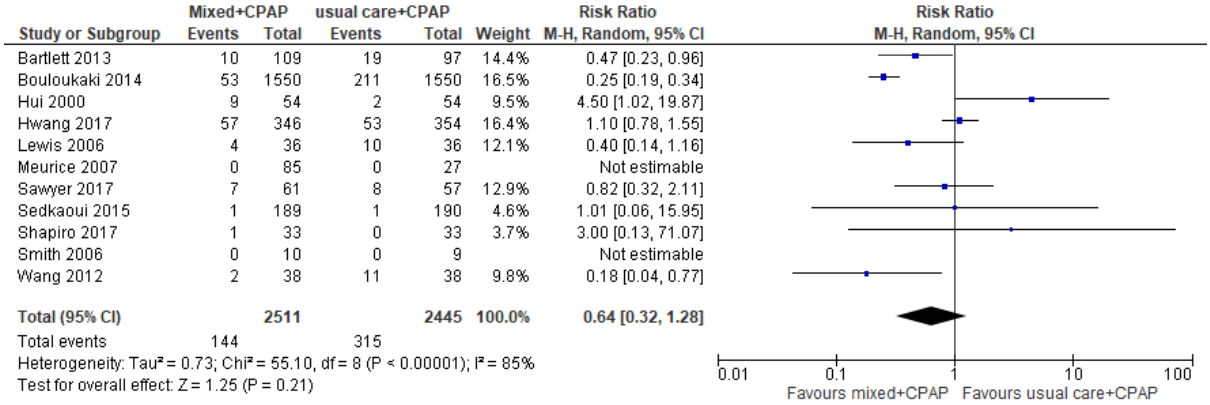


Figure 28: Quality of Life: Comparison of Change from Baseline Values (FOSQ, 5-20; higher is better, SF-36 0-100; higher is better)

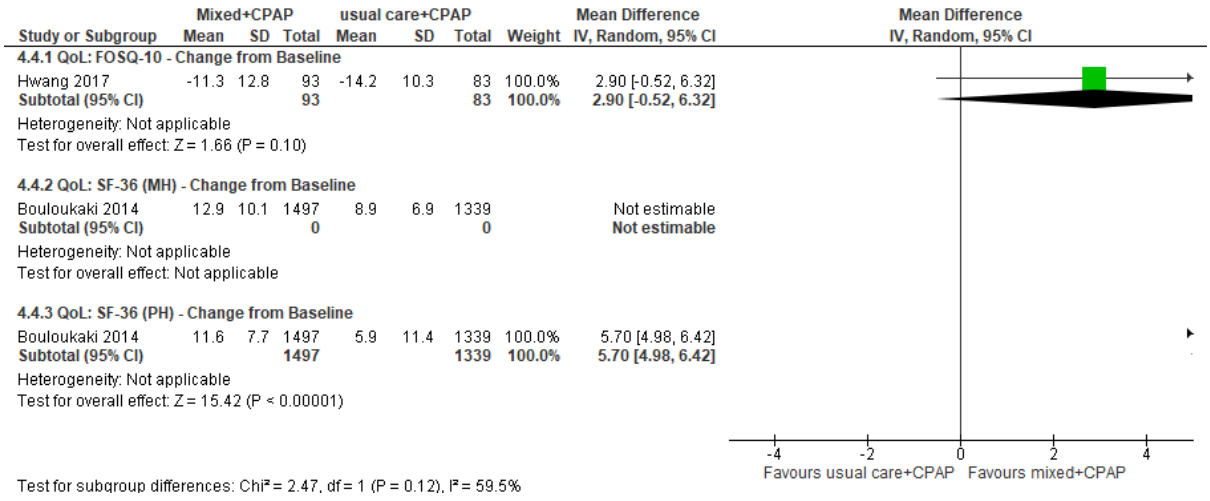


Figure 29: Quality of Life: Comparison of Values at Endpoint (FOSQ, 5-20; higher is better, SF-36 0-100; higher is better)

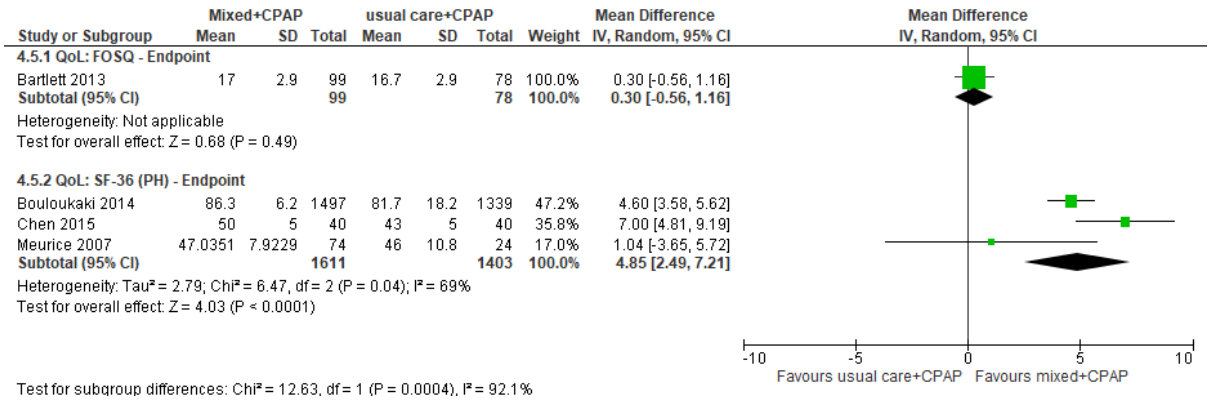
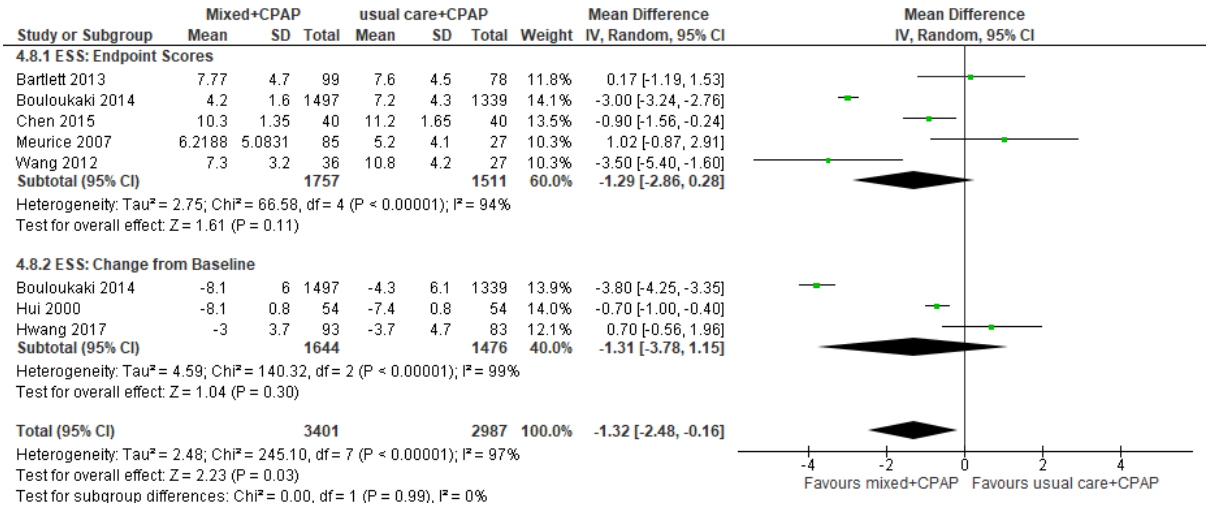



Figure 30: ESS score (0-24; higher is worse)