

SUPPLEMENTAL MATERIALS – Behavioral and Psychological Treatments for Chronic Insomnia Disorder in Adults Guideline Meta-Analyses and Summary of Findings Tables

All Literature Search Terms

PICO 1 PubMed Search String:

((("Sleep Initiation and Maintenance Disorders"[MeSH Terms] OR "sleep initiation and maintenance disorders"[All Fields] OR "insomnia"[All Fields]) NOT "Insomnia, Fatal Familial"[MeSH Terms]) AND "humans"[MeSH Terms] AND "adult"[MeSH Terms] AND ("behavior therapy"[MeSH Terms] OR "behaviour therapy"[All Fields] OR "behavior therapy"[All Fields] OR "psychotherapy"[MeSH Terms] OR "psychotherapy"[All Fields] OR "psychotherap*" [All Fields] OR "biofeedback, psychology"[MeSH Terms] OR "biofeedback"[All Fields] OR "psychology biofeedback"[All Fields] OR "biofeedback, psychology"[All Fields] OR "body monitoring"[All Fields] OR "BBTI"[All Fields] OR "behavioral treatment"[All Fields] OR "cognitive therapy"[MeSH Terms] OR "cognitive therapy"[All Fields] OR "cognitive behaviour therapy"[All Fields] OR "cognitive behavior therapy"[All Fields] OR "cognitive behavior therapies"[All Fields] OR "cognitive behavioral therapy for insomnia"[All Fields] OR "CBT-I"[All Fields] OR "CBT-Insomnia"[All Fields] OR "sleep retraining"[All Fields] OR "mindfulness"[MeSH Terms] OR "mindfulness"[All Fields] OR "multicomponent behavioral therapy"[All Fields] OR "relaxation therapy"[MeSH Terms] OR "relaxation therapy"[All Fields] OR "relaxation therapies"[All Fields] OR "abdominal breathing"[All Fields] OR "deep breathing"[All Fields] OR "progressive muscle relaxation"[All Fields] OR "imagery"[All Fields] OR "imagery (psychotherapy)"[MeSH Terms] OR "imagery training"[All Fields] OR "special place imagery"[All Fields] OR "guided imagery"[All Fields] OR "autogenic training"[MeSH Terms] OR "autogenic training"[All Fields] OR "desensitization relaxation"[All Fields] OR "paradoxical intention"[All Fields] OR "sleep hygiene"[MeSH Terms] OR "sleep hygiene"[All Fields] OR "sleep restriction"[All Fields] OR "stimulus control"[All Fields]) AND English[lang] AND ("aged"[MeSH Terms] OR "elderly"[All Fields] OR "veterans" [MeSH Terms] OR "military family"[MeSH Terms] OR "active duty"[All Fields] OR "military personnel"[MeSH Terms] OR "sleep beliefs"[All Fields] OR "sleep anxiety"[All Fields] OR "self efficacy"[MeSH Terms] OR "self efficacy"[All Fields] OR "self-efficacy"[All Fields] OR "self concept"[MeSH Terms] OR "self concept"[All Fields] OR "self-concept"[All Fields] OR "performance anxiety"[MeSH Terms] OR "performance anxiety"[All Fields] OR "Comorbidity"[MeSH Terms] OR "comorbidities"[All Fields]) AND ("1900/01/01"[PDAT] : "2020/02/13"[PDAT]) NOT "Editorial"[Publication Type] NOT "Letter"[Publication Type] NOT "Comment"[Publication Type] NOT "Case Reports"[Publication Type] NOT "Biography"[Publication Type] NOT "Review"[Publication Type])

PICO 1 PsychInfo Search String

SU.EXACT("Insomnia") AND (SU.EXACT("Behavior Therapy") OR SU.EXACT("Psychotherapy") OR SU.EXACT("Biofeedback") OR body monitoring OR bbt OR behavioral treatment OR SU.EXACT("Cognitive Therapy") OR SU.EXACT("Cognitive Behavior Therapy") OR cognitive behavior therapies OR cognitive behavioral therapy for insomnia OR cbt-I OR cbt-Insomnia OR sleep retraining OR SU.EXACT("Mindfulness") OR multicomponent behavioral therapy OR relaxation therapy OR relaxation therapies OR abdominal breathing OR deep breathing OR progressive muscle relaxation OR imagery OR imagery training OR special place imagery OR guided imagery OR autogenic training OR desensitization relaxation OR paradoxical intention OR sleep hygiene OR sleep restriction OR SU.EXACT("Stimulus Control")) AND (elderly OR SU.EXACT("Military Veterans") OR SU.EXACT("Military Duty Status") OR sleep beliefs OR sleep anxiety OR SU.EXACT("Self-Efficacy") OR self-concept OR SU.EXACT("Performance Anxiety") OR SU.EXACT("Comorbidity") OR comorbidities)

PICO 2 PubMed Search String:

((("Sleep Initiation and Maintenance Disorders"[MeSH Terms] OR "sleep initiation and maintenance disorders"[All Fields] OR "insomnia"[All Fields]) NOT "Insomnia, Fatal Familial"[MeSH Terms]) AND "humans"[MeSH Terms] AND "adult"[MeSH Terms] AND ("behavior therapy"[MeSH Terms] OR "behaviour therapy"[All Fields] OR "behavior therapy"[All Fields] OR "psychotherapy"[MeSH Terms] OR "psychotherapy"[All Fields] OR "psychotherap*" [All Fields] OR "biofeedback, psychology"[MeSH Terms] OR "biofeedback"[All Fields] OR "psychology biofeedback"[All Fields] OR "biofeedback, psychology"[All Fields] OR "body monitoring"[All Fields] OR "BBTI"[All Fields] OR "behavioral treatment"[All Fields] OR "cognitive therapy"[MeSH Terms] OR "cognitive therapy"[All Fields] OR "cognitive behaviour therapy"[All Fields] OR "cognitive behavior therapy"[All Fields] OR "cognitive behavior therapies"[All Fields] OR "cognitive behavioral therapy for insomnia"[All Fields] OR "CBT-I"[All Fields] OR "CBT-Insomnia"[All Fields] OR "sleep retraining"[All Fields] OR "mindfulness"[MeSH Terms] OR "mindfulness"[All Fields] OR "multicomponent behavioral therapy"[All Fields] OR "relaxation therapy"[MeSH Terms] OR "relaxation therapy"[All Fields] OR "relaxation therapies"[All Fields] OR "abdominal breathing"[All Fields] OR "deep breathing"[All Fields] OR "progressive muscle relaxation"[All Fields] OR "imagery"[All Fields] OR "imagery (psychotherapy)"[MeSH Terms] OR "imagery training"[All Fields] OR "special place imagery"[All Fields] OR "guided imagery"[All Fields] OR "autogenic training"[MeSH Terms] OR "autogenic training"[All Fields] OR "desensitization relaxation"[All Fields] OR "paradoxical intention"[All Fields] OR "sleep hygiene"[MeSH Terms] OR "sleep hygiene"[All Fields] OR "sleep restriction"[All Fields] OR "stimulus control"[All Fields]) AND ("in-person"[All Fields] OR "self-help groups" [MeSH Terms] OR "group" [All Fields] OR "psychotherapy, group"[MeSH Terms] OR "computer-assisted instruction"[MeSH] OR "computer-assisted instruction"[All Fields] OR "computer-based"[All Fields] OR "internet" [MeSH Terms] OR "internet-delivered"[All Fields] OR "internet-based" [All Fields] OR "web-based" [All Fields] OR "mobile applications"[MeSH Terms] OR "mobile applications"[All Fields] OR "mobile app"[All Fields] OR "telecommunications"[MeSH Terms] OR "telephone" [MeSH Terms] OR "telephone" [All Fields] OR "telephone-based"[All Fields] OR "telemedicine"[MeSH Terms] OR "telemedicine"[All Fields] OR "social networking"[MeSH Terms] OR "social networking"[All Fields] OR "social networks"[All Fields] OR "social community"[All Fields] OR "online communities"[All Fields] OR "videoconferencing"[MeSH Terms] OR "videoconferencing"[All Fields] OR "bibliotherapy"[MeSH Terms] OR "bibliotherapy"[All Fields] OR "bibliotherapies"[All Fields] OR "self-help"[All Fields] OR "community-based"[All Fields]) AND English[lang] AND ("1900/01/01"[PDAT] : "2020/02/12"[PDAT]) NOT "Editorial"[Publication Type] NOT "Letter"[Publication Type] NOT "Comment"[Publication Type] NOT "Case Reports"[Publication Type] NOT "Biography"[Publication Type] NOT "Review"[Publication Type])

PICO 2 PsychInfo Search String

SU.EXACT("Insomnia") AND (SU.EXACT("Behavior Therapy") OR SU.EXACT("Psychotherapy") OR SU.EXACT("Biofeedback") OR body monitoring OR bbt OR behavioral treatment OR SU.EXACT("Cognitive Therapy") OR SU.EXACT("Cognitive Behavior Therapy") OR cognitive behavior therapies OR cognitive behavioral therapy for insomnia OR cbt-I OR cbt-Insomnia OR sleep retraining OR SU.EXACT("Mindfulness") OR multicomponent behavioral therapy OR relaxation therapy OR relaxation therapies OR abdominal breathing OR deep breathing OR progressive muscle relaxation OR imagery OR imagery training OR special place imagery OR guided imagery OR autogenic training OR desensitization relaxation OR paradoxical intention OR sleep hygiene OR sleep restriction OR SU.EXACT("Stimulus Control")) AND (SU.EXACT("Group Psychotherapy") OR in-person OR self-help groups OR group SU.EXACT("Computer Assisted Instruction") OR computer-based OR SU.EXACT("Internet") OR internet-delivered OR internet-based OR web-based OR mobile applications OR mobile applications OR mobile app OR telecommunications OR telephone OR telephone-based OR SU.EXACT("Telemedicine") OR SU.EXACT("Social Networks") OR SU.EXACT("Online Social Networks") OR social community OR online communities OR videoconferencing OR SU.EXACT("Bibliotherapy") OR bibliotherapies OR SU.EXACT("Self-Help Techniques") OR community-based)

Exclusion Criteria: Exclusion criteria are applied during the abstract review of all retrieved publications. Studies that meet any of the exclusion criteria are rejected from the systematic review.

A. Publication type

1. Conference abstracts
2. Editorials
3. Review
4. Methods

B. Study type

1. Animal research
2. Case reports
3. Case series

C. Language non-English

D. Sample size < 20

E. Diagnosis NOT insomnia

F. Patient population < 18 years of age

G. Main study objective is NOT evaluating the efficacy/effectiveness of psychological and behavioral therapies for insomnia

H. Does NOT include one of the following interventions of interest:

1. Biofeedback
2. Behavioral treatment for insomnia
3. Cognitive behavioral therapy for insomnia
4. Intensive sleep retraining
5. Mindfulness
6. Multicomponent behavioral therapy for insomnia
7. Relaxation therapy
8. Paradoxical intention treatment
9. Sleep hygiene
10. Sleep restriction
11. Stimulus control

Inclusion Criteria: Inclusion criteria are applied during the full publication review of all publications that were not rejected during the abstract review. Studies that meet all inclusion criteria will be accepted as evidence to use in the systematic review.

A. Intervention and control condition comparisons

Any of the following behavioral and psychological interventions (must meet at least 1):	Compared to any of the following control conditions (must meet at least 1):
<ol style="list-style-type: none">1. Biofeedback2. Cognitive behavioral therapy-insomnia (i.e., Cognitive therapy, Sleep restriction, and Stimulus control)3. Intensive sleep retraining4. Mindfulness5. Multicomponent behavioral therapy for insomnia	<ol style="list-style-type: none">1. Attention control2. Pharmacologic –placebo drug3. Quasi-desensitization4. Sleep hygiene or sleep education5. Usual care6. Wait-list

6. Relaxation therapy <i>(i.e., Abdominal breathing, Imagery training, Autogenic training)</i> 7. Paradoxical intention treatment 8. Sleep hygiene 9. Sleep restriction 10. Stimulus control	
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B. Intervention delivery method *(must meet at least 1)*

1. In-person one-on-one visit with a trained CBT-I specialist
2. In-person one-on-one visit with provider who is not a trained behavioral and psychological specialist
3. Group behavioral and psychological
4. Telephone
5. Self-help book
6. Internet-delivered
7. Community-based workshop
8. Telemedicine (videoconferencing, etc.)

C. Outcomes of interest *(must meet at least 1)*

1. Beliefs and attitudes about sleep (important)
2. Daytime fatigue domain (important)
3. Insomnia severity (important)
4. Nights with hypnotic use (important)
5. Number of nighttime awakenings (important)
6. Quality of sleep (critical)
7. Remission rate (critical)
8. Responder rate (critical)
9. Sleep efficiency (important)
10. Sleep latency (critical)
11. Total wake time (critical)
12. Total sleep time (important)
13. Wake after sleep onset (critical)

D. Insomnia diagnosis *(must meet at least 1)*

1. Use of any of the 3 diagnostic systems, regardless of version: DSM, ICSD, RDC
2. Use of validated sleep instruments in combination with quantitative objective/subjective measure and insomnia complaints (e.g. PSQI and actigraphy or diary-assessed SOL>30 minutes for ≥3 nights a week)
3. Other sleep complaints/criteria/symptoms that would require adjudication

Abbreviations:

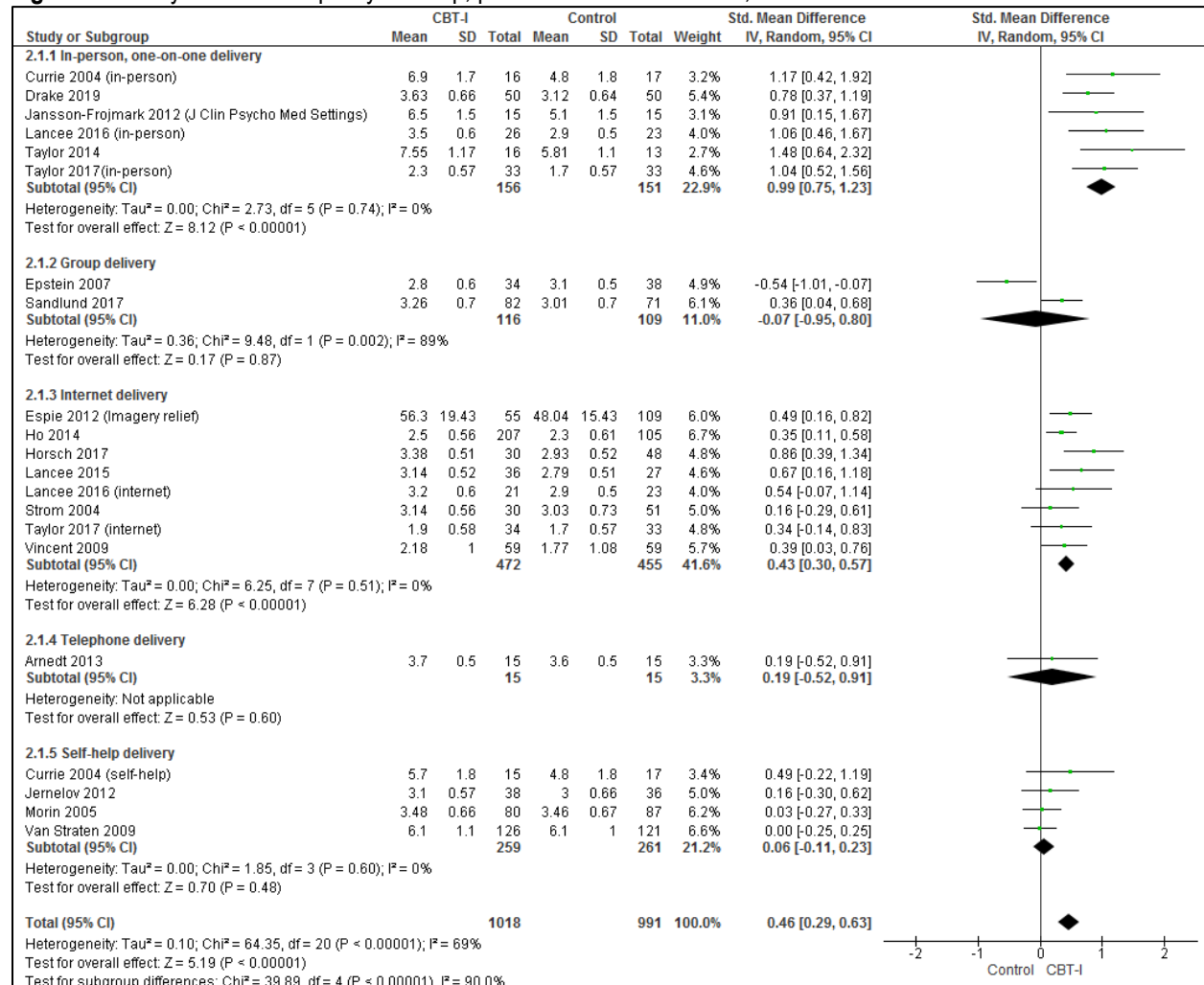
AASM- American Academy of Sleep Medicine
BBTs- Brief Behavioral Therapies
CBT-I- Cognitive Behavioral Therapy for Insomnia
CPG- Clinical practice guideline
DBAS- Dysfunctional Beliefs and Attitudes about Sleep scale
FFS-Flinders Fatigue Scale
FSI- Fatigue symptom index
FSS- Fatigue severity scale
GRADE- Grading of Recommendations Assessment, Development, and Evaluation
IQR- Interquartile range
ISI- Insomnia Severity Index
ISQ- Insomnia Severity Questionnaire
ISR- Intensive Sleep Retraining
MFI- Multidimensional Fatigue Inventory
PI: Paradoxical Intention
PICO – Patient, intervention, comparator, outcome
POMS-F- Profile of Mood States Fatigue subscale
PSG- Polysomnography
PSQI – Pittsburgh sleep quality index
RCT- Randomized controlled trial
SD- Standard deviation
SE- Standard error
SMD- Standardized mean-difference
SR- Systematic review
RT- Relaxation therapy
TF- Task force
WASO- Wake after sleep onset

Cognitive Behavioral Therapy (CBT-I)

CBT-I vs. Control

Quality of sleep

Figure S1. Diary-determined quality of sleep, post treatment differences, CBT-I vs. control



*Currie 2004 (in-person and self) use same control data

Espie 2012 (imagery and usual care pooled control data)

Lancee 2016 (in-person and internet) use same control data

Taylor 2017 (in-person and internet) use same control data

Ho 2014 (pooled results for self-help with and without tel. support, SE converted to SD, diary scores flipped as lower scores indicate improvement)

Quality of sleep: Insomnia and no comorbidities

Table S1. Diary-determined quality of sleep, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Taylor 2014	In-person, one-on-one delivery	7.55	1.7	16	5.81	1.1	13	1.48 [0.64, 2.32]
Strom 2014	Internet delivery	3.14	0.56	30	3.03	0.73	51	0.16 [-0.29, 0.61]

Quality of sleep: Insomnia and comorbid psychiatric conditions

Table S2. Diary-determined quality of sleep, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Currie 2004	In-person, one-on-one and self-help (pooled)	6.32	1.75	31	4.8	1.8	17	0.85[0.23, 1.46]

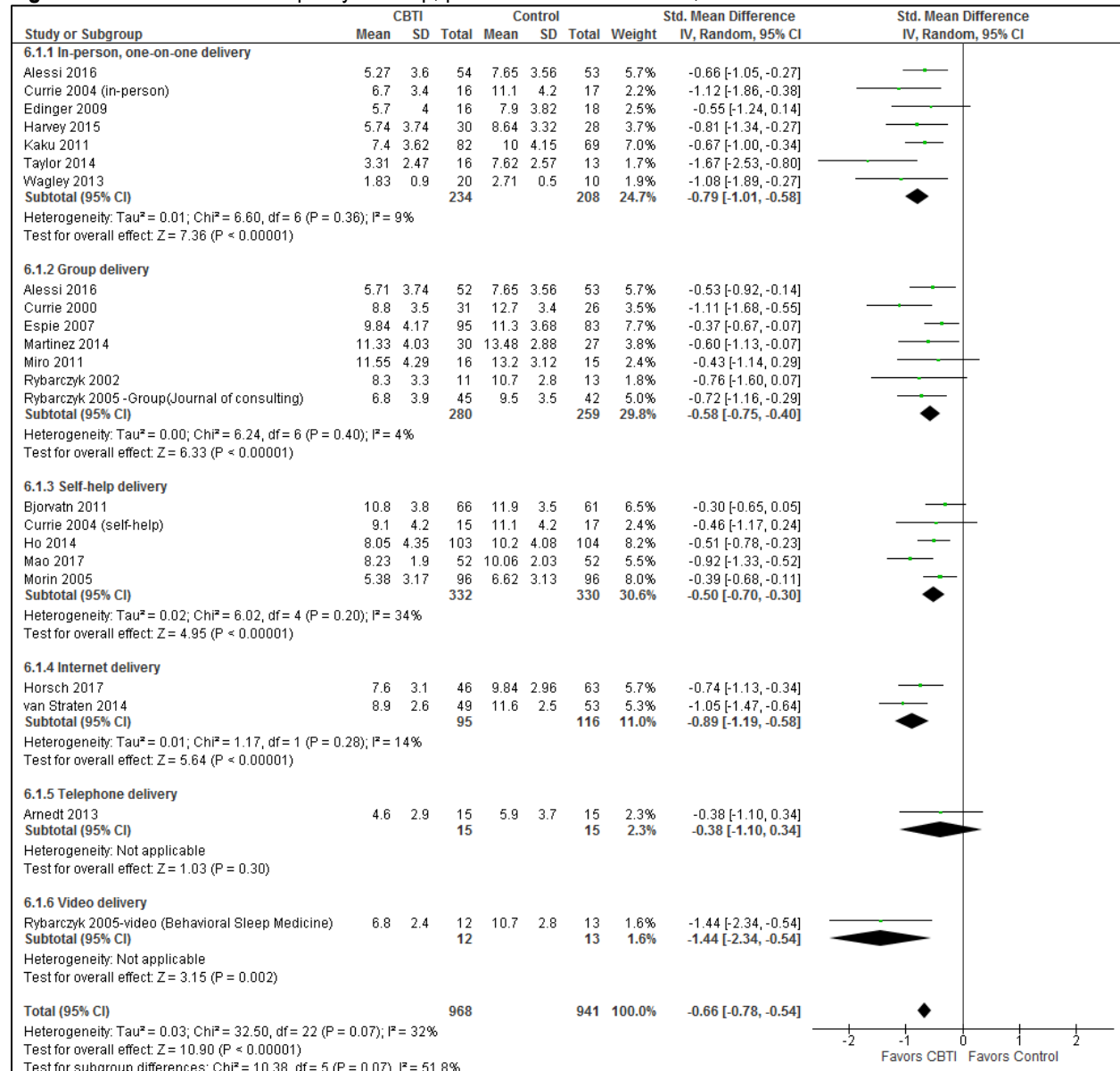
Quality of sleep: Insomnia and comorbid medical conditions

Table S3. Diary-determined quality of sleep, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Epstein 2007	In-person, one-on-one	2.8	0.6	34	3.1	0.5	38	-0.54[-1.01, -0.07]
Jansson-Frojmark 2007	In-person, one-on-one	6.5	1.5	15	5.1	1.5	15	0.91[0.15,1.67]

Quality of sleep: PSQI

Figure S2. PSQI-determined quality of sleep, post treatment differences, CBT-I vs. control



*Currie 2004 (in-person and self) use same control

*Morin 2005 SD calculated from 95%CI

*Alessi 2016 (in-person and group) use same control, SE converted to SD

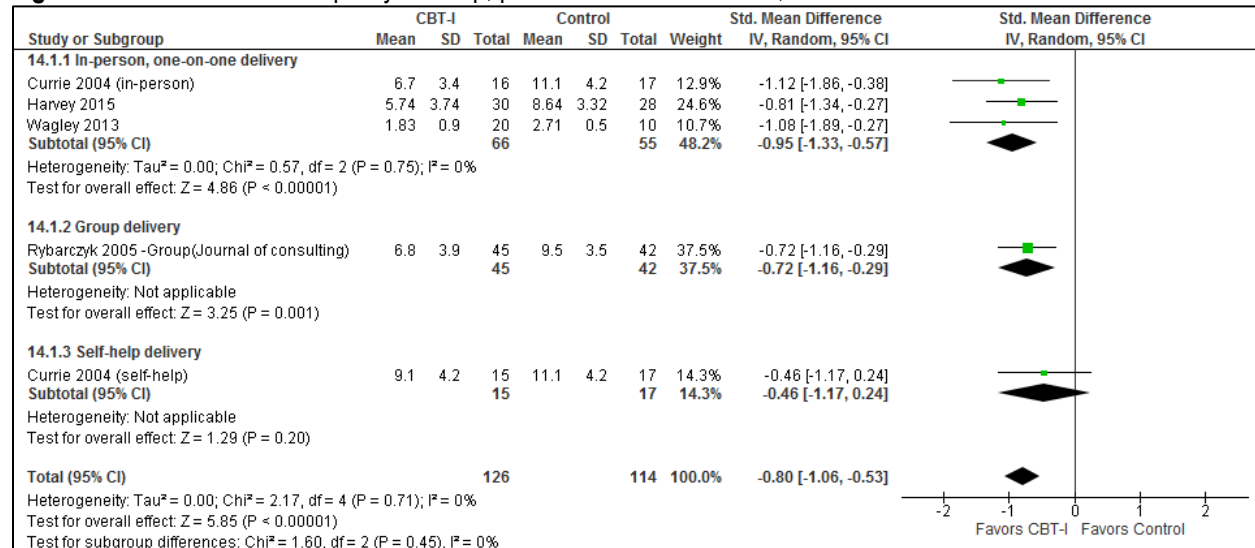
Quality of sleep (PSQI): Insomnia and no comorbidities

Table S4. PSQI-determined quality of sleep, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2009	In-person, one-on-one	5.7	4	16	7.9	3.82	18	-0.55[-1.24, 0.14]
Taylor 2014	In-person, one-on-one	3.31	2.47	16	7.62	2.57	13	-1.67[-2.53, -0.80]

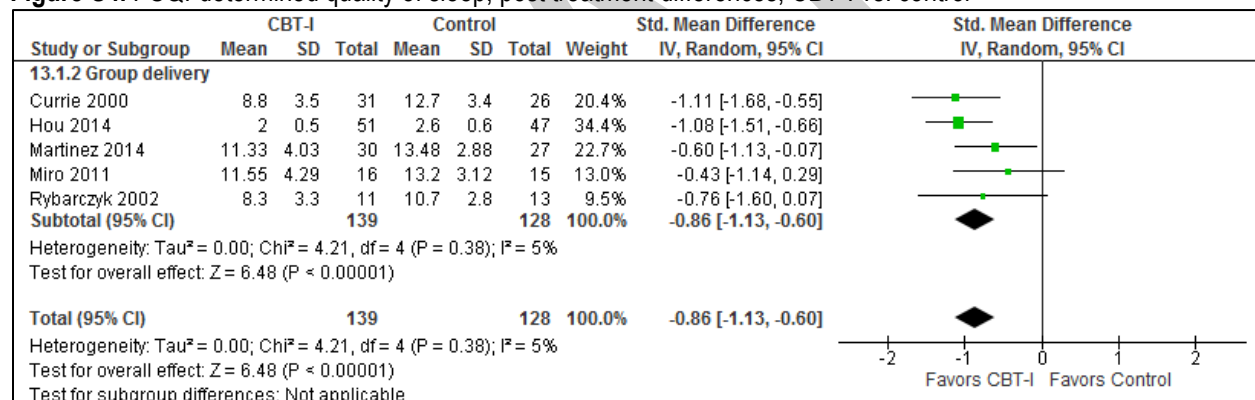
Quality of sleep (PSQI): Insomnia and comorbid psychiatric conditions

Figure S3. PSQI-determined quality of sleep, post treatment differences, CBT-I vs. control



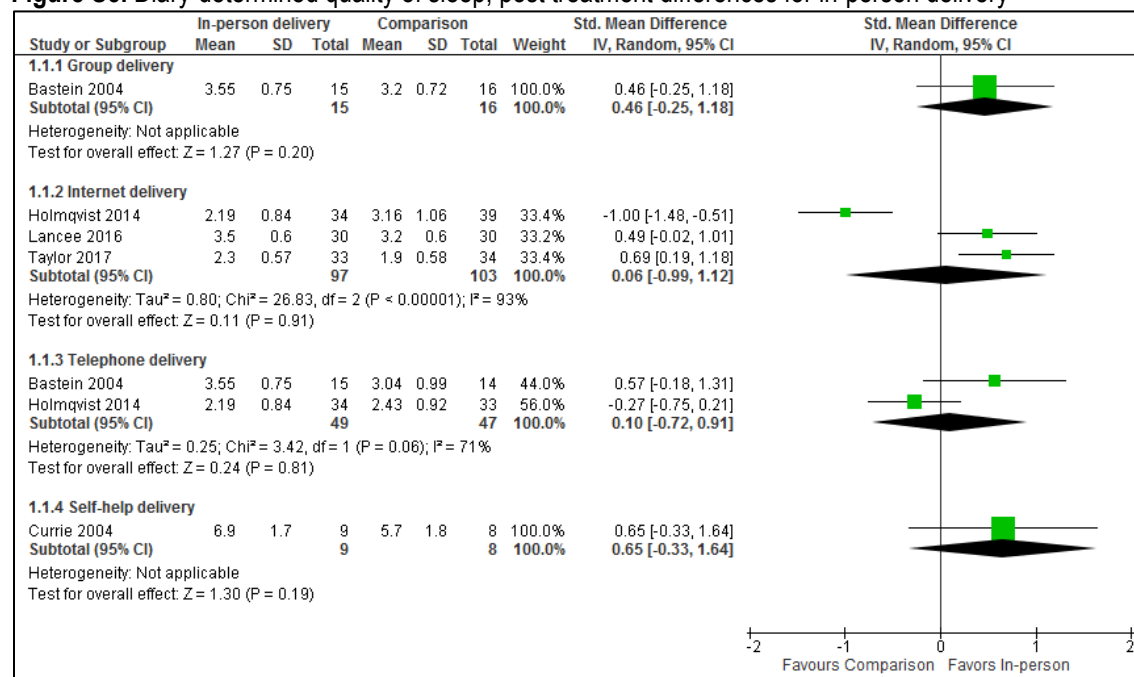
Quality of sleep (PSQI): Insomnia and comorbid medical conditions

Figure S4. PSQI-determined quality of sleep, post treatment differences, CBT-I vs. control



Quality of sleep (Diary): In-person delivery vs. comparison:

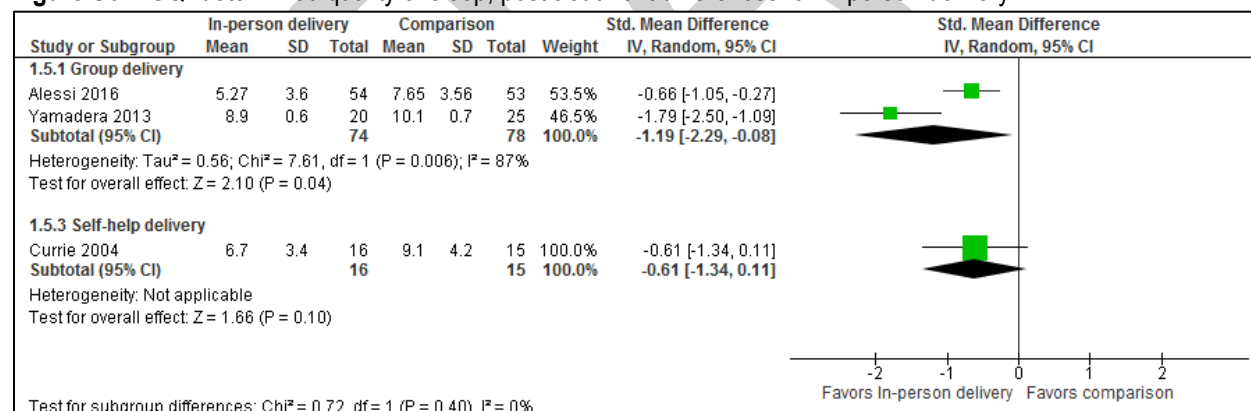
Figure S5. Diary-determined quality of sleep, post treatment differences for in-person delivery



* each subgroup of delivery method is reported separately in the results section

Quality of sleep (PSQI): In-person delivery vs. comparison:

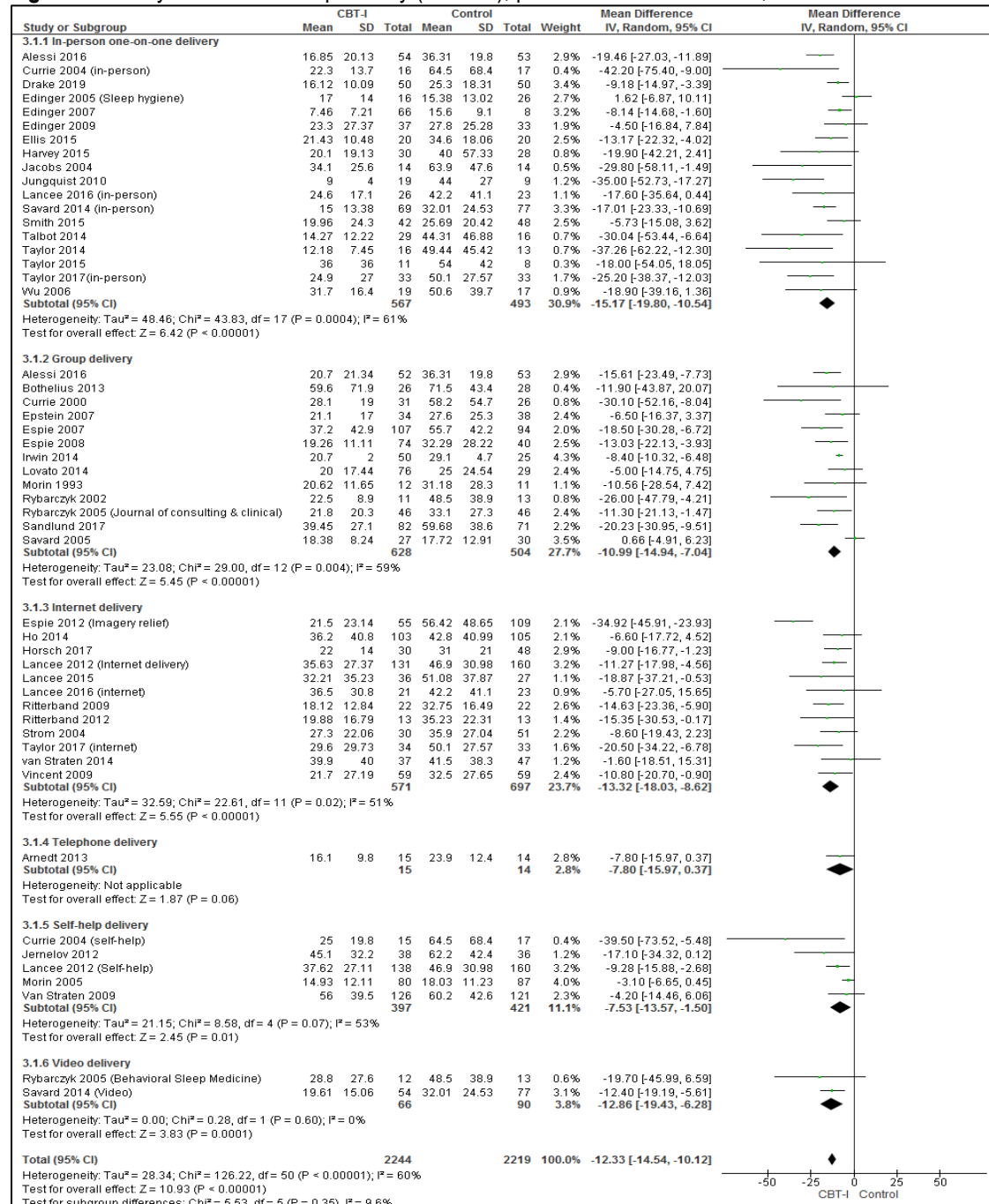
Figure S6. PSQI-determined quality of sleep, post treatment differences for in-person delivery



Test for subgroup differences: $\chi^2 = 0.72$, $df = 1$ ($P = 0.40$); $I^2 = 0\%$

Sleep latency (Diary)

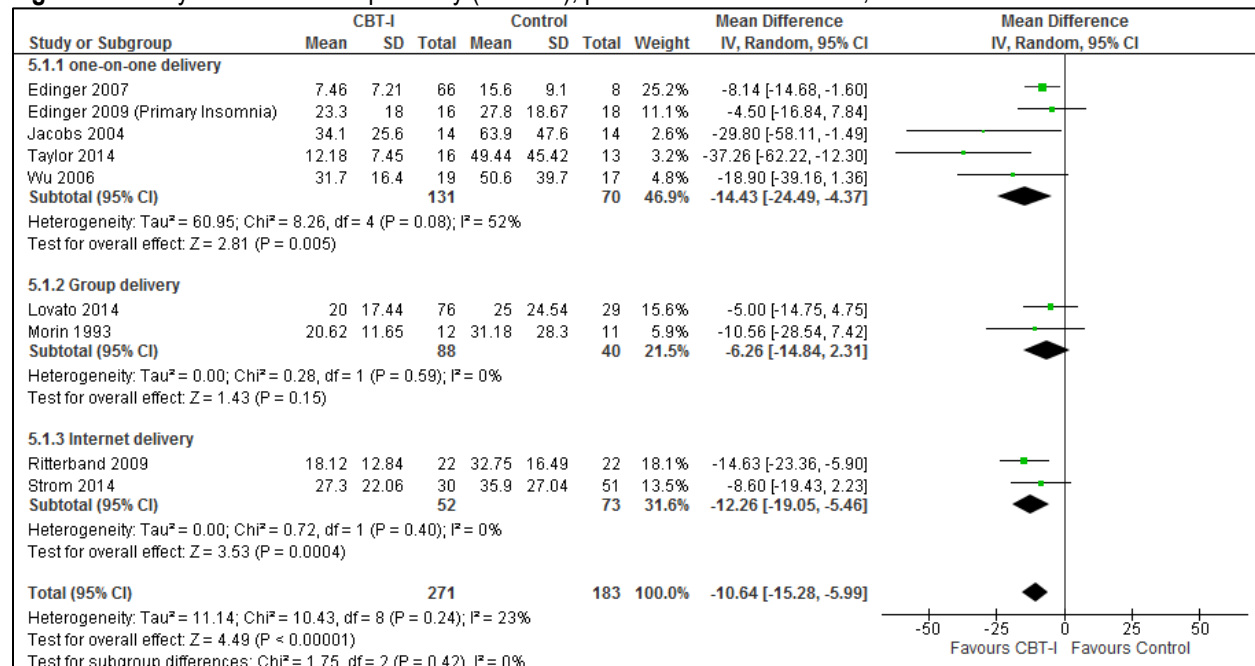
Figure S7. Diary-determined sleep latency (minutes), post treatment differences, CBT-I vs. control



*Currie 2004 (in-person and self) uses same control data
 Espe 2012 (imagery and usual care control data pooled)
 Lancee 2016 (in-person and internet) uses same control data
 Edinger 2005 (usual care and sleep hygiene control data pooled)
 Savard 2014 (in-person and video) uses same control data
 Lancee 2012 (internet and self-help) uses same control data
 Taylor 2017 (in-person and internet) uses same control data
 Alessi 2016 (in-person and group) uses same control data, SE converted to SD

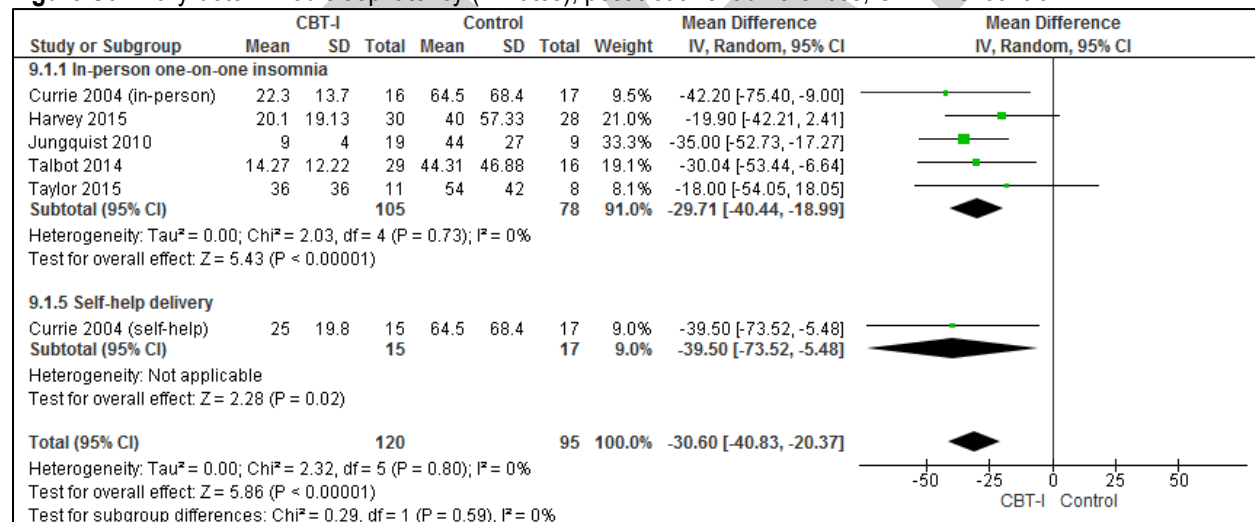
Sleep latency (Diary): Insomnia and no comorbidities

Figure S8. Diary-determined sleep latency (minutes), post treatment differences, CBT-I vs. control



Sleep latency (Diary): Insomnia and comorbid psychiatric conditions

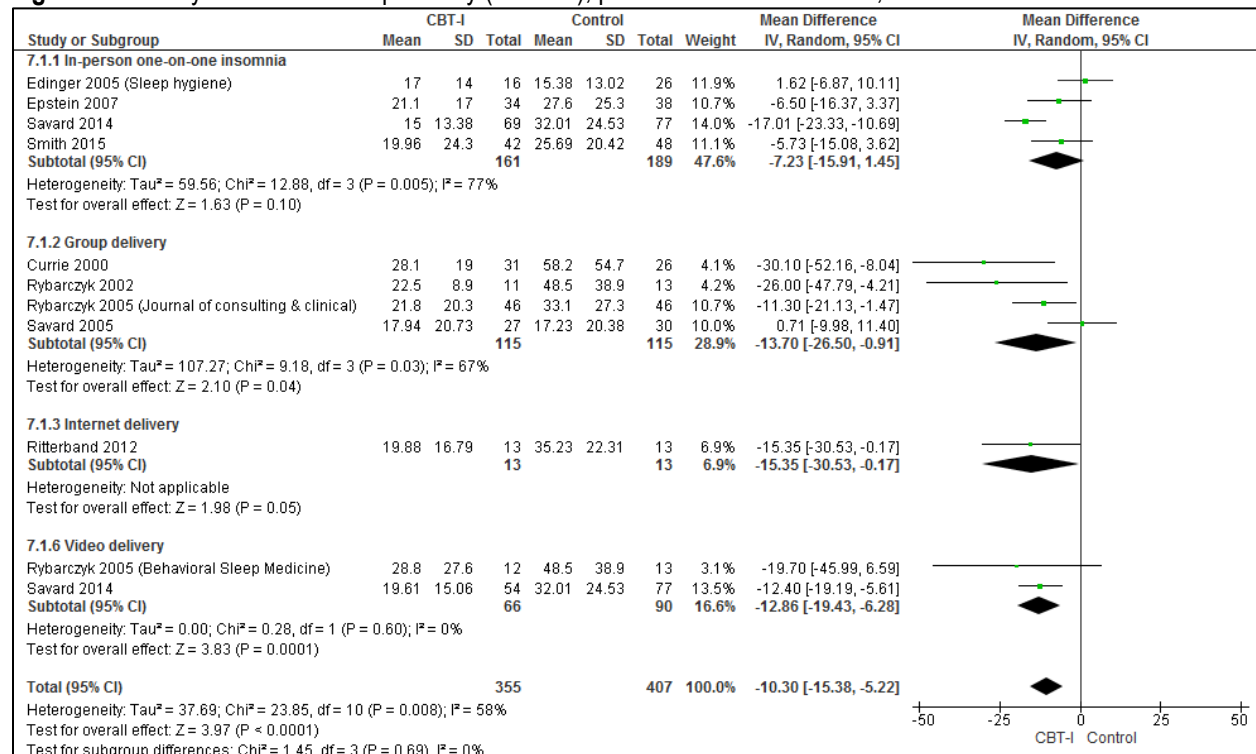
Figure S9. Diary-determined sleep latency (minutes), post treatment differences, CBT-I vs. control



*Currie 2004 (in-person and self) uses same control data

Sleep latency (Diary): Comorbid medical conditions

Figure S10. Diary-determined sleep latency (minutes), post treatment differences, CBT-I vs. control

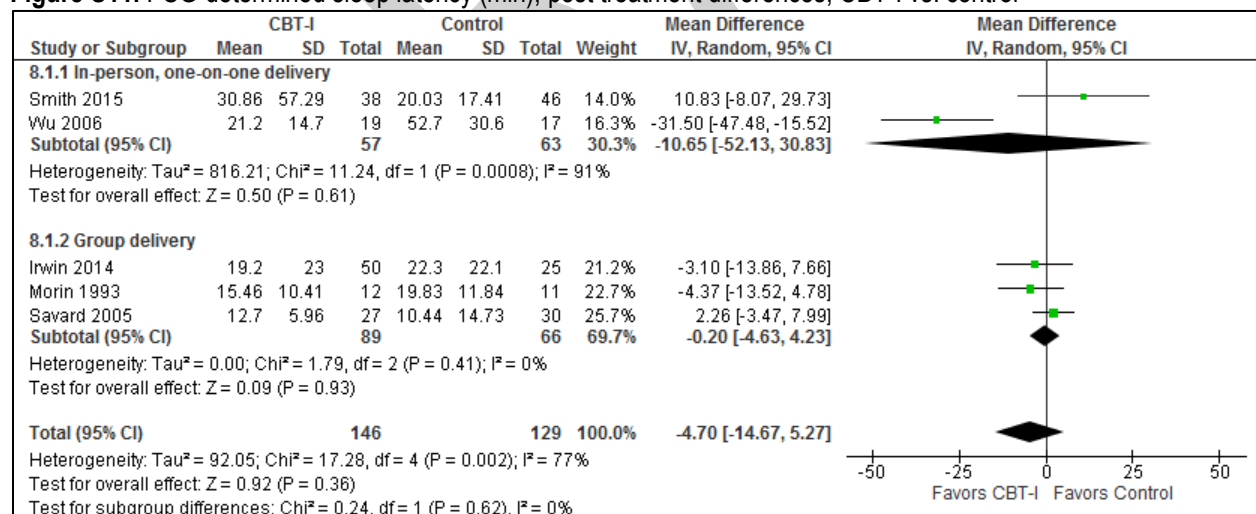


*Edinger 2005 (usual care and sleep hygiene control data pooled)

*Savard 2014 (in-person and video) uses same control data

Sleep latency (PSG)

Figure S11. PSG-determined sleep latency (min), post treatment differences, CBT-I vs. control



Sleep latency (PSG): Insomnia and no comorbidities

Table S5. PSG-determined sleep latency, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Wu 2006	In-person, one-on-one	21.2	14.7	19	52.7	30.6	17	-31.50 [-47.48, -15.52]
Morin 1993	Group delivery	15.46	10.41	12	19.83	11.84	11	-4.37 [-13.52, 4.78]

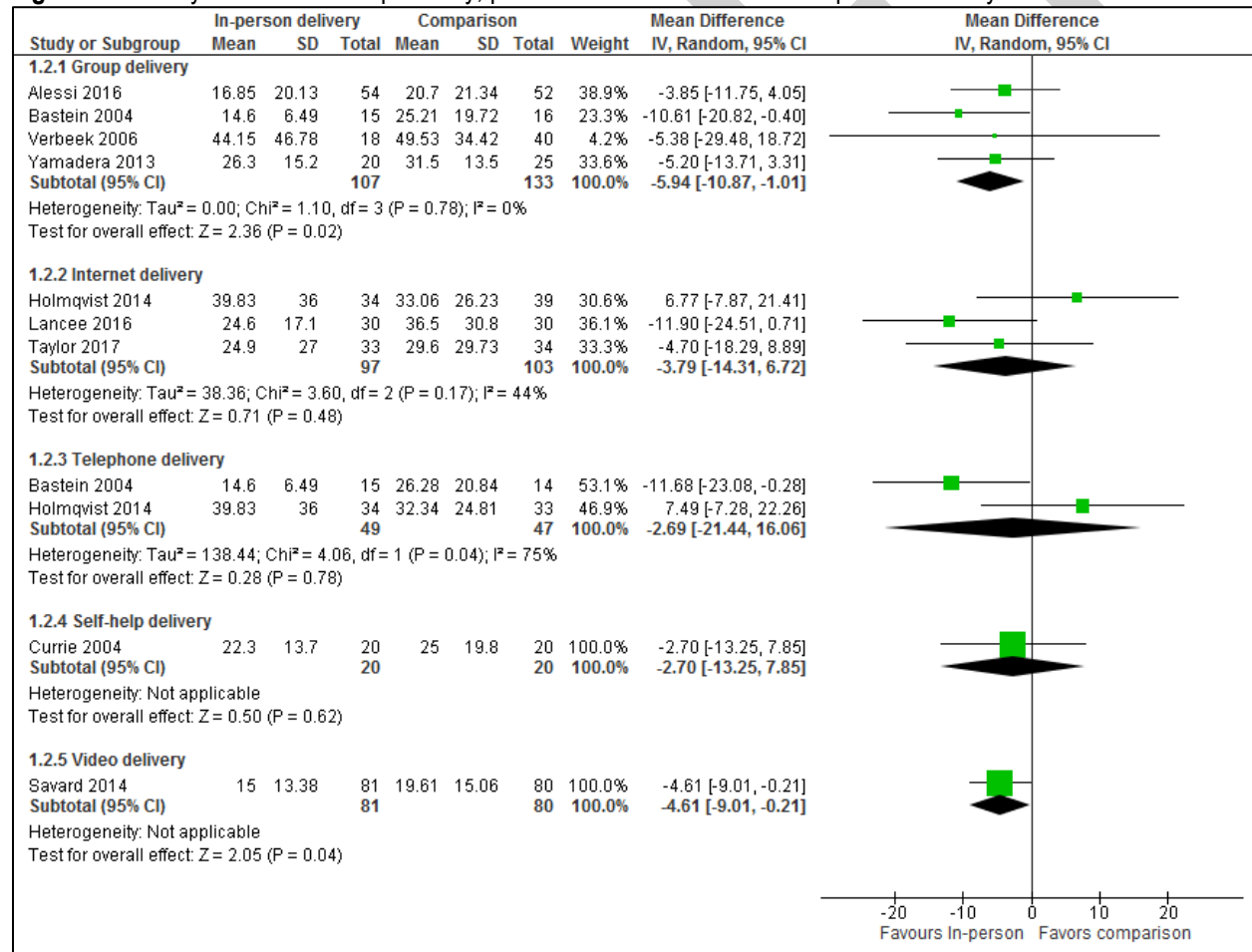
Sleep latency (PSG): Insomnia and comorbid medical conditions

Table S6. PSG-determined sleep latency, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Smith 2015	In-person, one-on-one	30.86	57.29	38	20.03	17.41	46	10.83 [-8.07, 29.73]
Savard 2005	Group delivery	12.7	5.96	12	10.44	14.73	30	2.26 [-4.00, 8.52]

Sleep latency: In-person delivery vs. comparison:

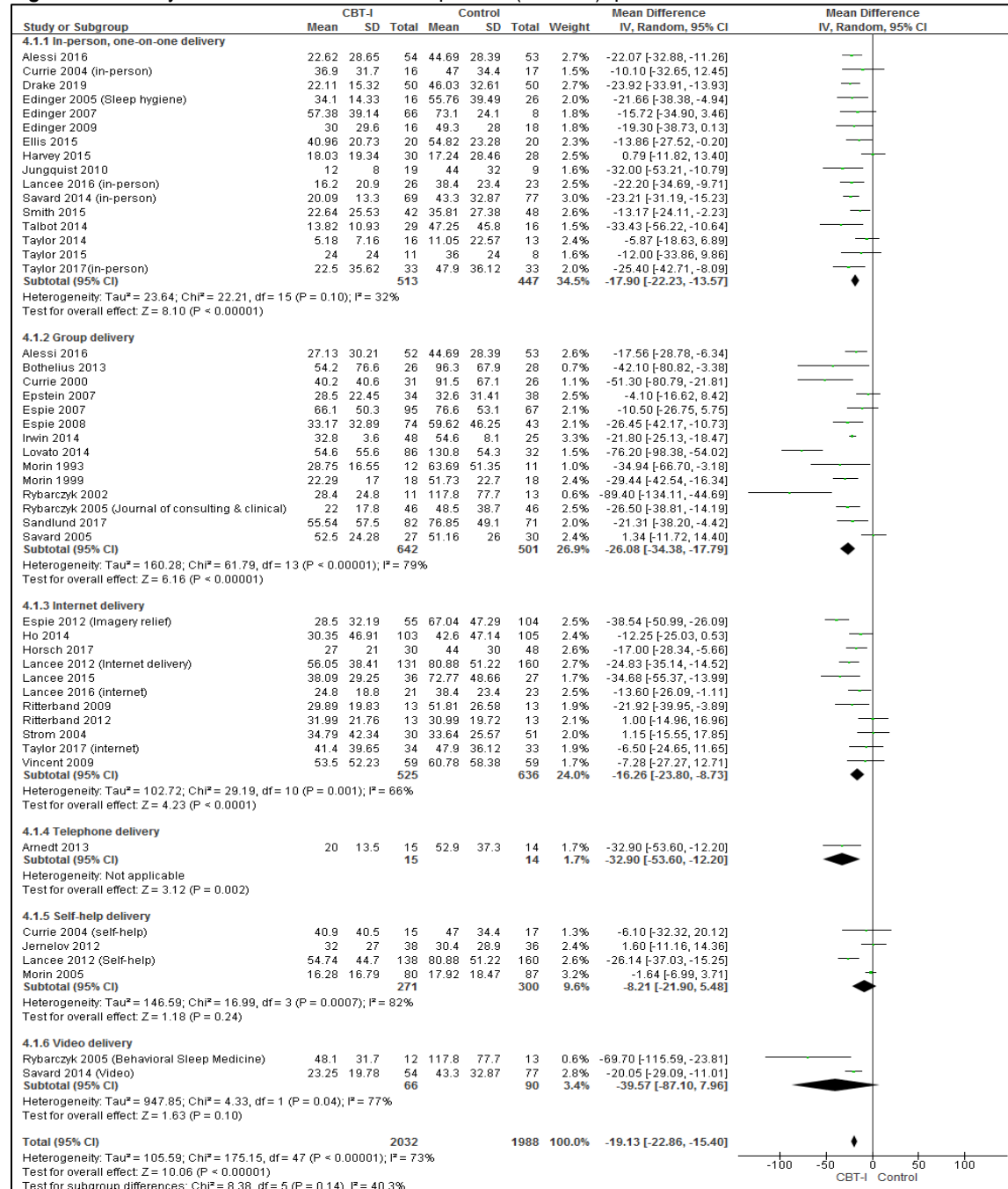
Figure S12. Diary-determined sleep latency, post treatment differences for in-person delivery



* each subgroup of delivery method is reported separately in the results section

Wake after sleep onset

Figure S13. Diary-determined wake after sleep onset (minutes), post treatment differences, CBT-I vs. control



*Currie 2004 (in-person and self) uses same control data

Espie 2012 imagery and usual care control groups pooled data

Lancee 2016 (in-person and internet) uses same control data

Edinger 2005 usual care and sleep hygiene pooled control data

Savard 2014 (in-person and video) uses same control data

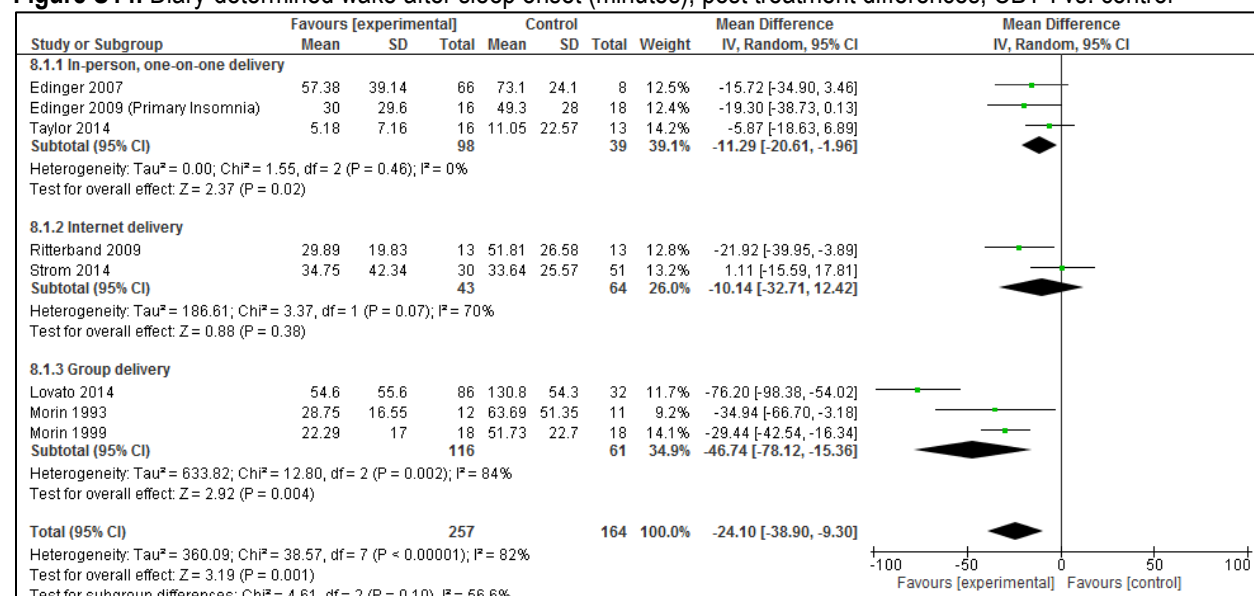
Lancee 2012 (internet and self-help) uses same control data

Taylor 2017 (in-person and internet) uses same control data

Alessi 2016 (in-person and group) uses same control data, SE converted SD

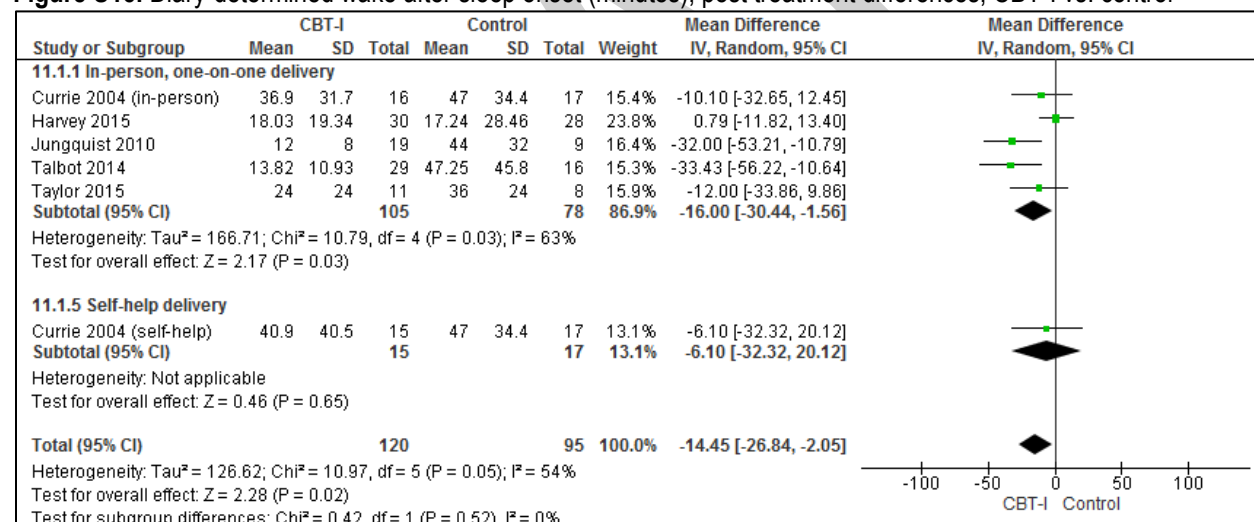
Wake after sleep onset (Diary): Insomnia and no comorbidities

Figure S14. Diary-determined wake after sleep onset (minutes), post treatment differences, CBT-I vs. control



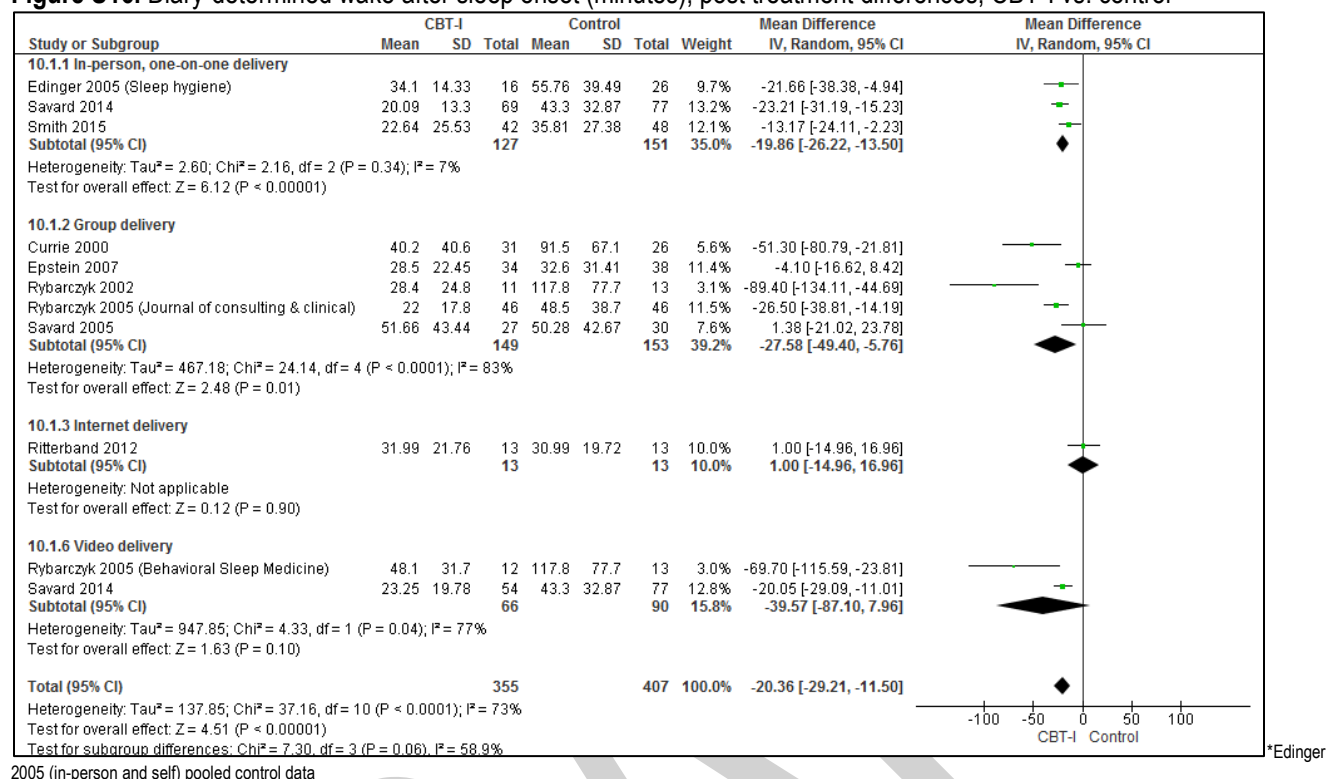
Wake after sleep onset (Diary): Insomnia and comorbid psychiatric conditions

Figure S15. Diary-determined wake after sleep onset (minutes), post treatment differences, CBT-I vs. control



Wake after sleep onset: Insomnia and comorbid medical conditions

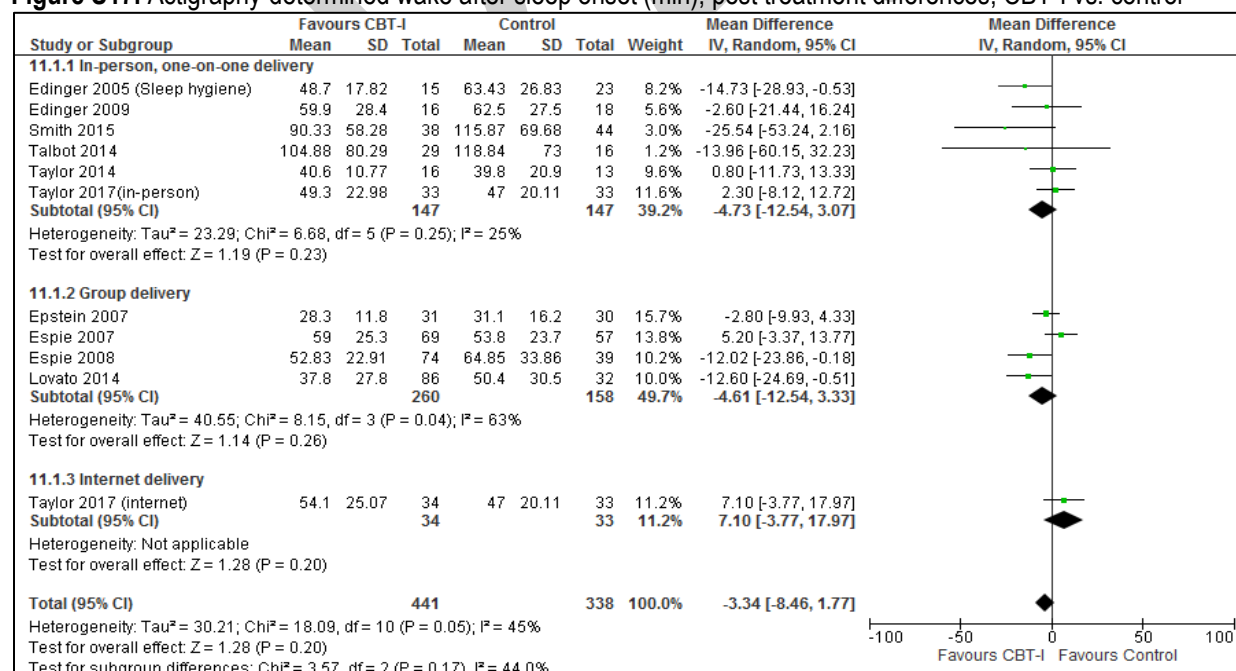
Figure S16. Diary-determined wake after sleep onset (minutes), post treatment differences, CBT-I vs. control



2005 (in-person and self) pooled control data

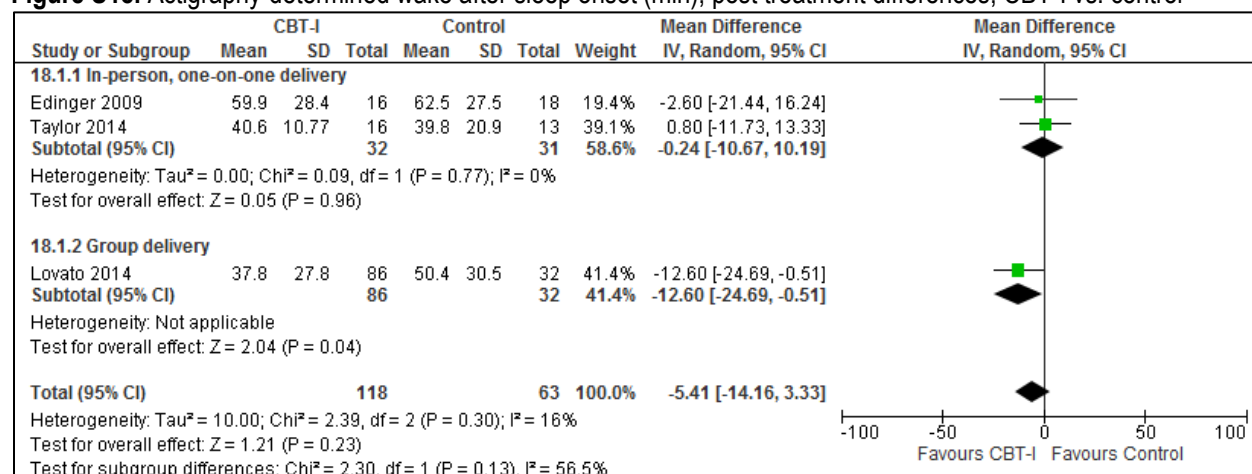
Wake after sleep onset (Act)

Figure S17. Actigraphy-determined wake after sleep onset (min), post treatment differences, CBT-I vs. control



Wake after sleep onset (Act): Insomnia and no comorbidities

Figure S18. Actigraphy-determined wake after sleep onset (min), post treatment differences, CBT-I vs. control



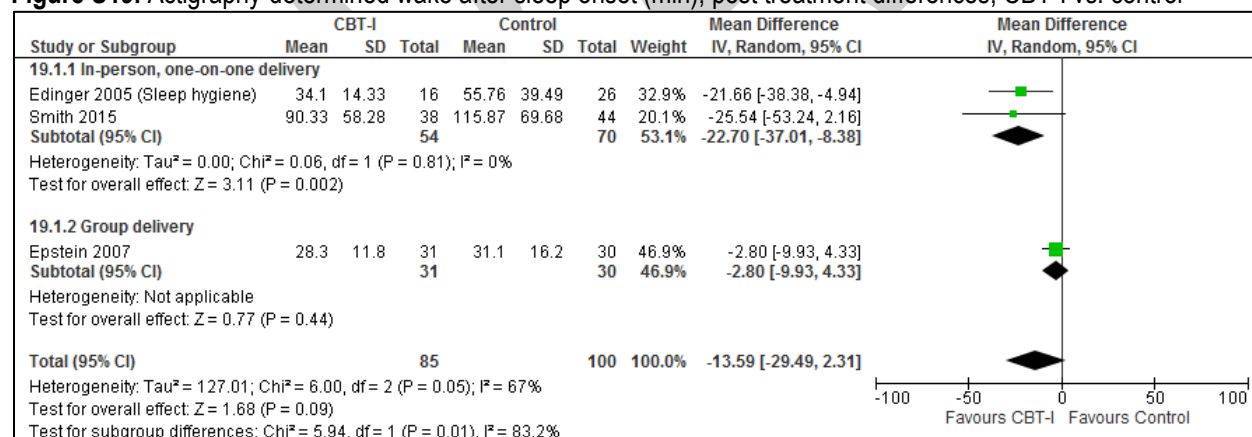
Wake after sleep onset (Act): Insomnia and comorbid psychiatric conditions

Table S7. Actigraphy-determined wake after sleep onset (min), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Talbot 2014	In-person, one-on-one delivery	104.88	80.29	29	118.84	73	16	-13.96 [-60.15, 32.23]

Wake after sleep onset (Act): Insomnia and comorbid medical conditions

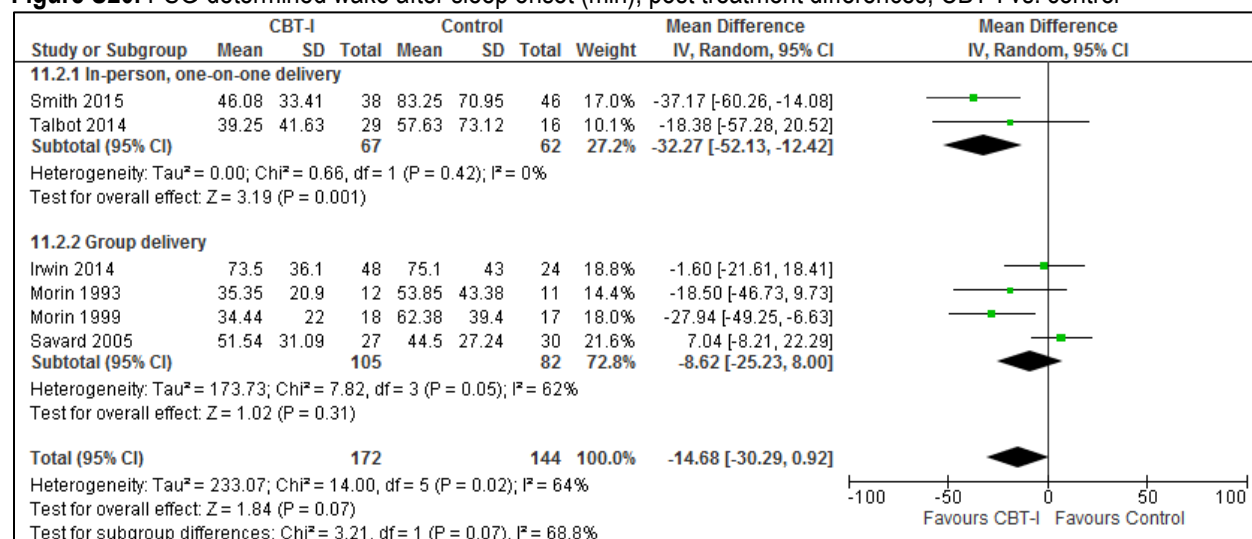
Figure S19. Actigraphy-determined wake after sleep onset (min), post treatment differences, CBT-I vs. control



*Edinger 2005 (in-person and self) pooled control data

Wake after sleep onset (PSG)

Figure S20. PSG-determined wake after sleep onset (min), post treatment differences, CBT-I vs. control



Wake after sleep onset (PSG): Insomnia and no comorbidities

Table S8. PSG-determined wake after sleep onset (min), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Morin 1993	Group delivery	35.59	20.9	12	53.85	43.38	11	-18.50[-46.73, 9.73]
Morin 1999	Group delivery	34.44	22	18	62.38	39.4	17	-27.94[-49.25, -6.63]

Wake after sleep onset (PSG): Insomnia and comorbid psychiatric conditions

Table S9. PSG-determined wake after sleep onset (min), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Talbot 2014	In-person, one-on-one delivery	39.25	41.63	29	57.63	73.12	16	-18.38[-57.28, 20.52]

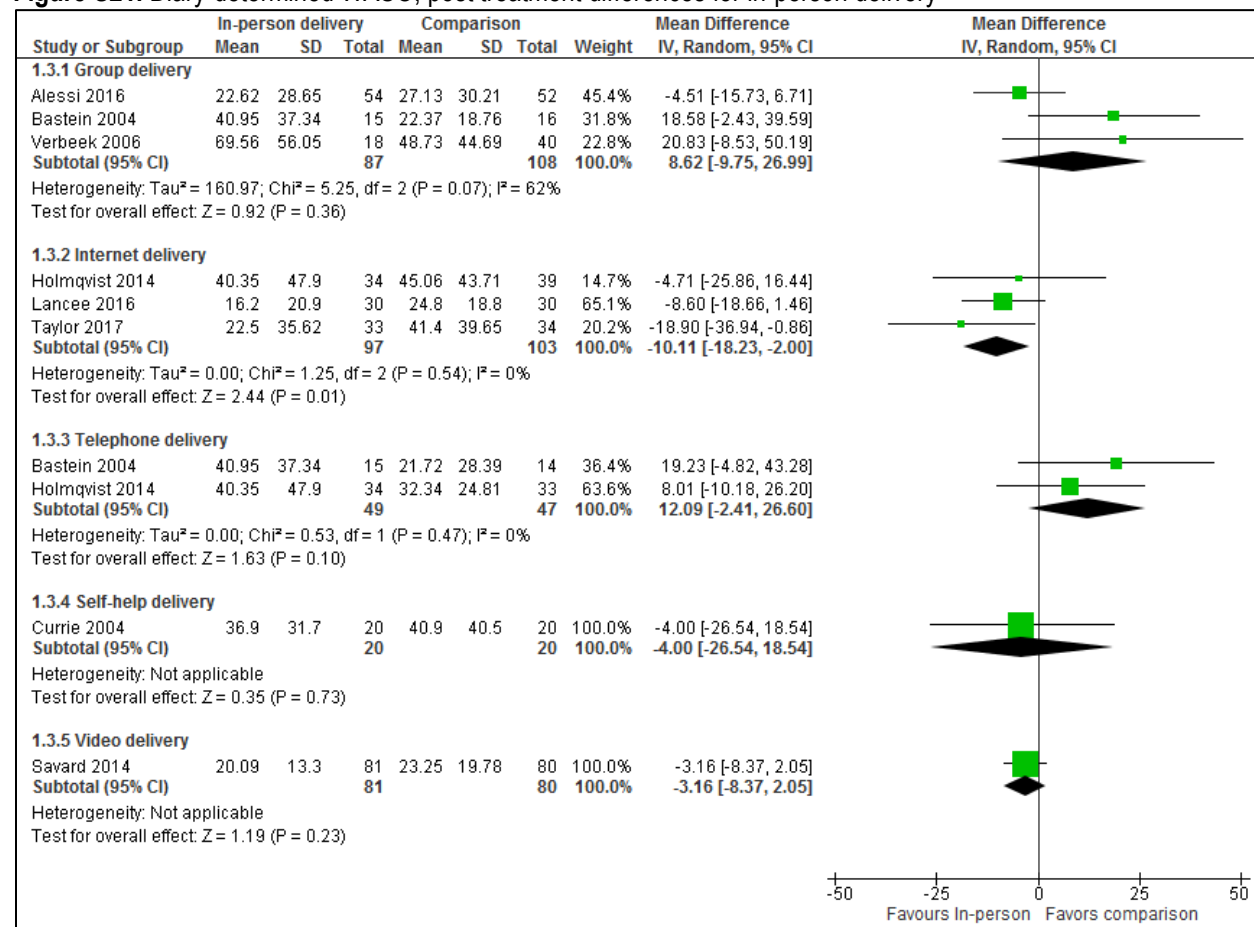
Wake after sleep onset (PSG): Insomnia and comorbid medical conditions

Table S10. PSG-determined wake after sleep onset (min), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Smith 2015	In-person, one-on-one delivery	46.08	33.41	38	83.25	70.95	46	-37.17[-60.26, -14.08]
Savard 2005	Group delivery	51.54	31.09	27	44.5	27.24	30	7.04[-8.21, 22.29]

WASO (Diary): In-person delivery vs. comparison:

Figure S21. Diary-determined WASO, post treatment differences for in-person delivery



* each subgroup of delivery method is reported separately in the results section

WASO (Act): In-person delivery vs. comparison:

Table S11. Actigraphy-determined WASO, post treatment differences for in-person delivery

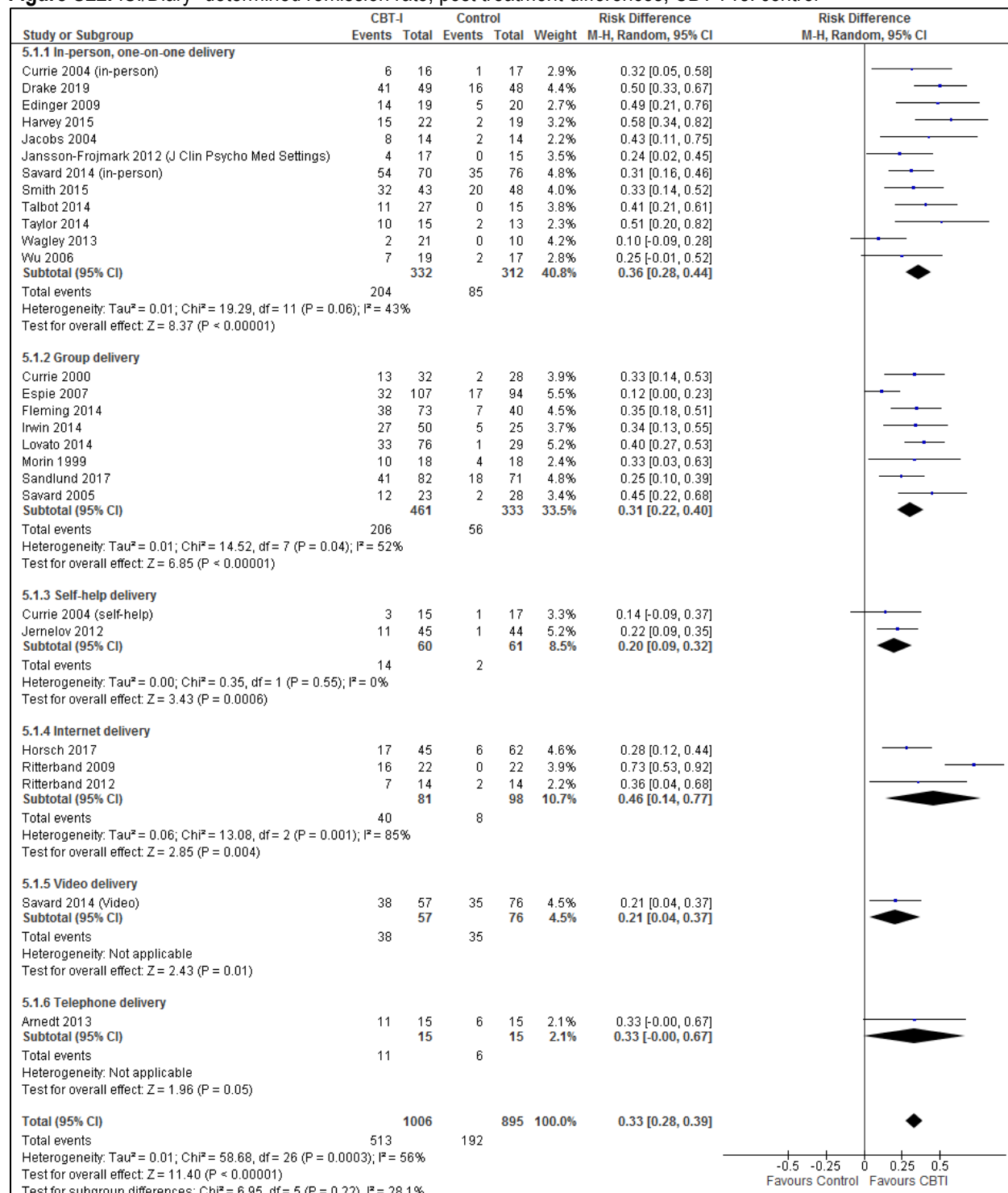
Study	In-person CBT-I			Group delivery CBT-I			Mean Difference, [95% CI]
	Mean	SD	Total	Mean	SD	Total	
Yamadera 2013	15.8	11.18	20	12.5	10.5	25	3.30[-3.10, 9.70]

Table S12. Actigraphy-determined WASO, post treatment differences for in-person delivery

Study	In-person CBT-I			Internet delivery CBT-I			Mean Difference, [95% CI]
	Mean	SD	Total	Mean	SD	Total	
Taylor 2017	49.3	22.8	33	54.1	25.07	34	-4.80 [-16.27, 6.67]

Remission rates

Figure S22. ISI/Diary -determined remission rate, post treatment differences, CBT-I vs. control

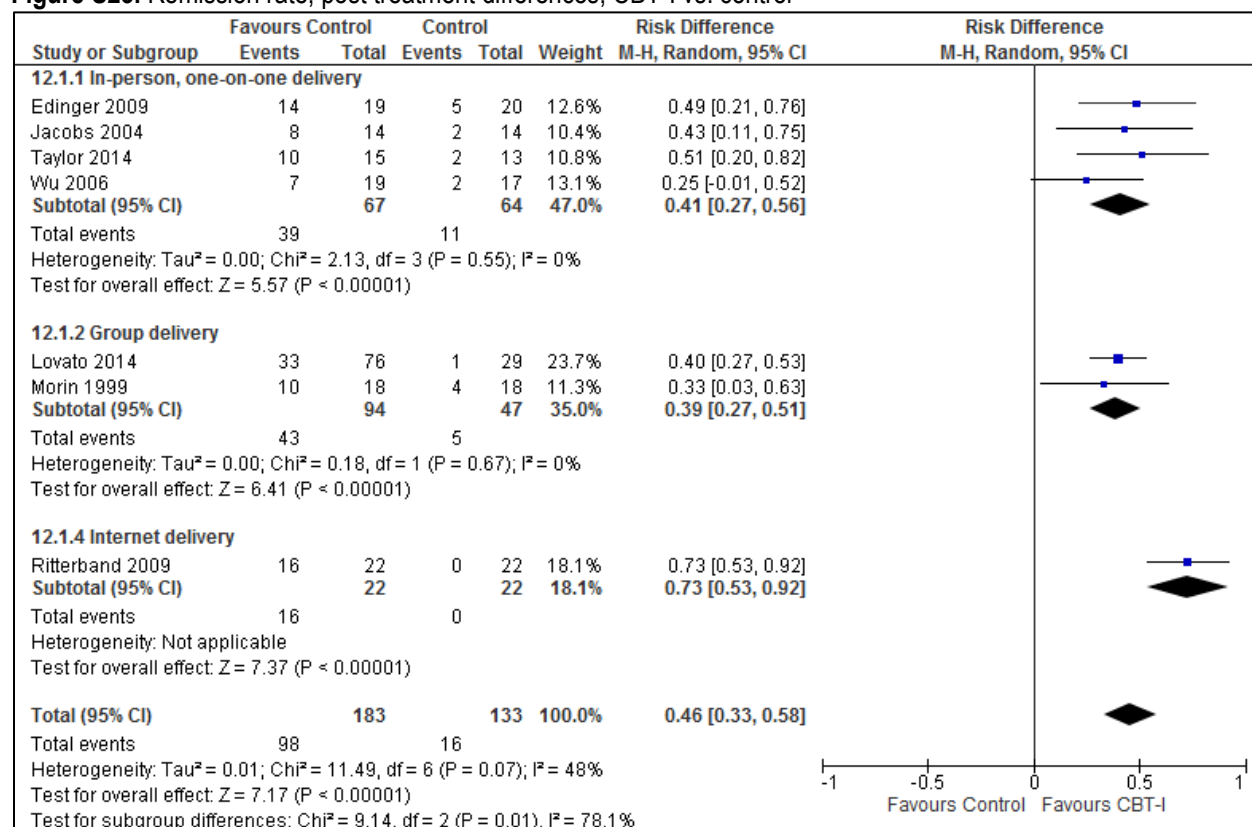


*Currie 2004 (in-person and self) uses same control data

Savard 2014 (in-person and video) uses same control data

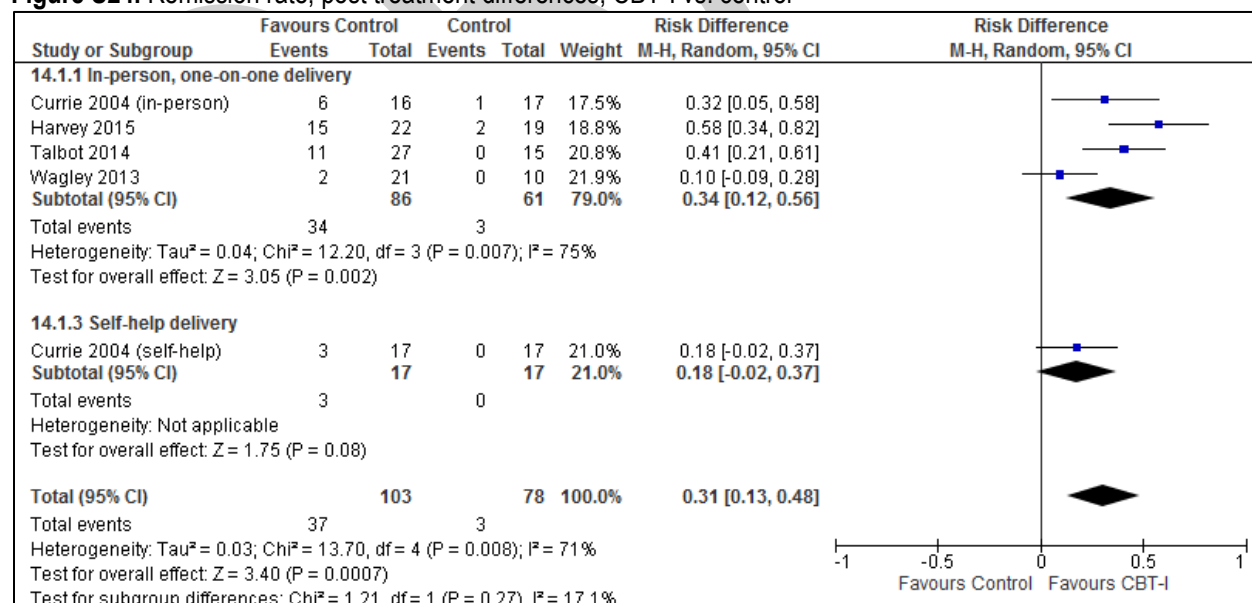
Remission rate: Insomnia and no comorbidities

Figure S23. Remission rate, post treatment differences, CBT-I vs. control



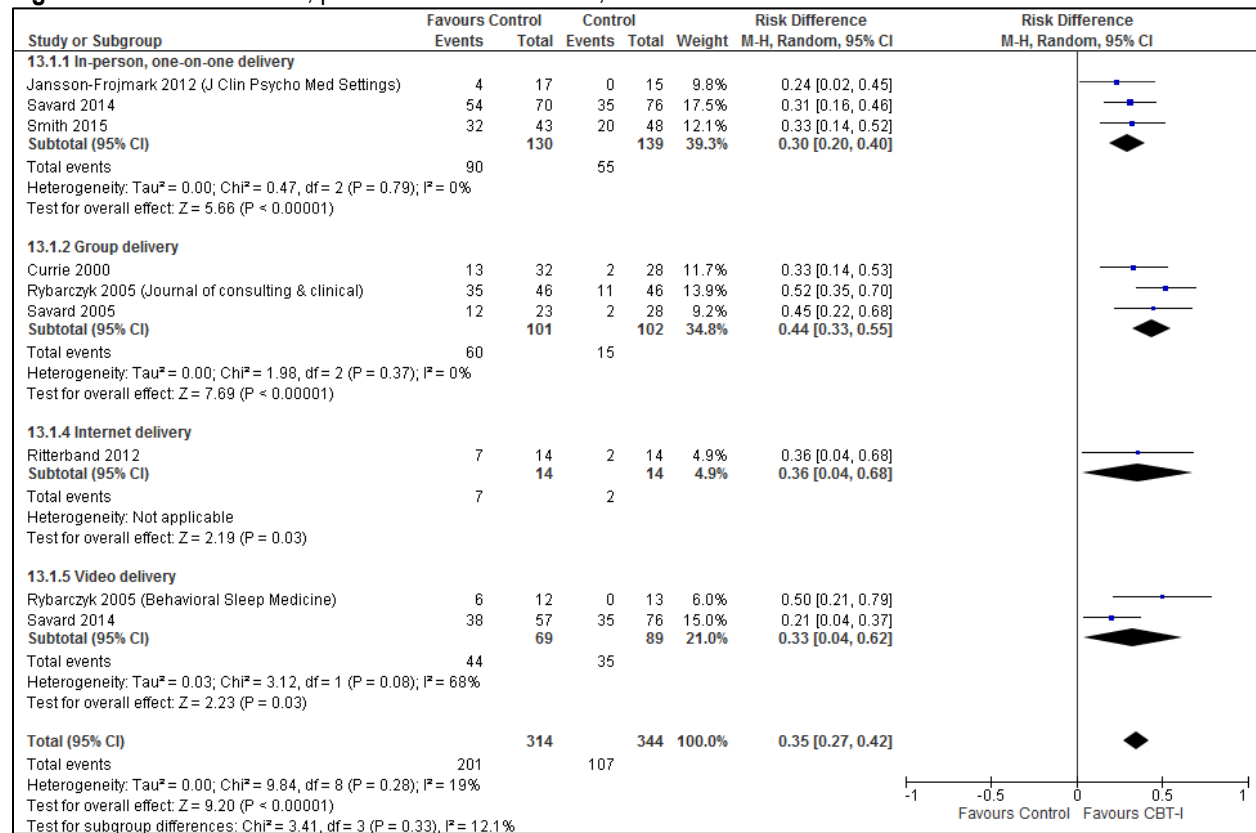
Remission rate: Insomnia and comorbid psychiatric conditions

Figure S24. Remission rate, post treatment differences, CBT-I vs. control



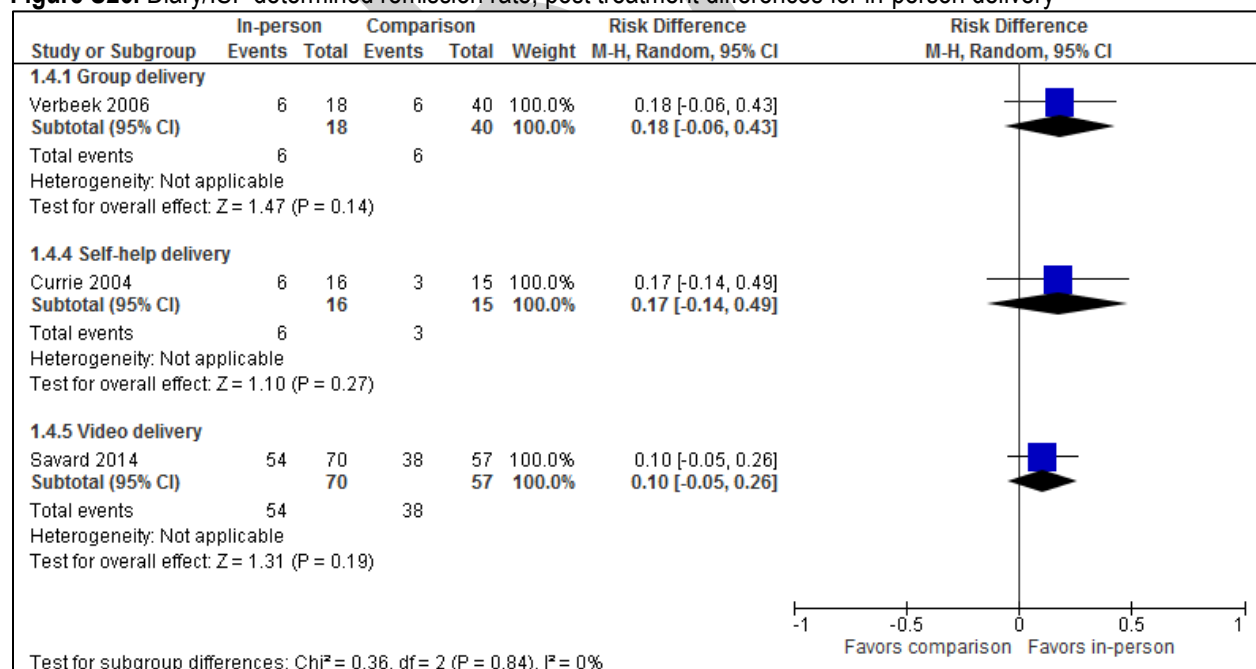
Remission rate: Comorbid medical conditions

Figure S25. Remission rate, post treatment differences, CBT-I vs. control



Remission rate: In-person delivery vs. comparison:

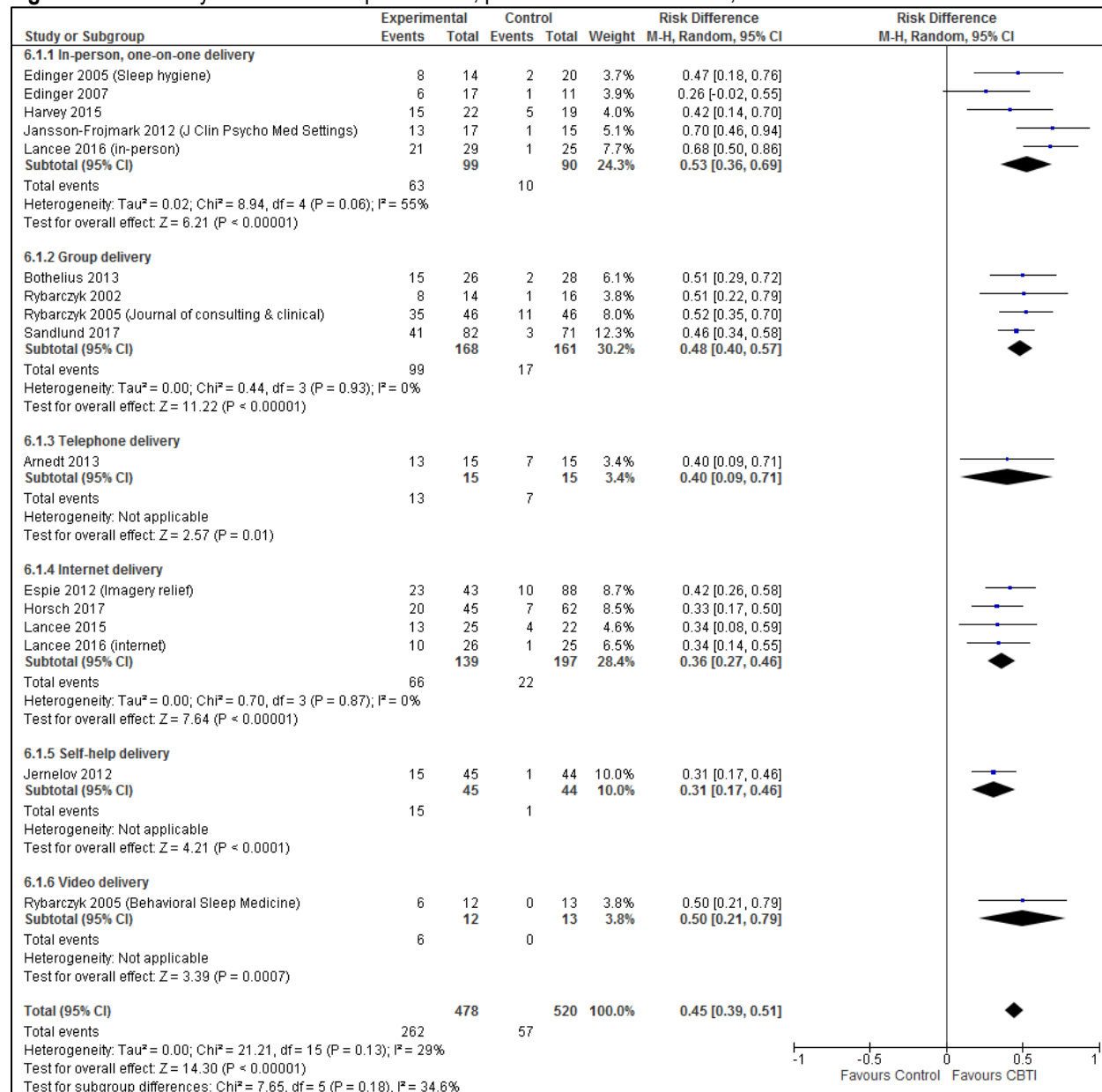
Figure S26. Diary/ISI-determined remission rate, post treatment differences for in-person delivery



* each subgroup of delivery method is reported separately in the results section

Responder rates

Figure S27. ISI/Diary -determined responder rate, post treatment differences, CBT-I vs. control



*Esple 2012 (imagery and usual care) pooled control data
 Lancee 2016 (in-person and internet) uses same control data
 Edinger 2005 (usual care and sleep hygiene) pooled control data

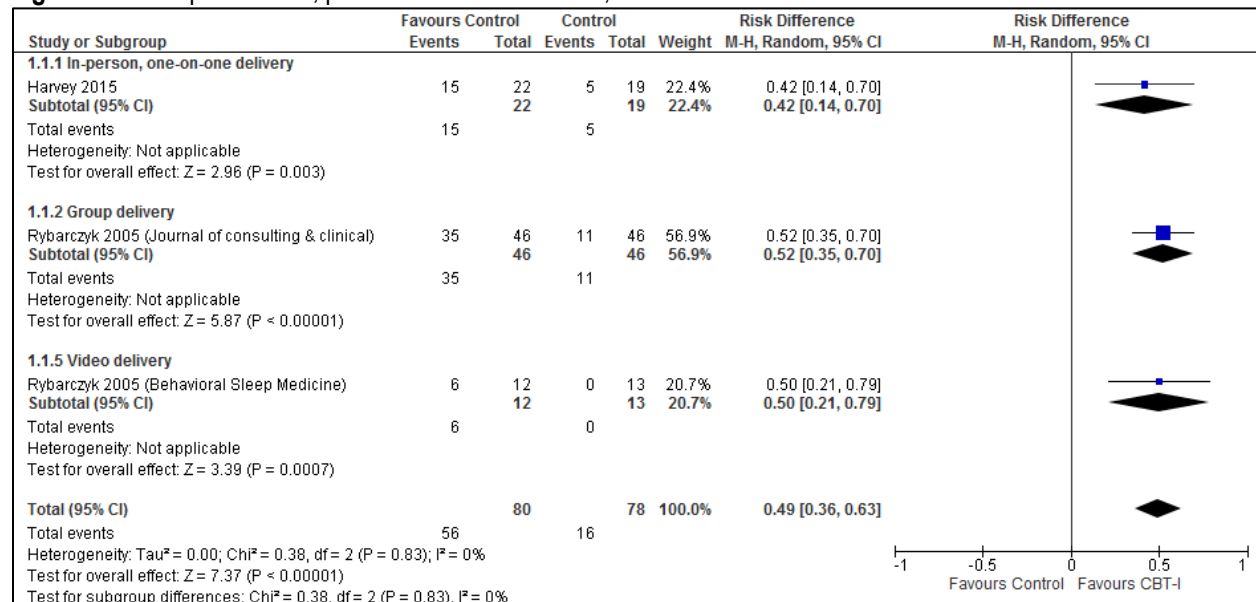
Responder rate: Insomnia and no comorbidities

Table S13. Responder rate, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I		Control		Risk Difference [95% CI]
		Events	Total	Events	Total	
Edinger 2007	In-person delivery	31	69	1	11	0.36[0.15, 0.56]

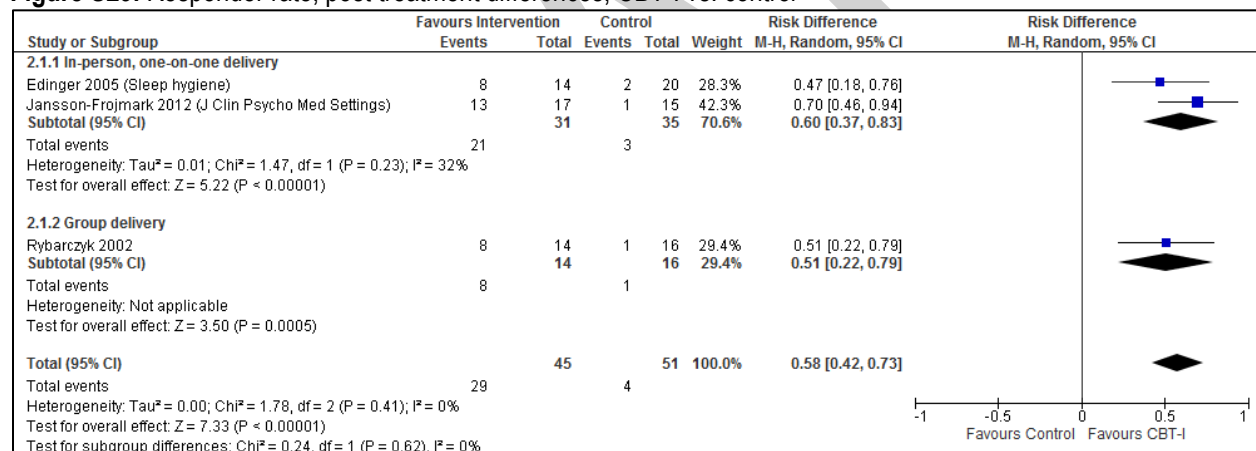
Responder rate: Comorbid insomnia to psychiatric conditions

Figure S28. Responder rate, post treatment differences, CBT-I vs. control



Responder rate: Comorbid insomnia to medical conditions

Figure S29. Responder rate, post treatment differences, CBT-I vs. control



Edinger 2005 (usual care and sleep hygiene) pooled control data

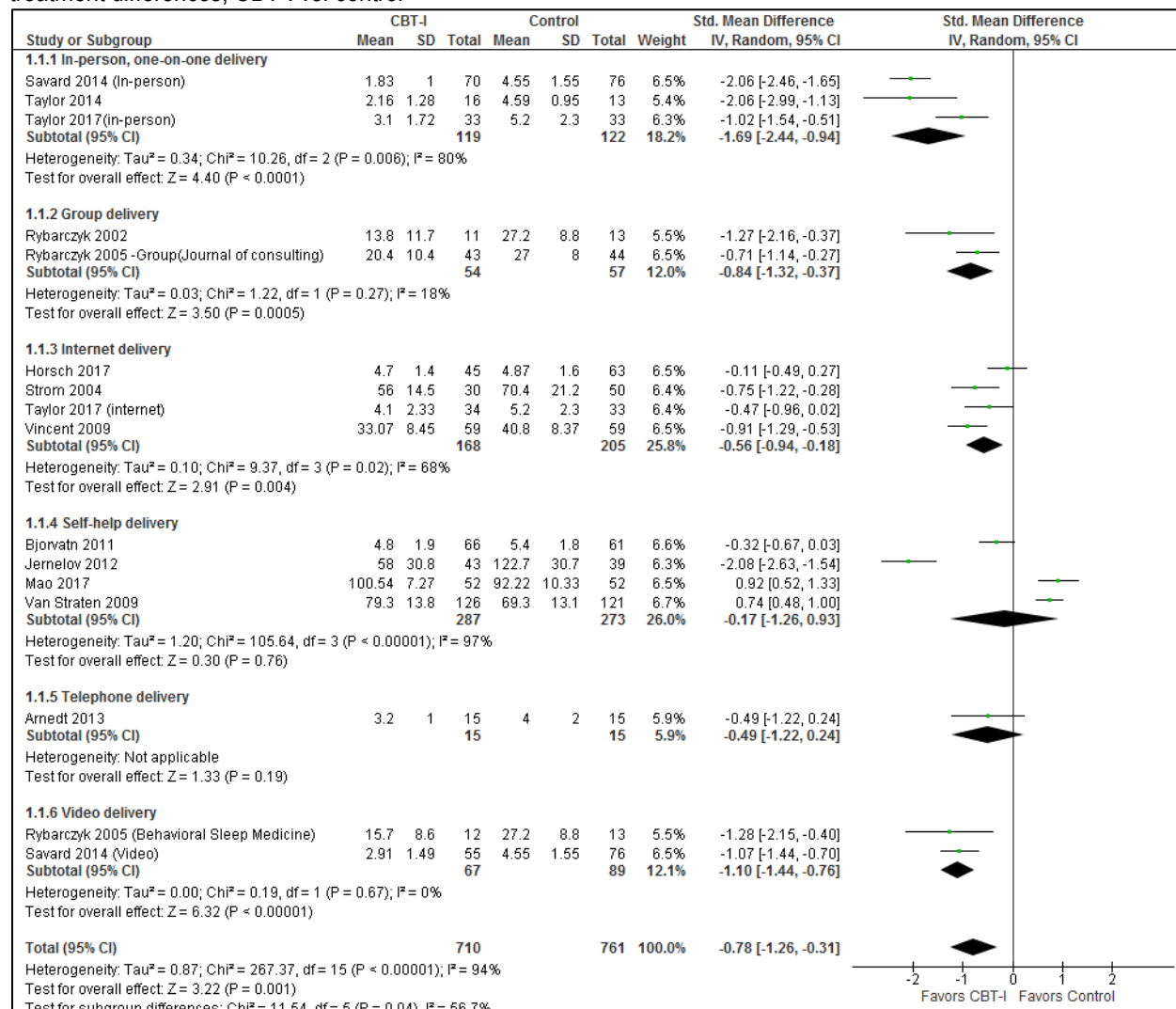
Responder rate: In-person delivery vs. comparison:

Table S14. ISI -determined remission rate, post treatment differences for in-person delivery

Study	CBT-I In-person delivery		CBT-I Internet delivery		Risk Difference [95% CI]
	Events	Total	Events	Total	
Lancee 2016	21	30	10	27	0.33[0.08, 0.57]

Beliefs and attitudes about sleep

Figure S30. Dysfunctional Beliefs and Attitudes about Sleep (DBAS)-determined beliefs and attitudes about sleep, post treatment differences, CBT-I vs. control



*Savard 2014 (in-person and video) uses same control data

*Taylor 2017 (in-person and internet) uses same control data

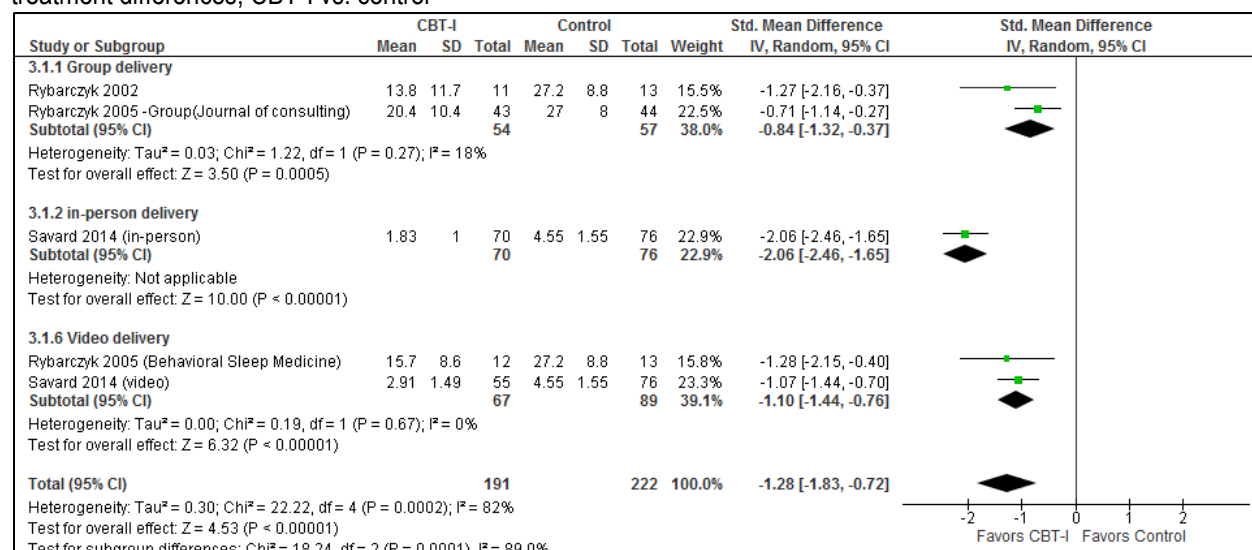
Beliefs and attitudes about sleep: Insomnia and no comorbidities

Table S15. Dysfunctional Beliefs and Attitudes about Sleep (DBAS)-determined beliefs and attitudes about sleep, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Taylor 2014	In-person delivery	2.16	1.28	16	4.59	0.95	13	-2.06[-2.99, -1.13]
Strom 2004	Internet delivery	56	14.5	30	70.4	21.2	50	-0.75[-1.22, -0.28]

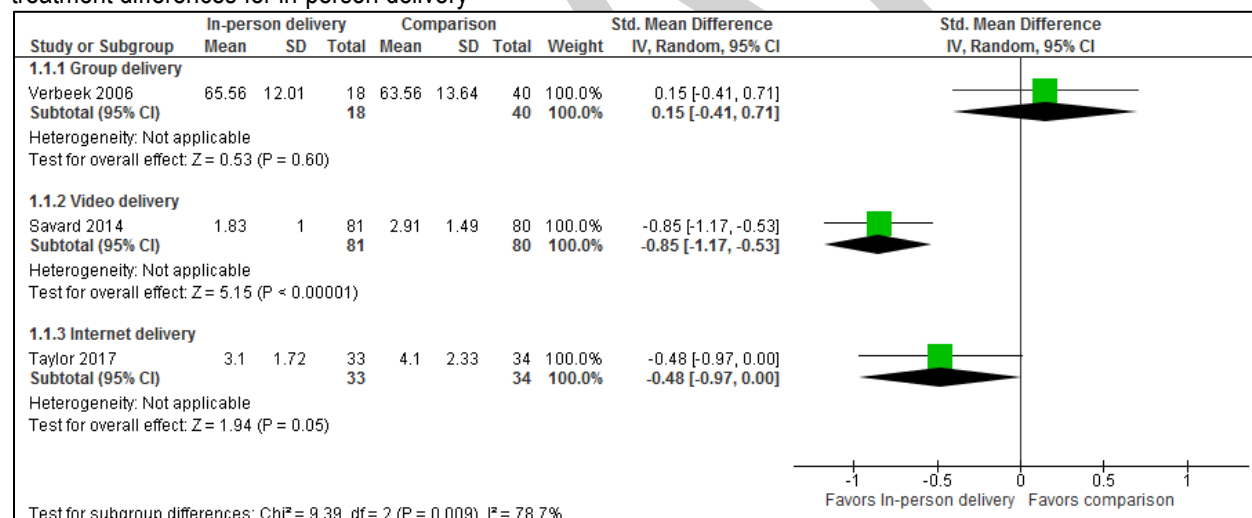
Beliefs and attitudes about sleep: Comorbid medical conditions

Figure S31. Dysfunctional Beliefs and Attitudes about Sleep (DBAS)-determined beliefs and attitudes about sleep, post treatment differences, CBT-I vs. control



Beliefs and attitudes about sleep: In-person delivery vs. comparison:

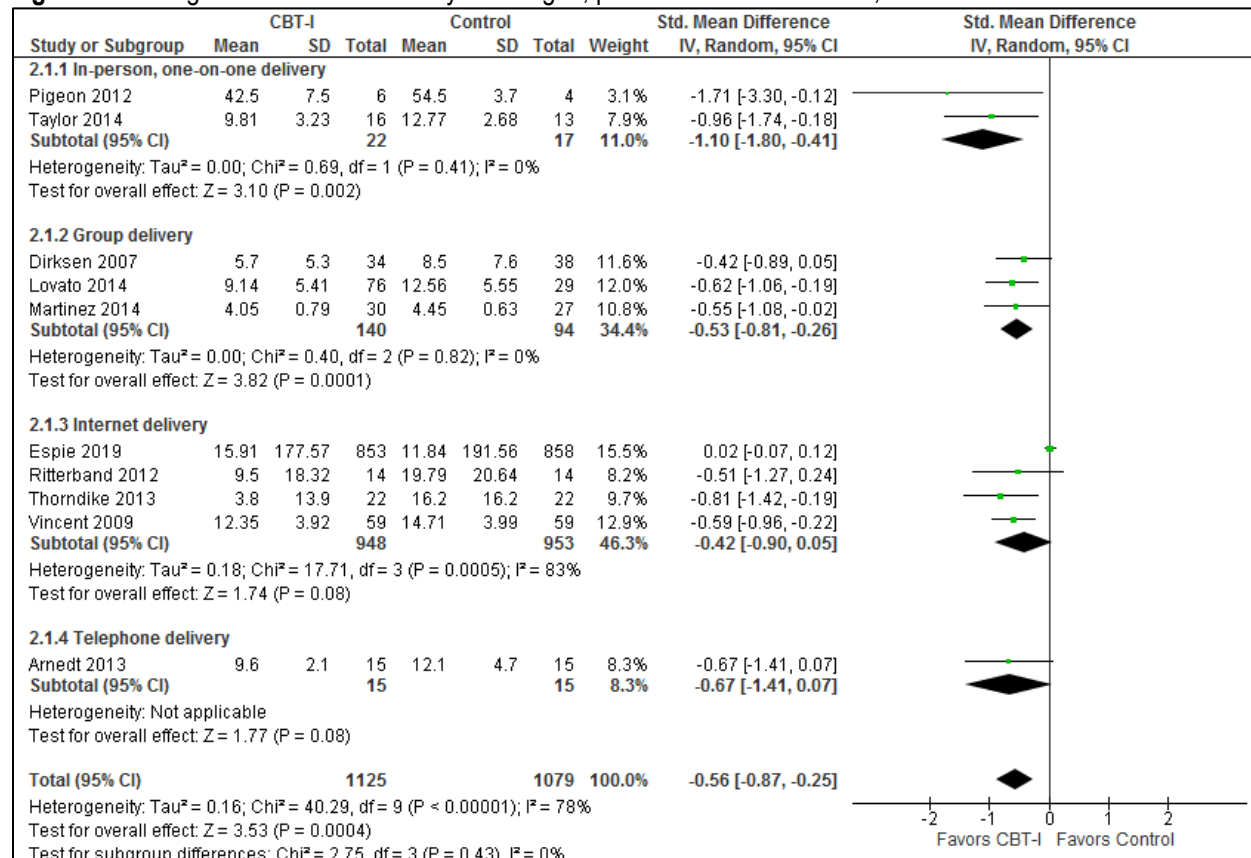
Figure S32. Dysfunctional Beliefs and Attitudes about Sleep (DBAS)-determined beliefs and attitudes about sleep, post treatment differences for in-person delivery



* each subgroup of delivery method is reported separately in the results section

Daytime Fatigue

Figure S33. Fatigue tools-determined daytime fatigue, post treatment differences, CBT-I vs. control



*Espie 2019 converted SE to SD

*Vincent 2009 converted SE to SD

Daytime Fatigue: Insomnia and no comorbidities

Table S16. Fatigue tools-determined daytime fatigue, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Taylor 2014	In-person delivery	9.81	3.23	16	12.11	2.68	13	-0.96[-1.74, -0.18]
Lovato 2014	Group delivery	9.14	5.41	76	12.56	5.55	29	-0.62[-1.06, -0.19]

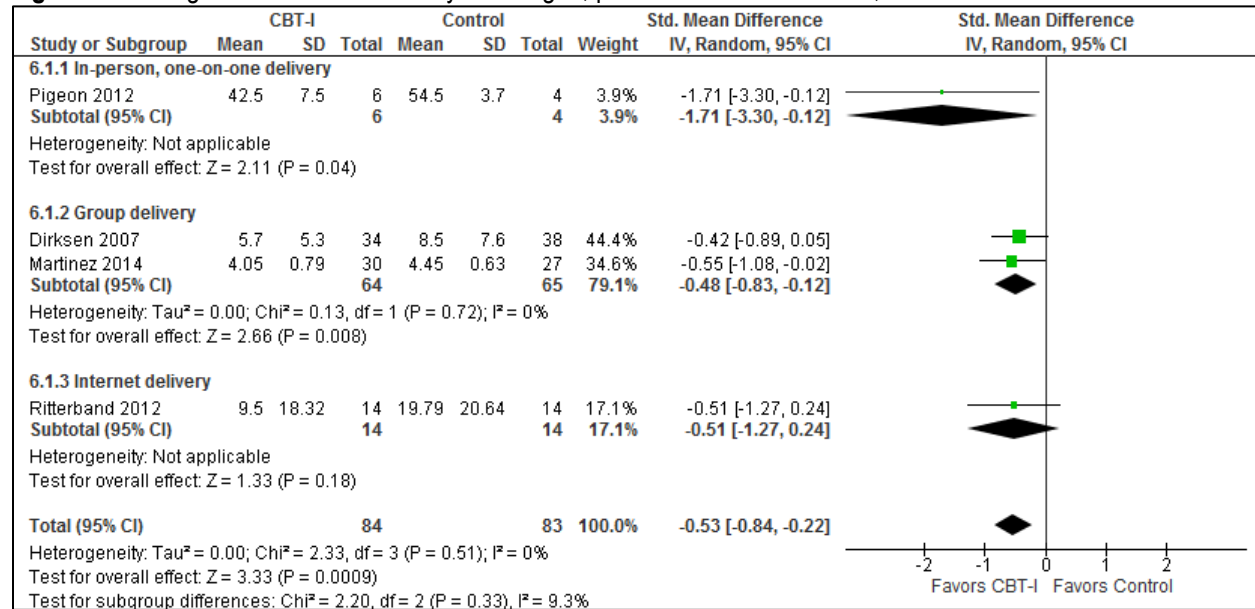
Daytime Fatigue: Insomnia and comorbid psychiatric conditions

Table S17. Fatigue tools-determined daytime fatigue, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Thorndike2013	Internet delivery	3.8	13.9	22	16.18	16.16	22	-0.81[-1.42, -0.19]

Daytime Fatigue: Comorbid medical conditions

Figure S34. Fatigue tools-determined daytime fatigue, post treatment differences, CBT-I vs. control



Daytime fatigue: In-person delivery vs. comparison:

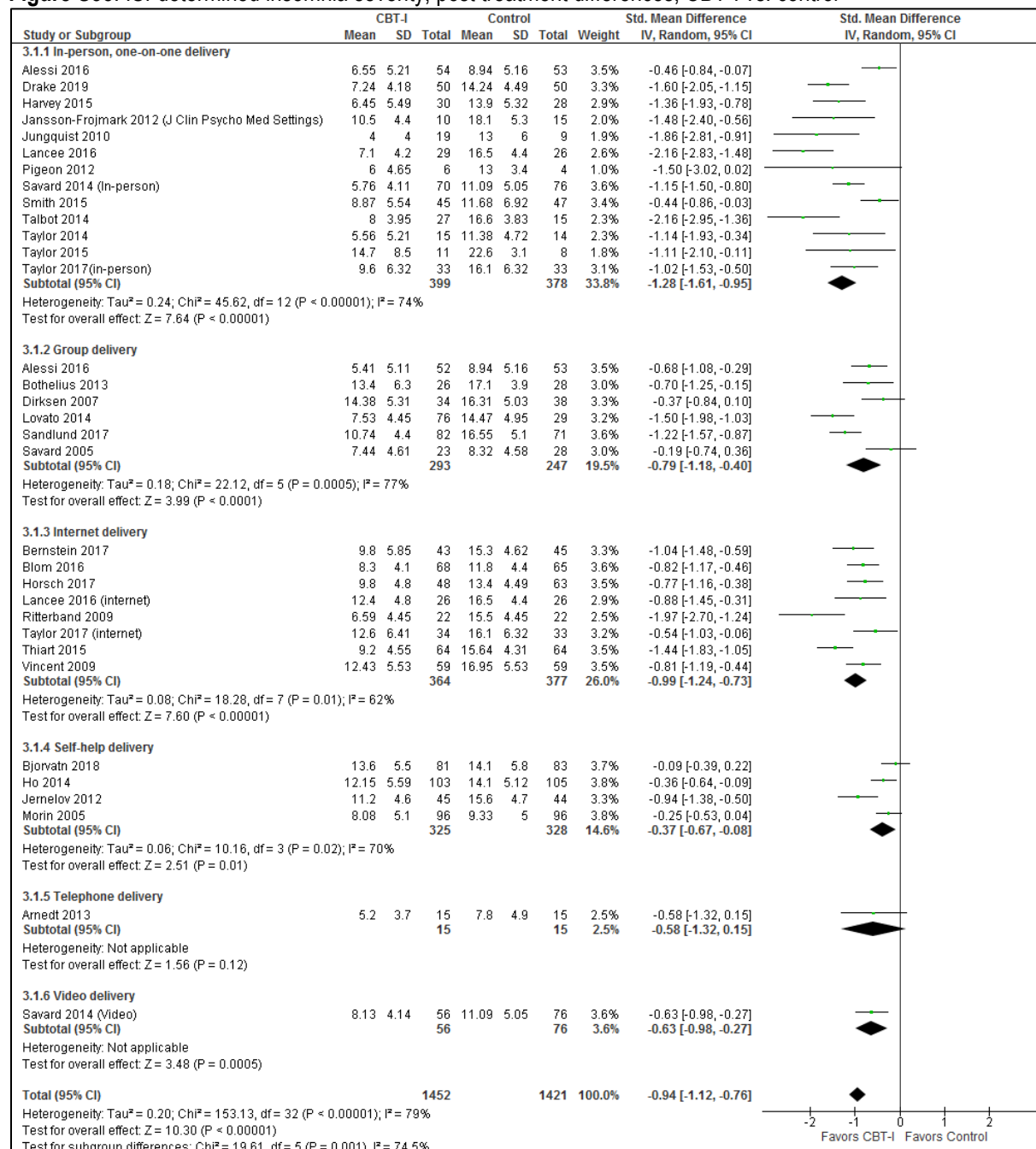
Table S18. Diary-determined quality of sleep, post treatment differences for in-person delivery

Study	CBT-I In-person delivery			CBT-I Internet			Std. Mean Difference, [95% CI]
	Mean	SD	Total	Mean	SD	Total	
Holmqvist 2014	12.65	4.72	32	13.53	5.24	38	-0.17[-0.64, 0.30]

Study	CBT-I In-person delivery			CBT-I Telehealth delivery			Std. Mean Difference, [95% CI]
	Mean	SD	Total	Mean	SD	Total	
Holmqvist 2014	12.65	4.72	32	12.5	4.75	32	0.03[-0.46, 0.52]

Insomnia severity

Figure S35. ISI-determined insomnia severity, post treatment differences, CBT-I vs. control



*Lancee 2016 (in-person and internet) uses same control data

*Savard 2014 (in-person and video) uses same control data

*Taylor 2017 (in-person and internet) uses same control data

*Bernstein 2017 SD calculated from CI

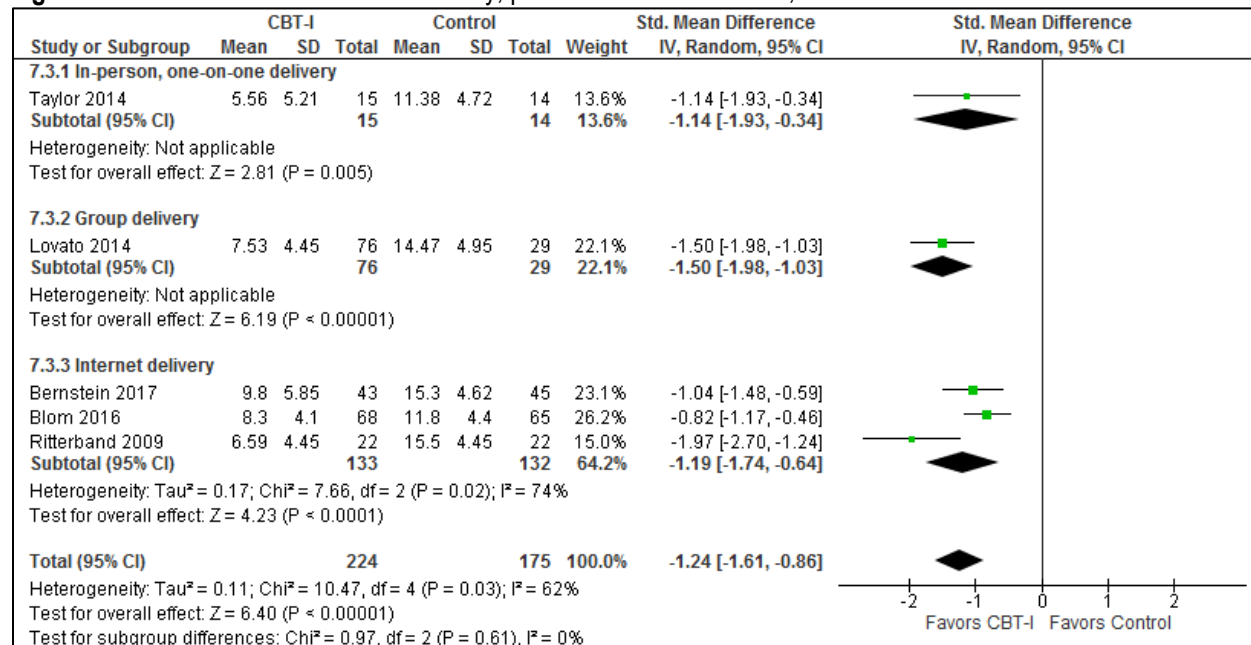
*Morin 2005 SD calculated from CI

*Alessi 2016 (in-person and group use same control data) SD calculated from SE

*Ritterband 2009 SD calculated from CI

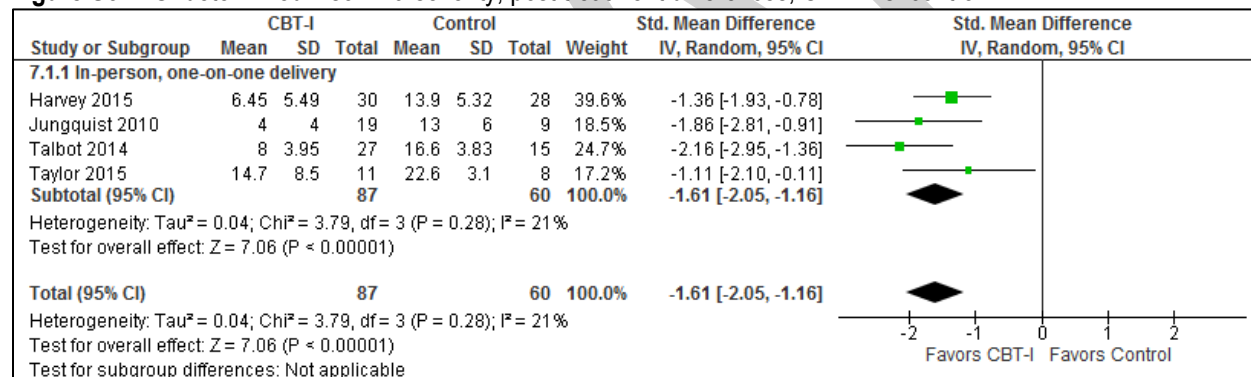
Insomnia severity: Insomnia and no comorbidities

Figure S36. ISI-determined insomnia severity, post treatment differences, CBT-I vs. control



Insomnia severity: Insomnia and comorbid psychiatric conditions

Figure S37. ISI-determined insomnia severity, post treatment differences, CBT-I vs. control



Insomnia severity: Comorbid medical conditions

Figure S38. ISI-determined insomnia severity, post treatment differences, CBT-I vs. control

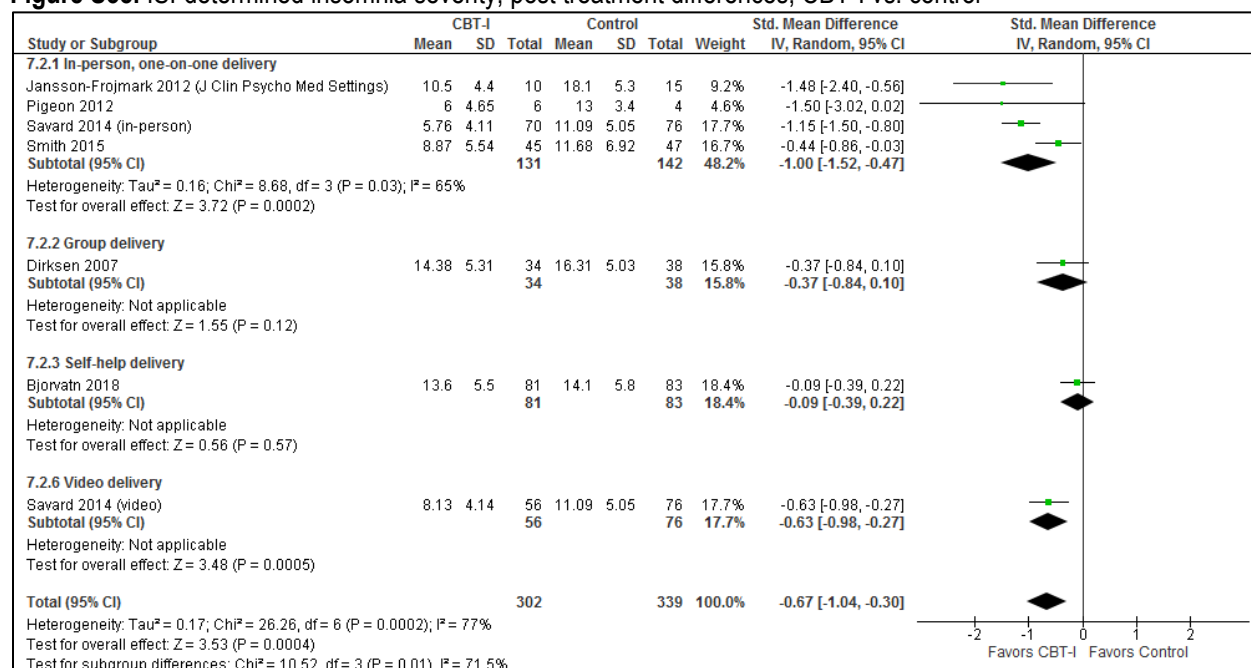
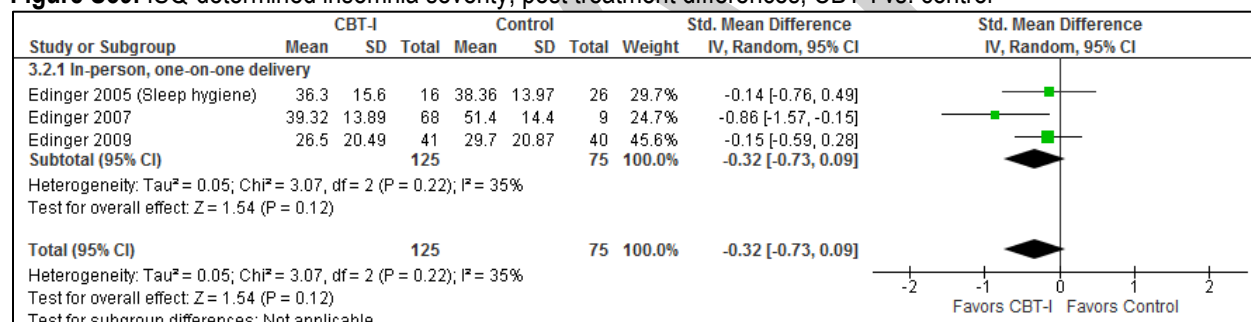


Figure S39. ISQ-determined insomnia severity, post treatment differences, CBT-I vs. control



*Edinger 2005 usual care and sleep hygiene data pooled

Insomnia severity: Insomnia and no comorbidities

Table S19 ISQ-determined insomnia severity, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2007	In-person delivery	39.32	13.89	68	51.4	14.4	9	-0.86[-1.57, -0.15]
Edinger 2009	In-person delivery	26.5	20.49	41	29.7	20.87	40	-0.15[-0.59, 0.28]

Insomnia severity: Comorbid medical conditions

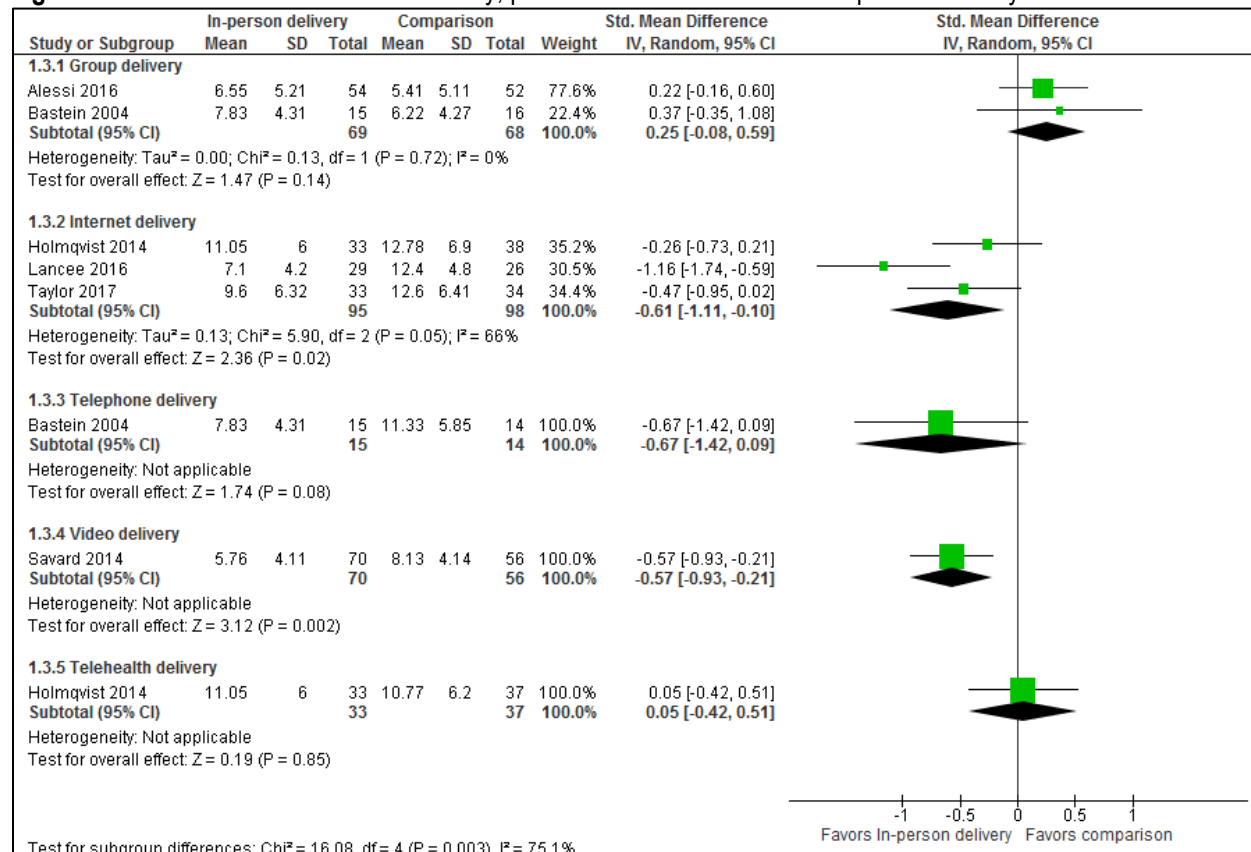
Table S20. ISQ-determined insomnia severity, post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person delivery	36.3	15.6	16	38.36	13.97	26	-0.14[-0.76, -0.49]

*pooled data of sleep hygiene and usual care groups

Insomnia severity: In-person delivery vs. comparison:

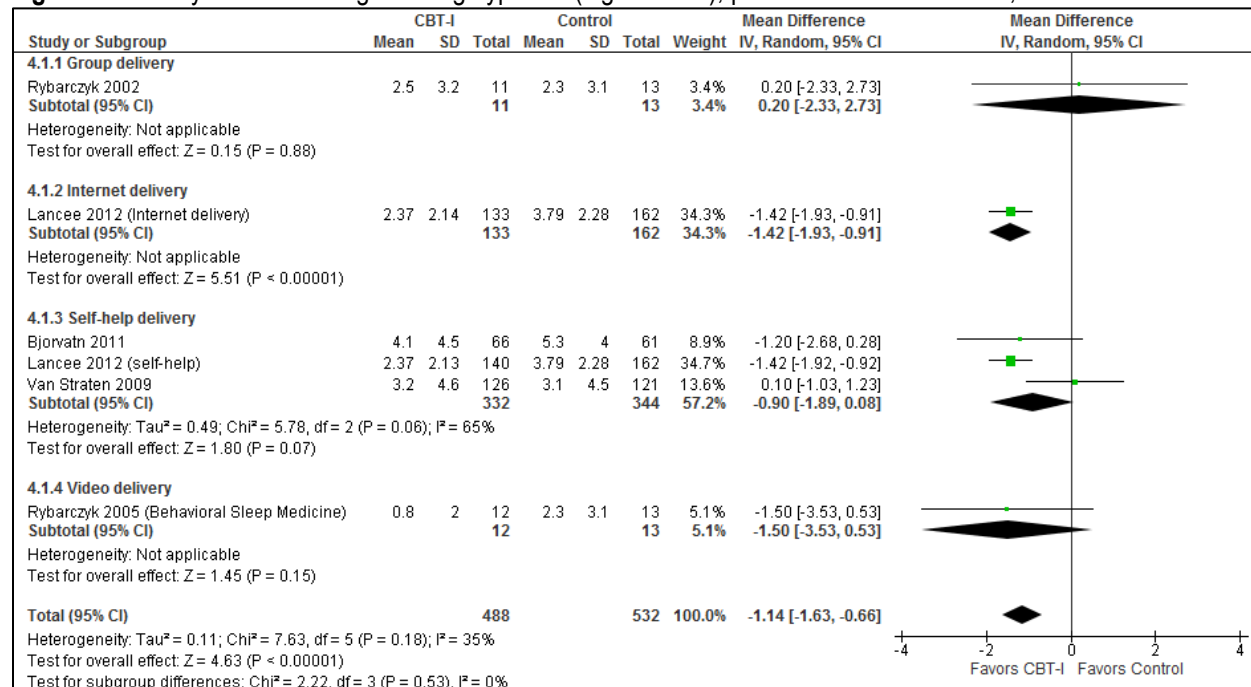
Figure S40. ISI-determined insomnia severity, post treatment differences for in-person delivery



* each subgroup of delivery method is reported separately in the results section

Nights using hypnotics

Figure S41. Diary-determined nights using hypnotics(nights/week), post treatment differences, CBT-I vs. control



*Lancee 2012 (internet and self-help) uses same control data

Nights using hypnotics: Insomnia and no comorbidities

Table S21. Diary-determined number of awakenings (no./night), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Morin 1993	Group delivery	2.5	3.2	11	2.3	3.1	13	0.20[-2.33, 2.73]

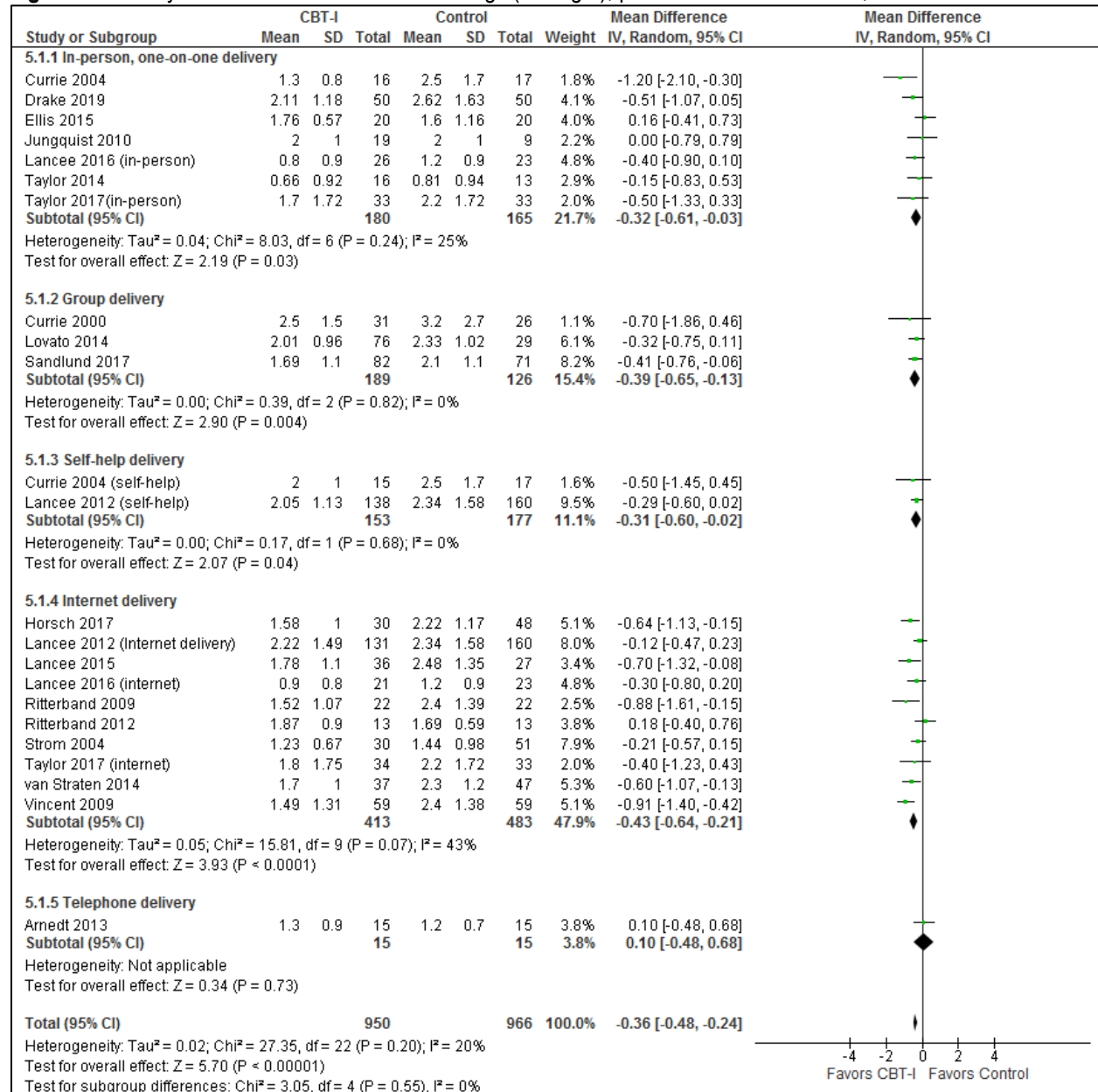
Nights using hypnotics: Insomnia and comorbid psychiatric conditions

Table S22. Diary-determined number of awakenings (no./night), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Rybarczyk 2005	Video Delivery	0.8	2	12	2.3	3.1	13	-1.50[-3.53, 0.53]

Number of awakenings

Figure S42. Diary-determined number of awakenings (no./night), post treatment differences, CBT-I vs. control



*Currie 2004 (in-person and self-help) uses same control data

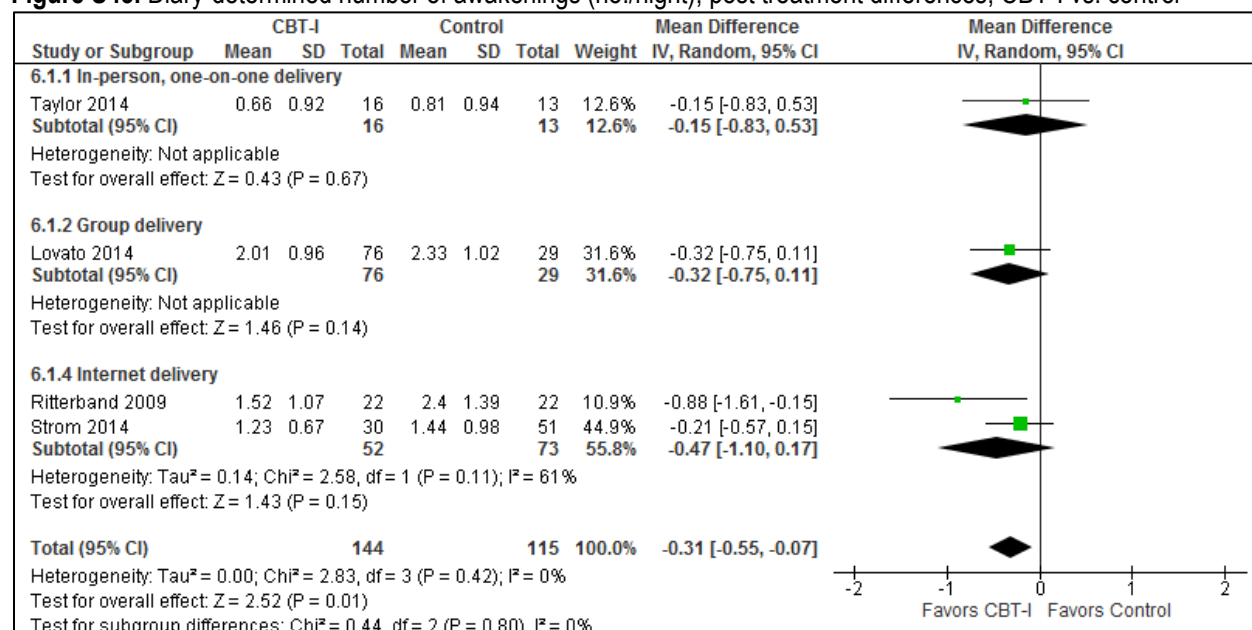
Lancee 2012 (internet and self-help) uses same control data

Lancee 2016 (in-person and internet) uses same control data

*Taylor 2017 (in-person and internet) uses same control data

Number of awakenings: Insomnia and no comorbidities

Figure S43. Diary-determined number of awakenings (no./night), post treatment differences, CBT-I vs. control



Number of awakenings: Insomnia and comorbid psychiatric conditions

Table S23. Diary-determined number of awakenings (no./night), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Currie 2004	In-person delivery	1.64	0.9	31	2.5	1.7	17	-0.86[-1.73, 0.01]
Jungquist 2010	In-person delivery	2	1	19	2	1	9	0.00[-0.79, 0.79]

*Currie 2004 (self-help and in-person) pooled data

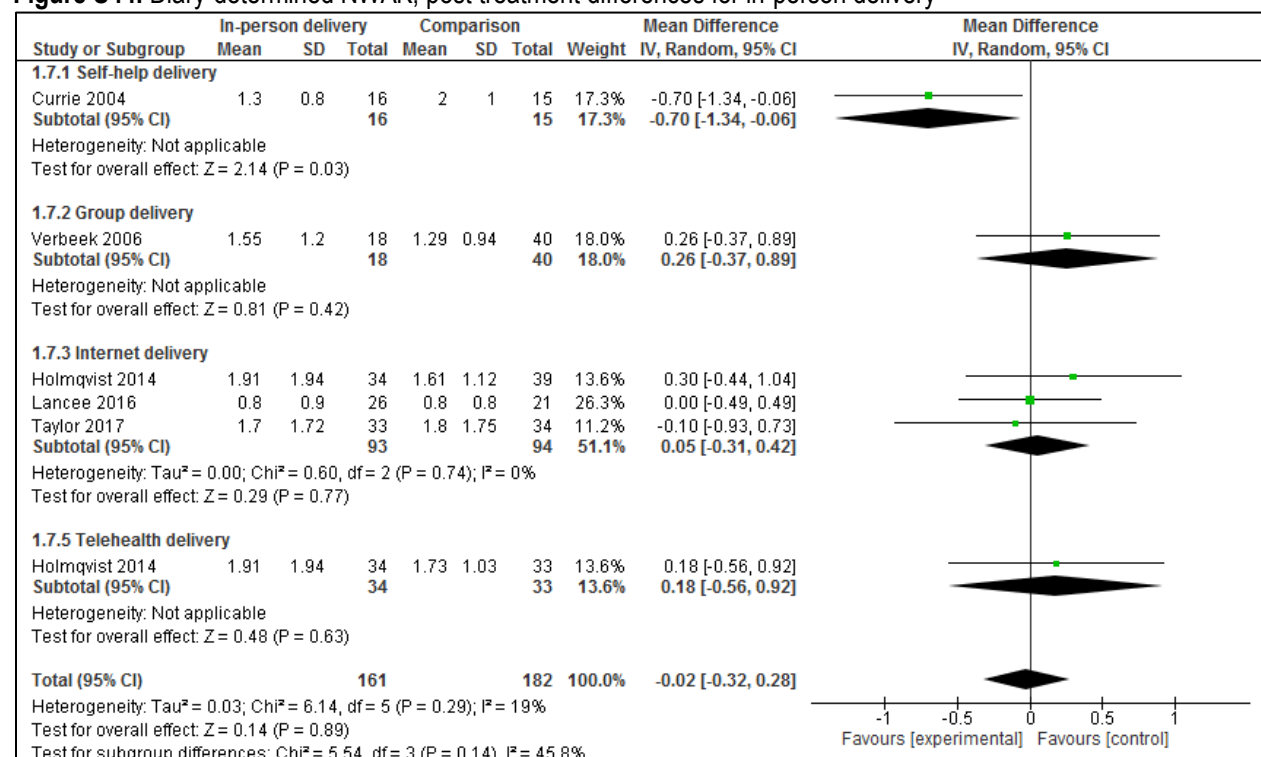
Number of awakenings: Comorbid medical conditions

Table S24. Diary-determined number of awakenings (no./night), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Currie 2000	group delivery	2.5	1.5	31	3.2	2.7	26	-0.70[-1.86, 0.46]
Ritterband 2012	internet delivery	1.87	0.9	13	1.69	0.59	13	0.18[-0.40, 0.76]

Number of awakenings: In-person delivery vs. comparison:

Figure S44. Diary-determined NWAK, post treatment differences for in-person delivery

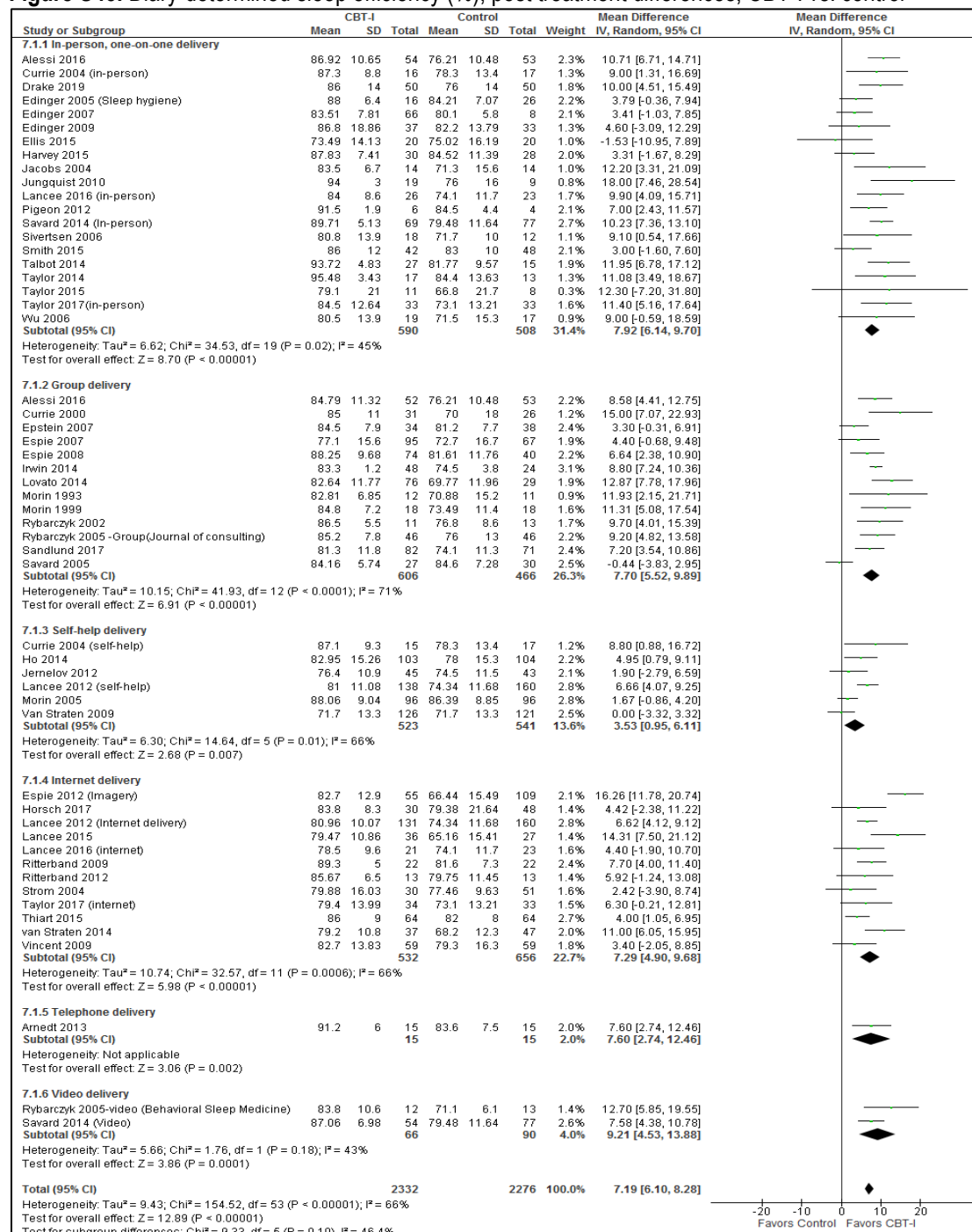


* each

subgroup of delivery method is reported separately in the results section

Sleep efficiency

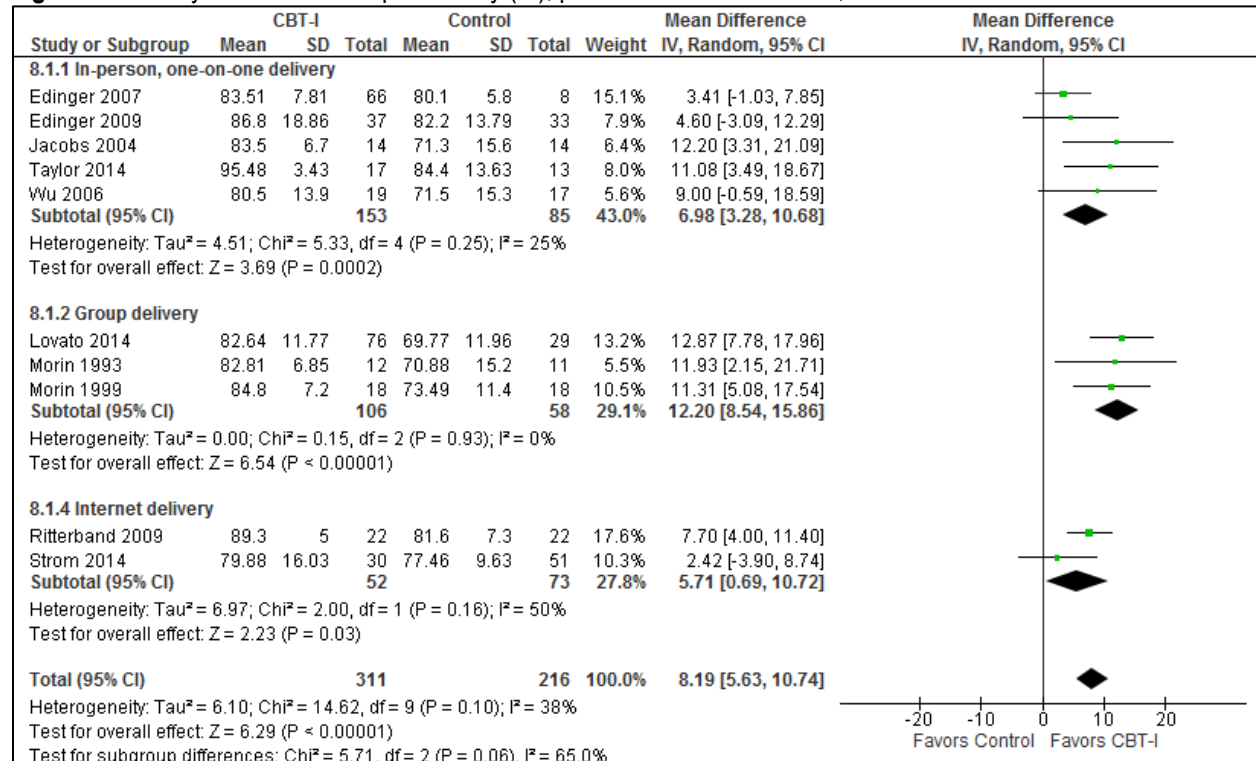
Figure S45. Diary-determined sleep efficiency (%), post treatment differences, CBT-I vs. control



*Currie 2004 (in-person and self-help) uses same control data
 Edinger 2005 usual and sleep hygiene pooled control data
 Lancee 2012 (internet and self-help) uses same control data
 Lancee 2016 (in-person and internet) uses same control data
 Savard 2014 (in-person and video) uses same control data
 Espie 2012 (imagery and usual care pooled control data
 Taylor 2017 (in-person and internet) uses same control data, converted SE to SD
 Morin 2005 SD calculated from 95% CI
 Alessi 2016 (in-person and group) uses same control data, converted SE to SD

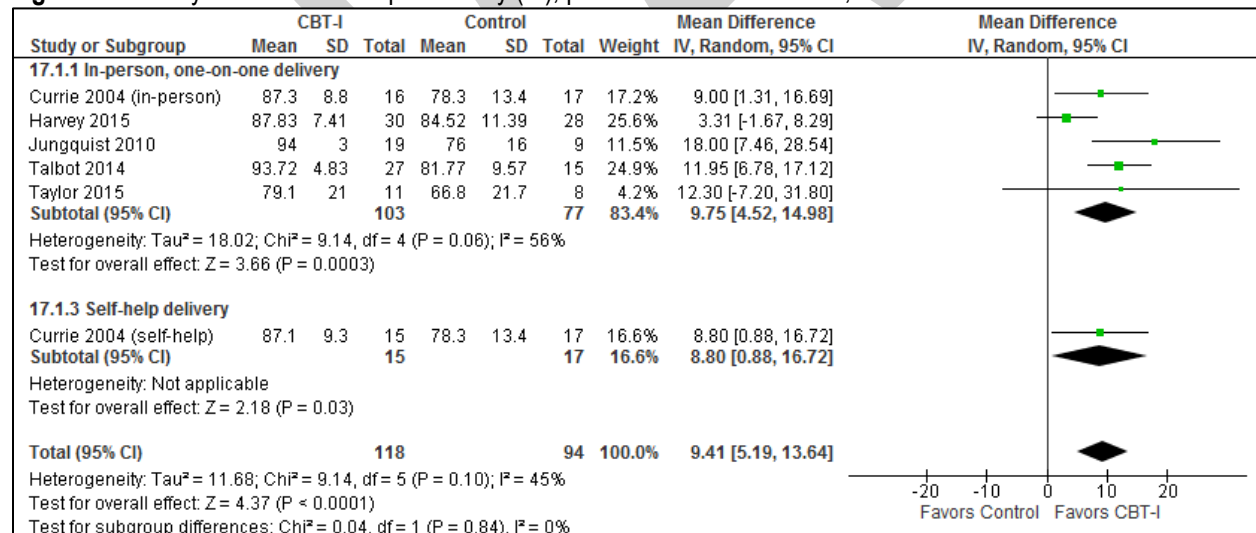
Sleep efficiency (Diary): Insomnia and no comorbidities

Figure S46. Diary-determined sleep efficiency (%), post treatment differences, CBT-I vs. control



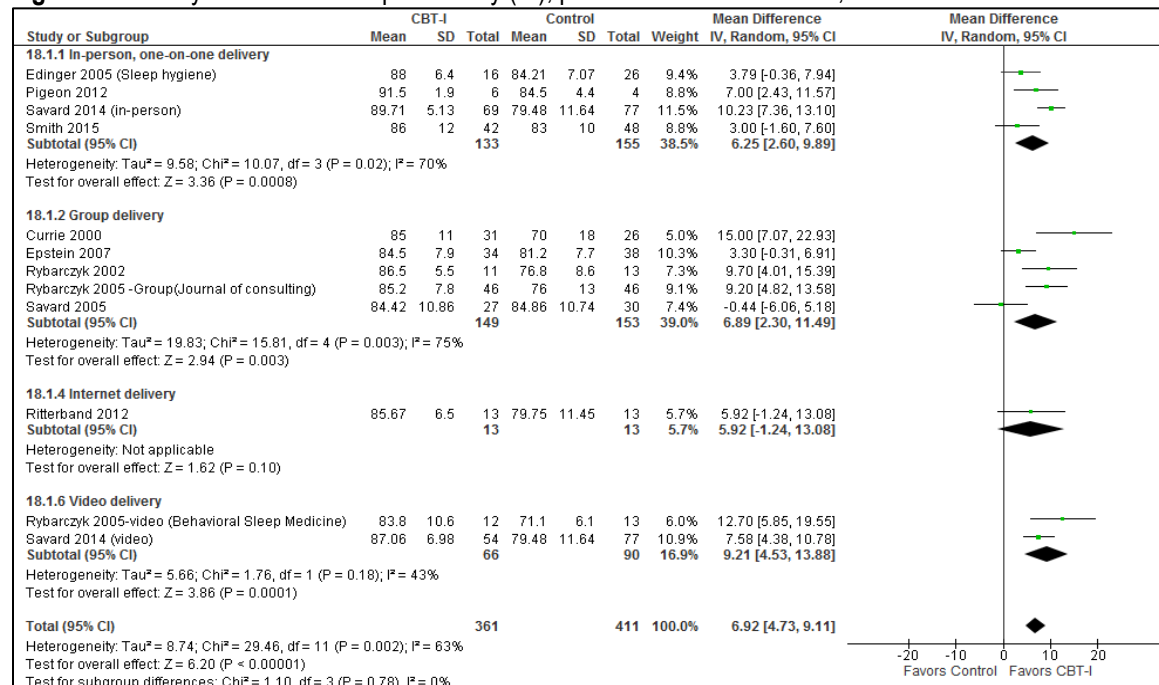
Sleep efficiency (Diary): Insomnia and comorbid psychiatric conditions

Figure S47. Diary-determined sleep efficiency (%), post treatment differences, CBT-I vs. control



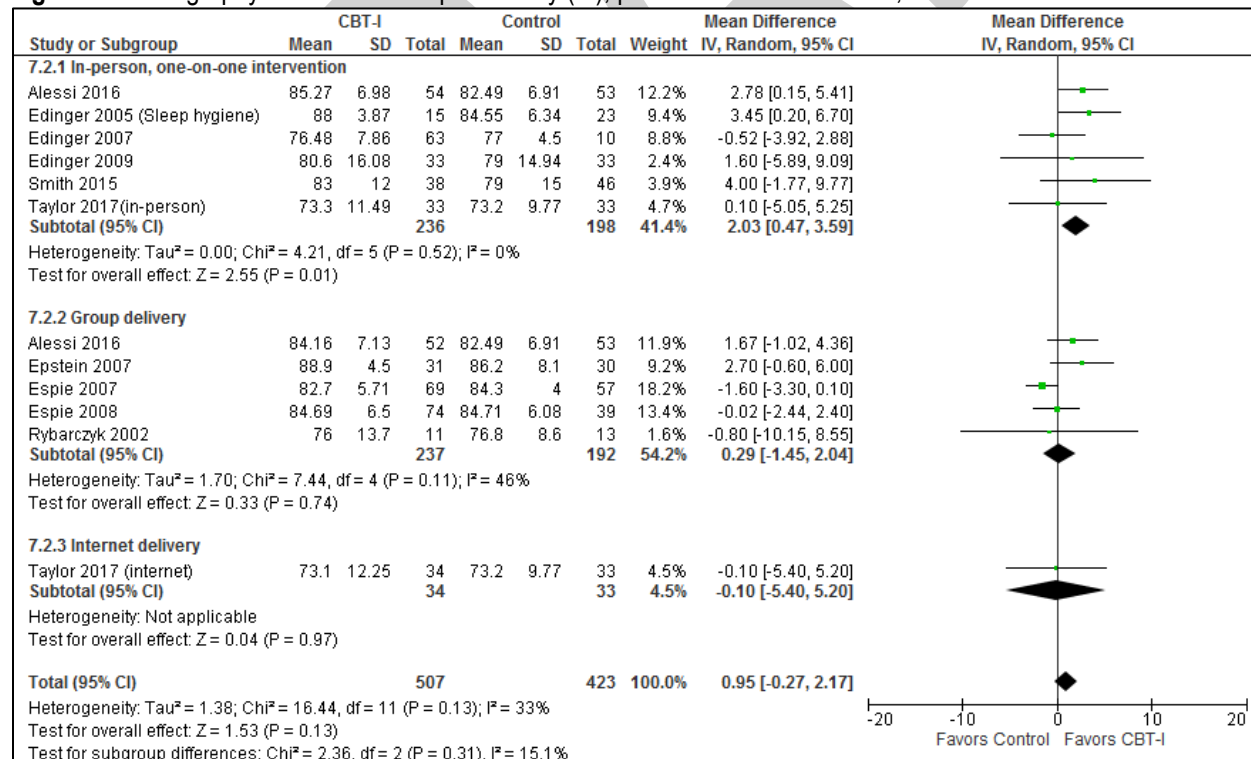
Sleep efficiency (Diary): Comorbid medical insomnia

Figure S48. Diary-determined sleep efficiency (%), post treatment differences, CBT-I vs. control



*pooled control data (usual care and sleep hygiene) for Edinger 2005

Figure S49. Actigraphy-determined sleep efficiency (%), post treatment differences, CBT-I vs. control



* Edinger 2005 (usual and sleep hygiene control data pooled) converted SE to SD
Taylor 2017 (in-person and internet) uses same control data, converted SE to SD
Alessi 2016 (in-person and group) uses same control data, converted SE to SD

Sleep efficiency (Act): Insomnia and no comorbidities

Table S25. Act-determined sleep efficiency (%), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2007	In-person, one-on-one	76.48	7.86	63	77	4.5	10	-0.52[-3.92, 2.88]
Edinger 2009	In-person, one-on-one	80.6	16.08	33	79	14.94	33	1.60[-5.89, 9.09]

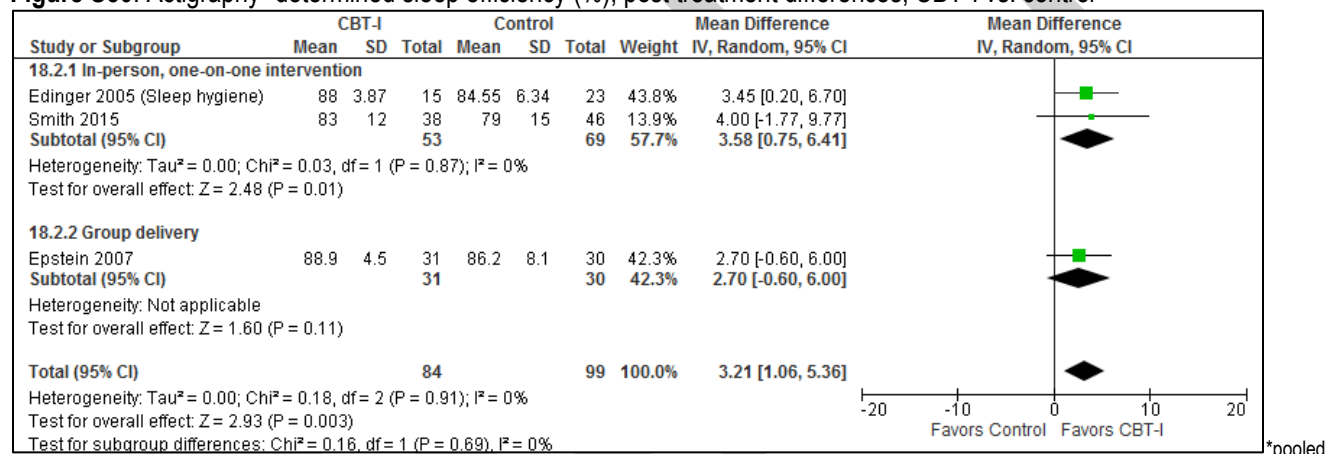
Sleep efficiency (Act): Insomnia and comorbid psychiatric conditions

Table S26. Act-determined sleep efficiency (%), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Rybarczyk 2002	Group delivery	76	13.7	11	76.8	8.6	13	-0.80 [-10.15, 8.55]

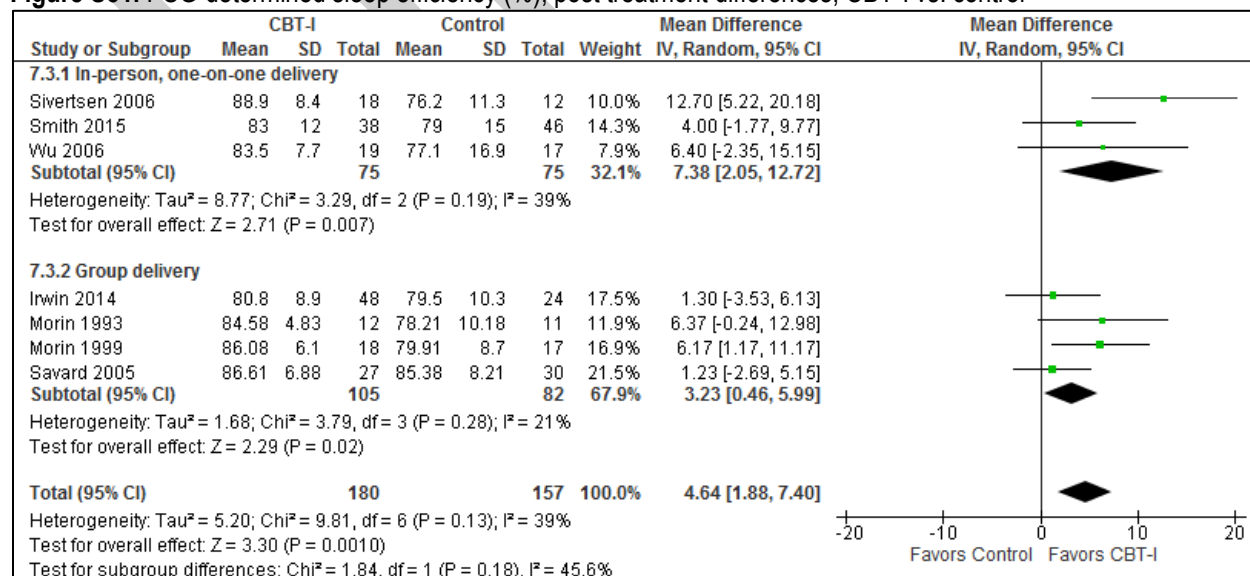
Sleep efficiency (Act): Comorbid medical insomnia

Figure S50. Actigraphy -determined sleep efficiency (%), post treatment differences, CBT-I vs. control



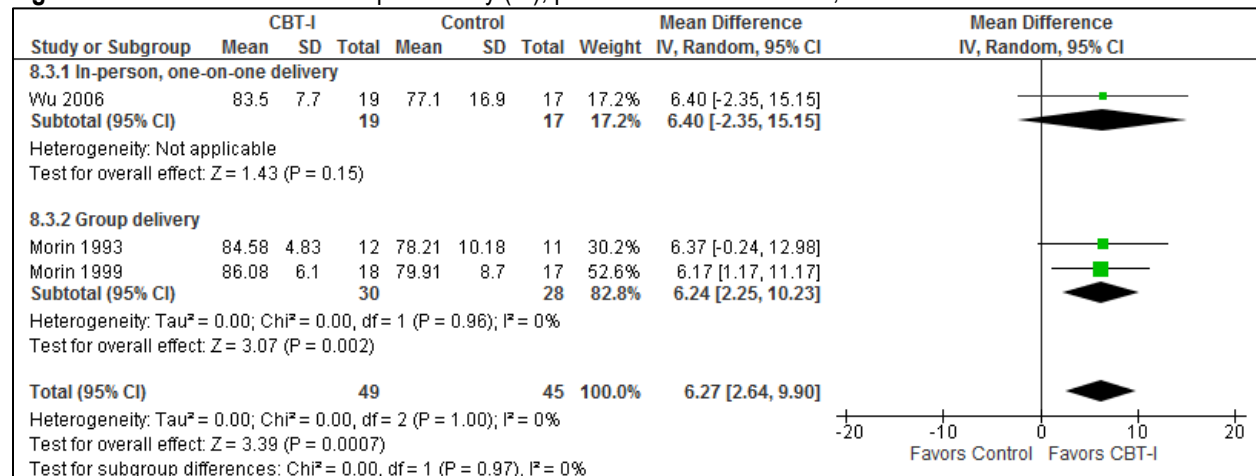
control data (usual care and sleep hygiene) for Edinger 2005

Figure S51. PSG-determined sleep efficiency (%), post treatment differences, CBT-I vs. control



Sleep efficiency (PSG): Insomnia and no comorbidities

Figure S52. PSG-determined sleep efficiency (%), post treatment differences, CBT-I vs. control



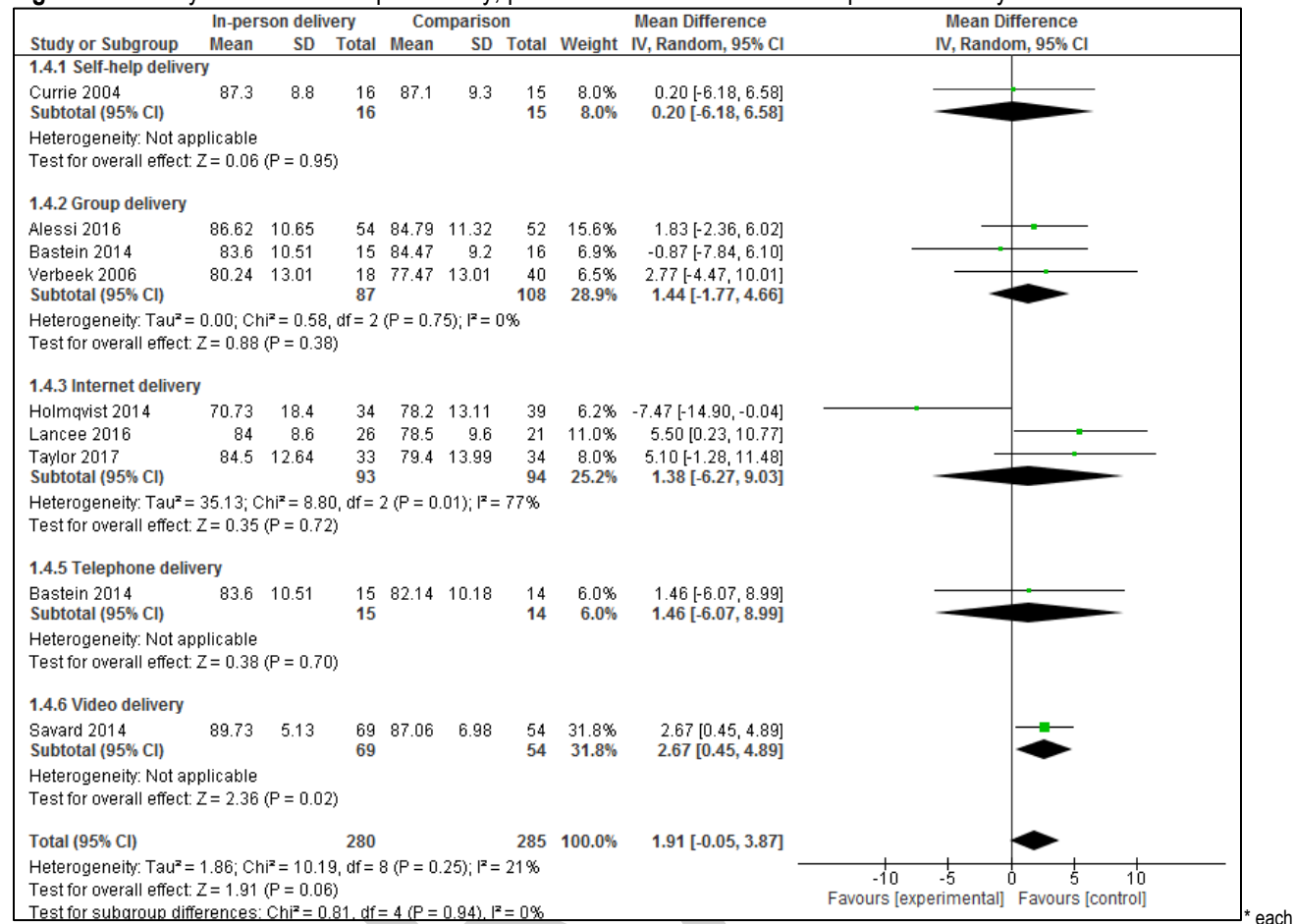
Sleep efficiency (PSG): Comorbid medical insomnia

Table S27. PSG-determined sleep efficiency (%), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Smith 2015	In-person, one-on-one	83	12	38	79	15	46	4.00 [-1.77, 9.77]
Savard 2005	Group delivery	86.61	6.88	27	85.38	8.21	30	1.23 [-2.69, 5.15]

Sleep efficiency (Diary): In-person delivery vs. comparison:

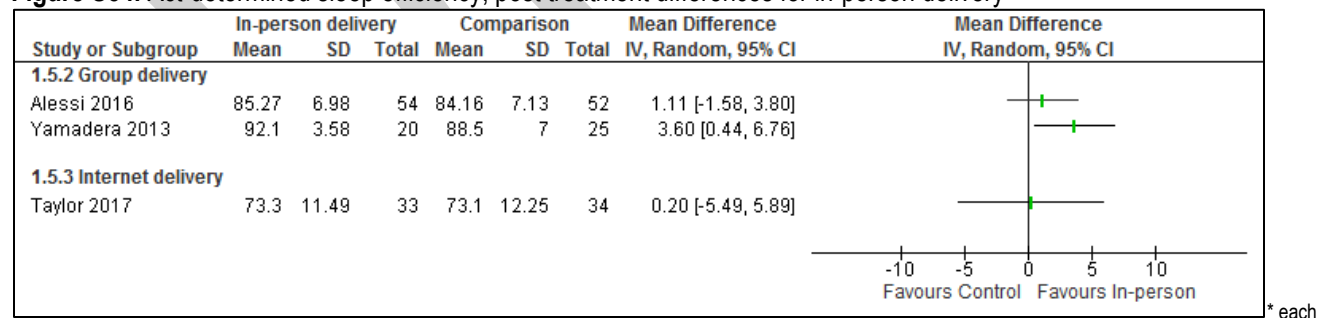
Figure S53. Diary-determined sleep efficiency, post treatment differences for in-person delivery



subgroup of delivery method is reported separately in the results section

Sleep efficiency (Act): In-person delivery vs. comparison:

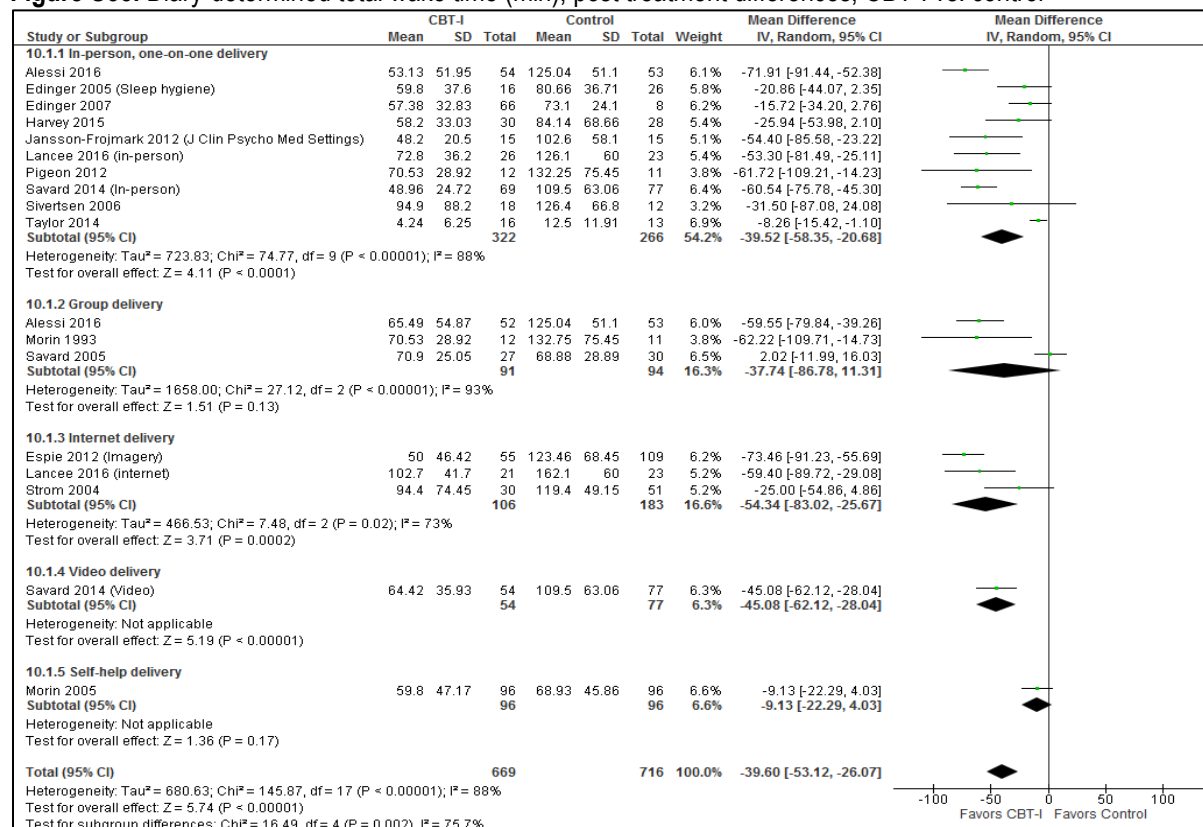
Figure S54. Act-determined sleep efficiency, post treatment differences for in-person delivery



subgroup of delivery method is reported separately in the results section

Total wake time

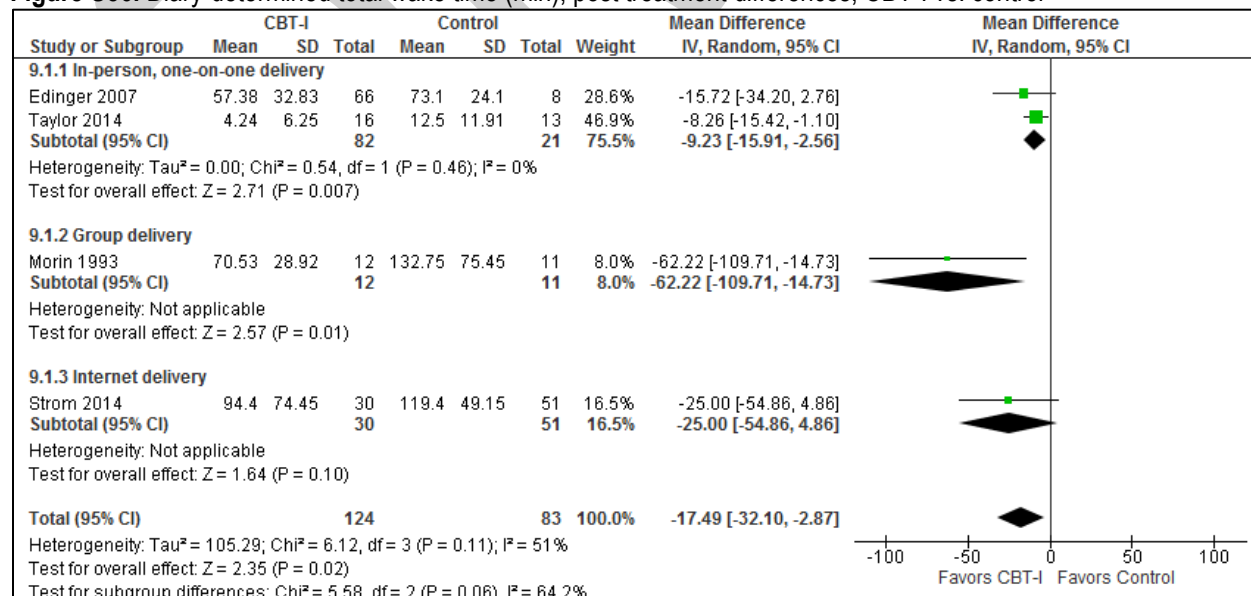
Figure S55. Diary-determined total wake time (min), post treatment differences, CBT-I vs. control



*Edinger 2005 usual and sleep hygiene pooled control data, SE converted to SD
Lancee 2016 (in-person and internet) uses same control data
Savard 2014 (in-person and video) uses same control data
Espie 2012 (imagery and usual care pooled data, SE converted to SD
Morin 2005 SD calculated using 95%CI
Alessi 2016 (in-person and group) uses same control data, SE converted to SD

Total wake time (Diary): Insomnia and no comorbidities

Figure S56. Diary-determined total wake time (min), post treatment differences, CBT-I vs. control



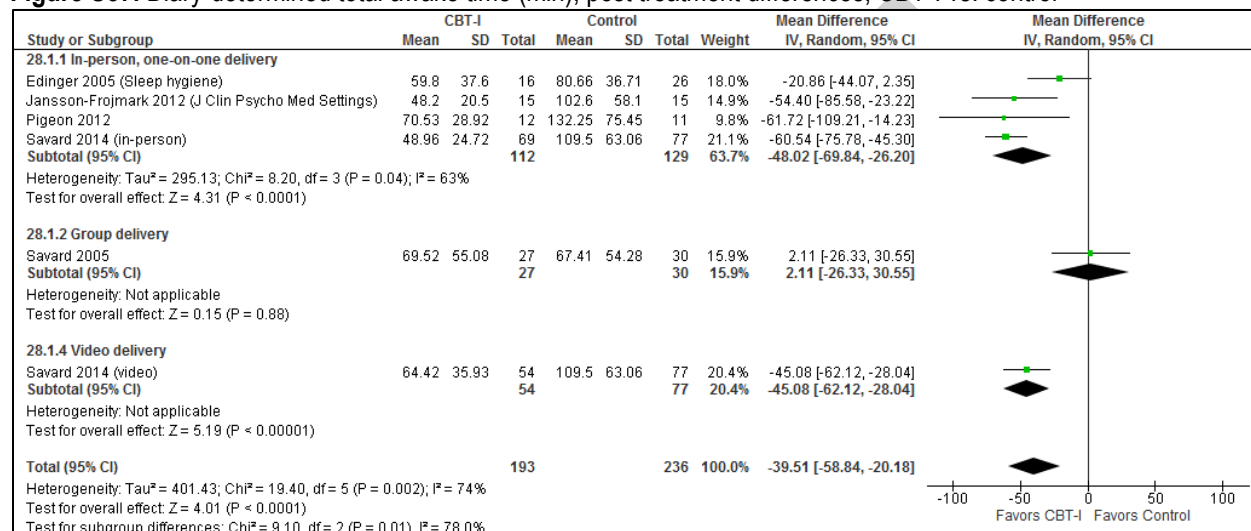
Total wake time: Insomnia and comorbid psychiatric conditions

Table S28. Diary-determined total awake time (min), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harvey 2015	In-person, one-on-one	58.2	33.03	30	84.14	68.66	28	-25.94 [-53.98, 2.10]

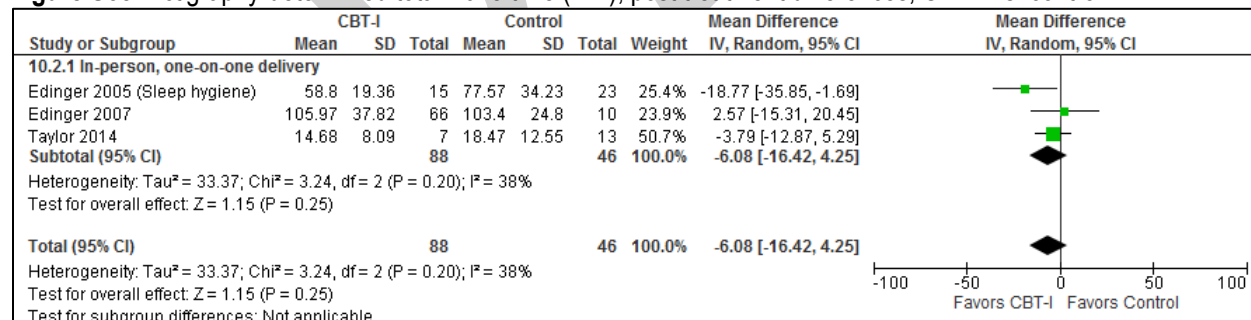
Total wake time: Comorbid medical conditions

Figure S57. Diary-determined total awake time (min), post treatment differences, CBT-I vs. control



*pooled control data (usual care and sleep hygiene) for Edinger 2005

Figure S58. Actigraphy-determined total wake time (min), post treatment differences, CBT-I vs. control



*Edinger 2005 usual and sleep hygiene pooled control data, SE converted to SD

Table S29. Act-determined total wake time (min), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2007	In-person, one-on-one	105.97	37.82	66	103.4	24.8	10	2.57 [-15.31, 20.45]
Taylor 2014	In-person, one-on-one	14.68	8.09	7	18.47	12.55	13	-3.79 [-12.87, 5.29]

Total wake time: Comorbid medical conditions

Table S30. Act-determined total wake time (min), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person, one-on-one	58.8	19.36	15	77.57	34.28	23	-18.77[-35.87, -1.67]

*pooled control data (usual care and sleep hygiene) for Edinger 2005

Figure S59. PSG-determined total wake time (min), post treatment differences, CBT-I vs. control

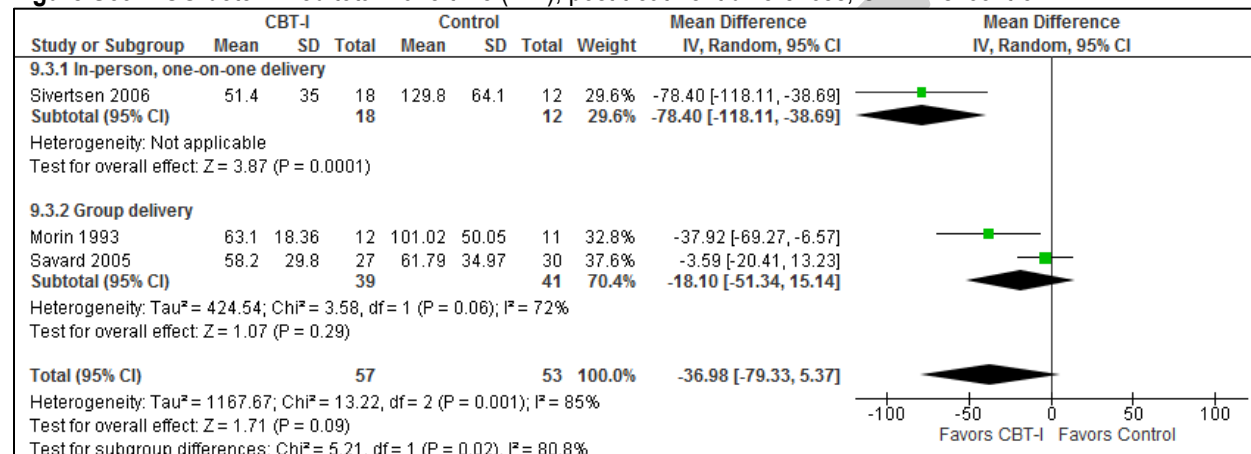
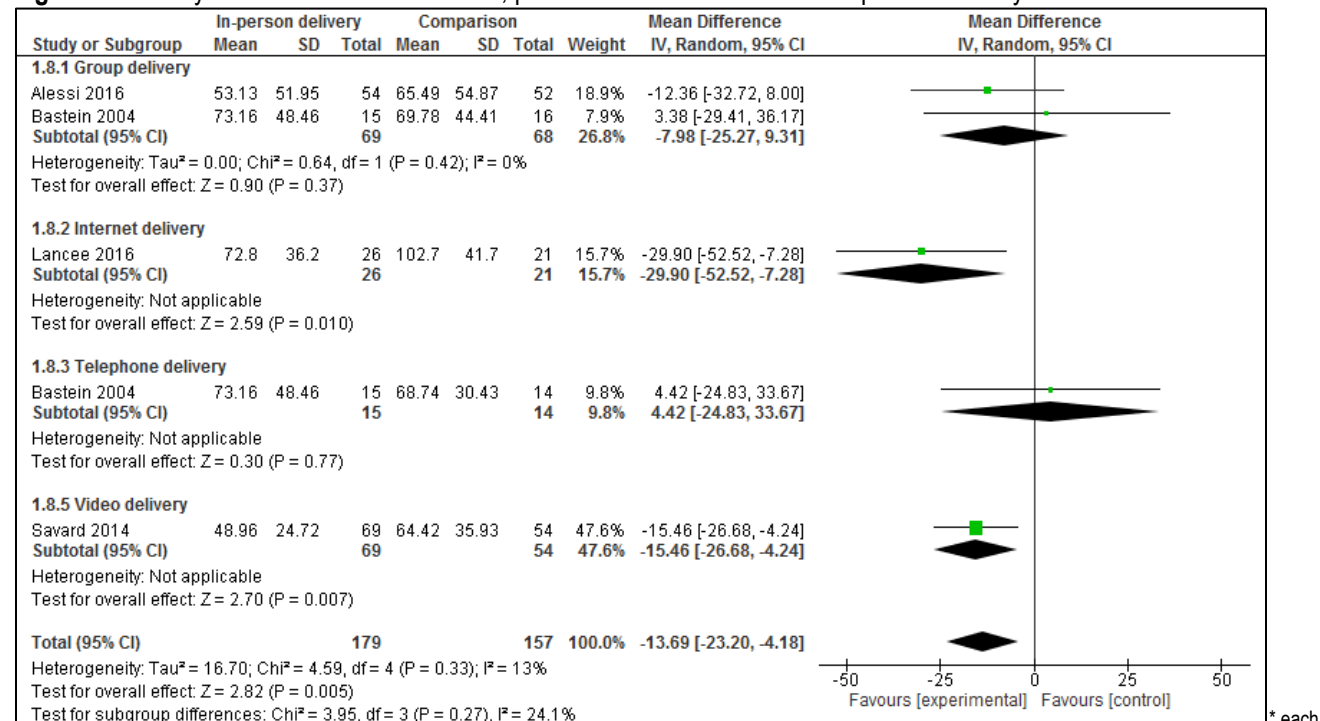


Table S31. PSG-determined total wake time (min), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Morin 1993	Group delivery	63.1	18.36	12	101.02	50.05	11	-37.92 [-69.27, -6.57]

Total wake time (Diary): In-person delivery vs. comparison:

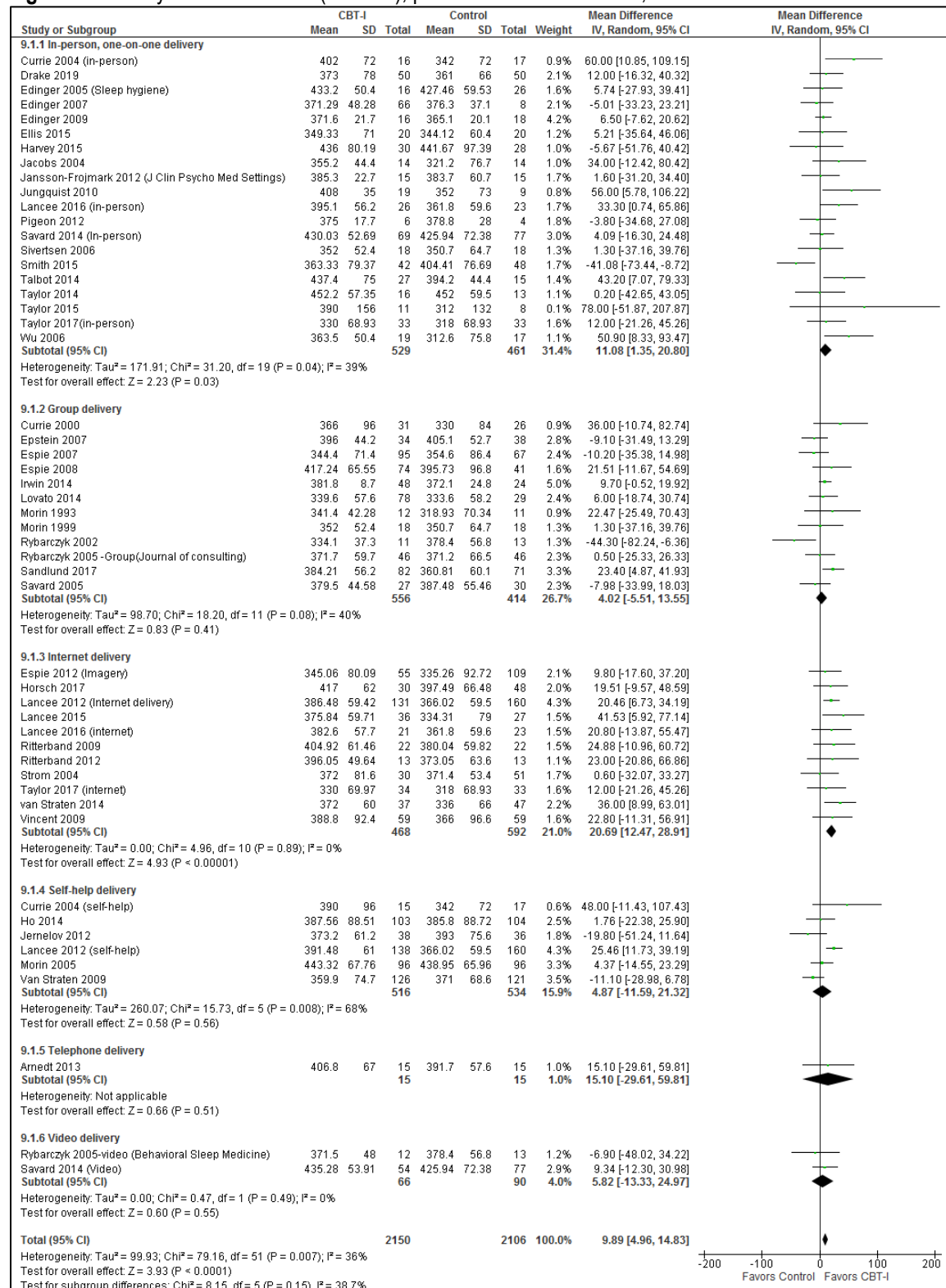
Figure S60. Diary-determined total wake time, post treatment differences for in-person delivery



subgroup of delivery method is reported separately in the results section

Total sleep time

Figure S61. Diary-determined TST (minutes), post treatment differences, CBT-I vs. control

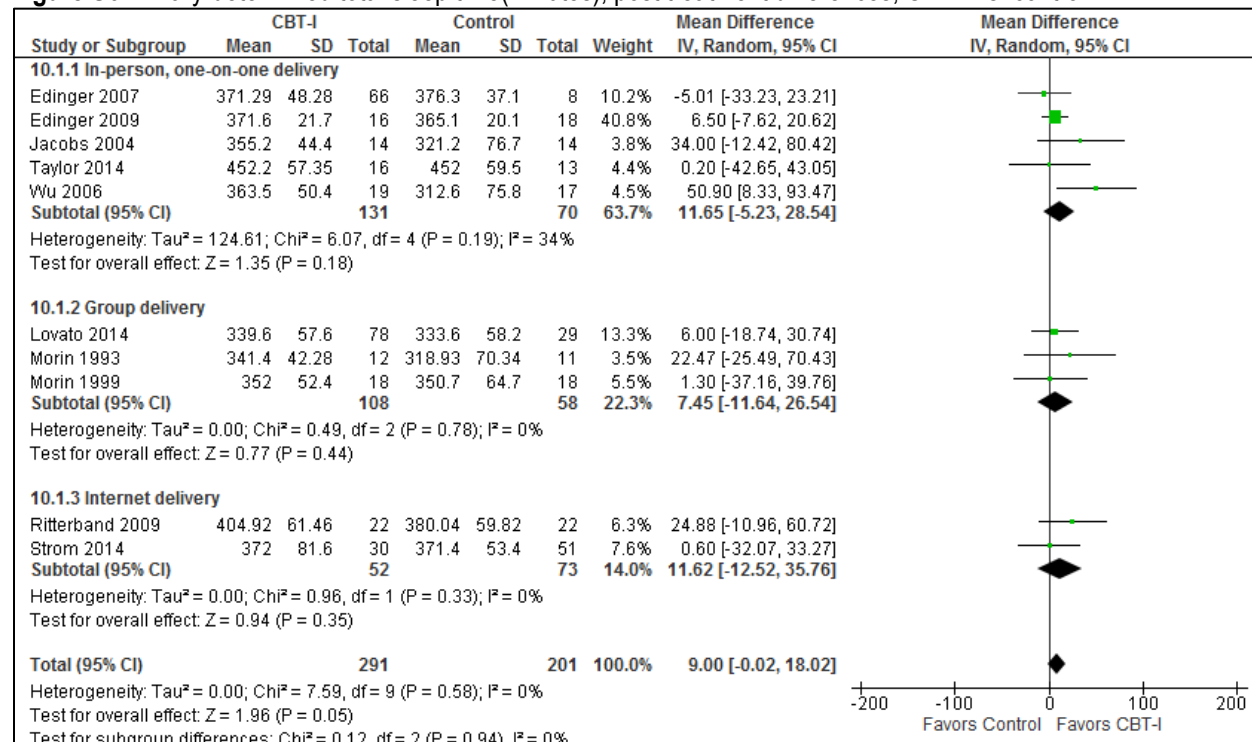


*Currie 2004 (in-person and self-help) uses same control data
 Edinger 2005 (usual and sleep hygiene) pooled control data, converted SE to SD
 Lancee 2012 (internet and self-help) uses same control data

Lancee 2016 (in-person and internet) uses same control data
 Savard 2014 (in-person and video) uses same control data
 Espie 2012 (imagery and usual care) pooled control data, converted SE to SD
 Taylor 2017 (in-person and internet) uses same control data, converted SE to SD

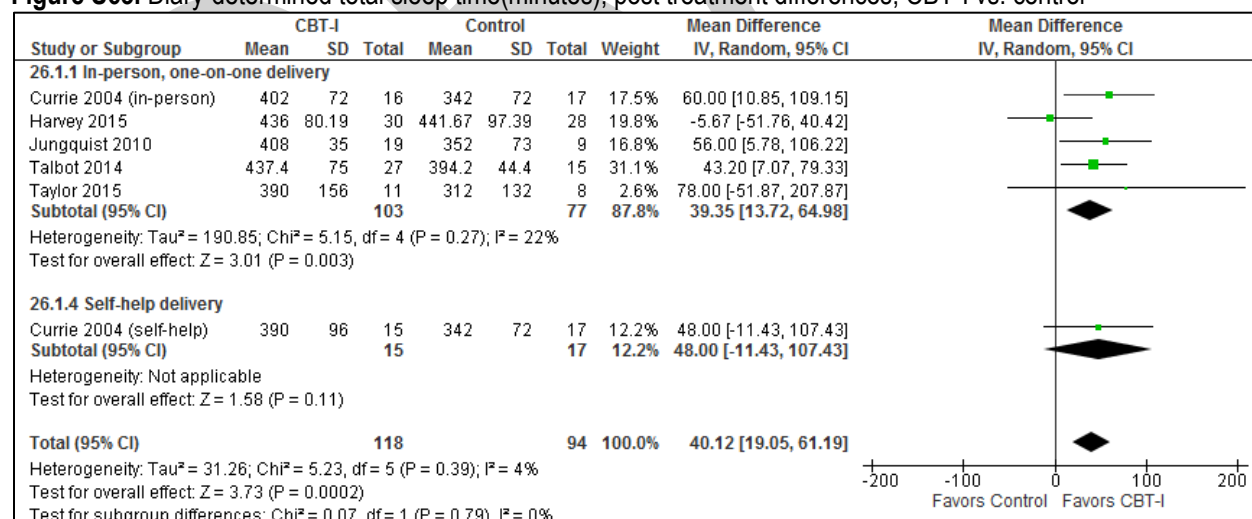
Total sleep time (Diary): Insomnia and no comorbidities

Figure S62. Diary-determined total sleep time(minutes), post treatment differences, CBT-I vs. control



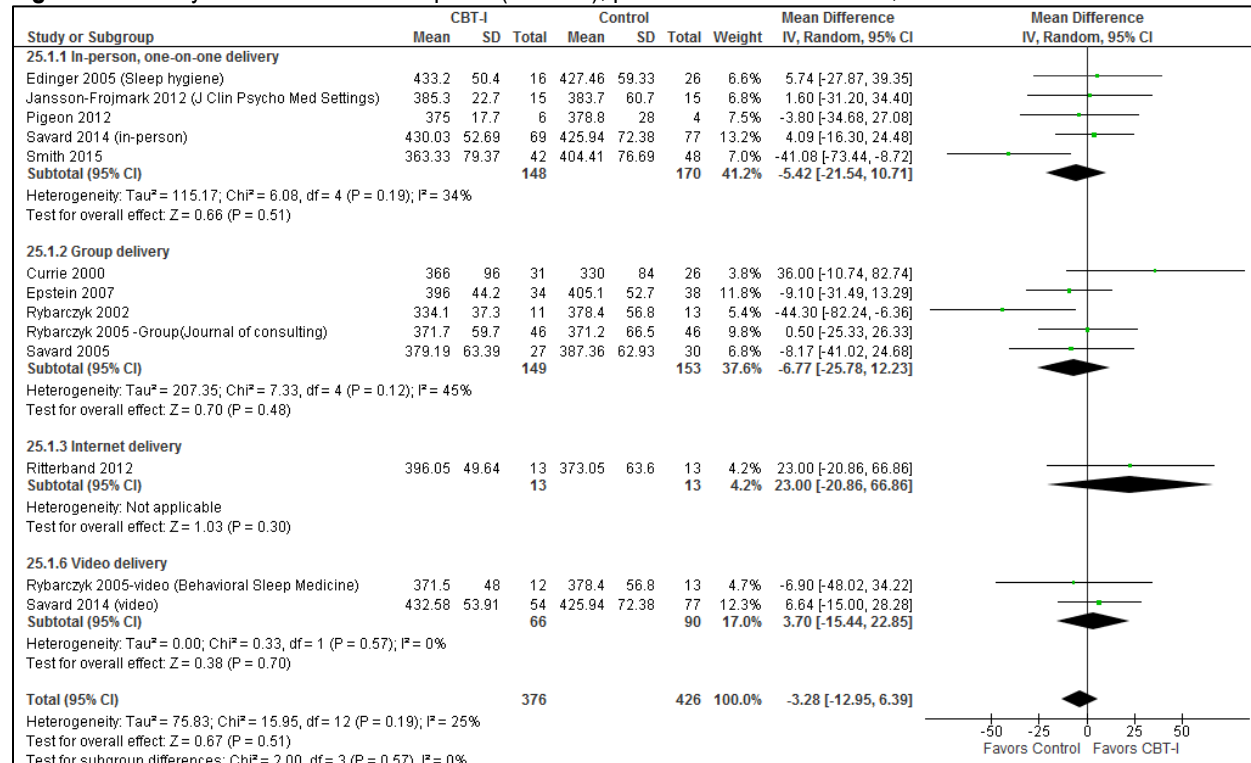
Total sleep time (Diary): Insomnia and comorbid psychiatric conditions

Figure S63. Diary-determined total sleep time(minutes), post treatment differences, CBT-I vs. control



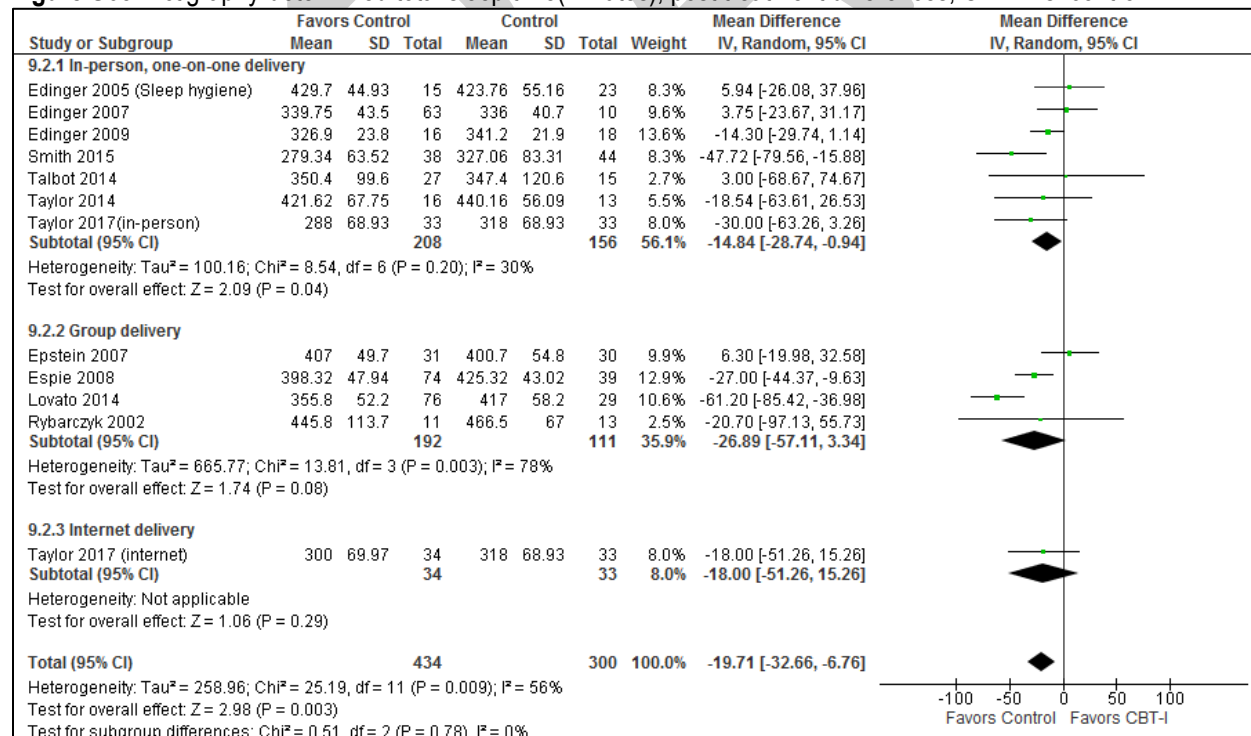
Total sleep time (Diary): Insomnia and comorbid medical conditions

Figure S64. Diary-determined total sleep time(minutes), post treatment differences, CBT-I vs. control



*pooled control data (usual care and sleep hygiene) for Edinger 2005

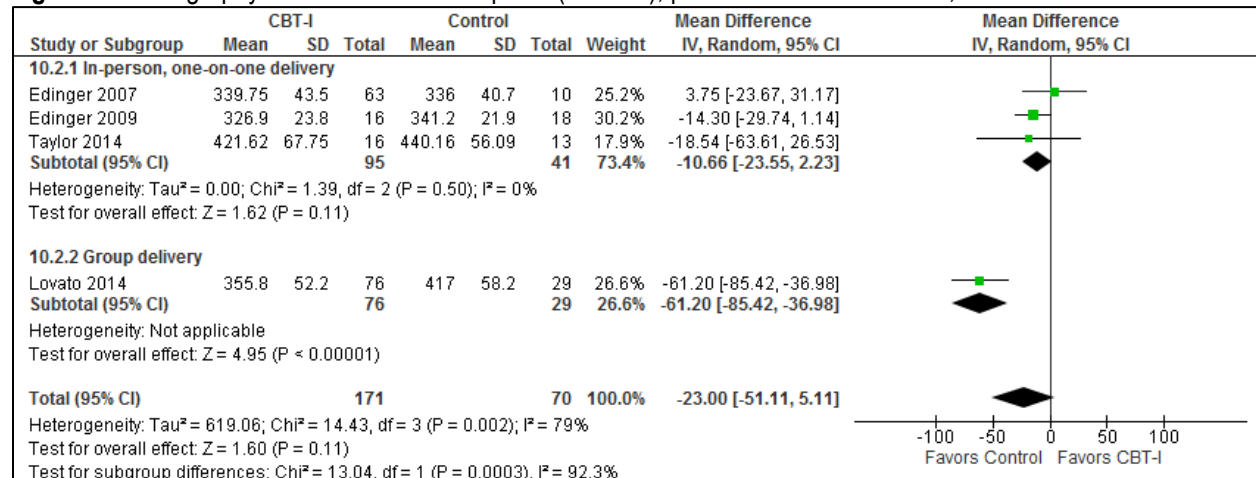
Figure S65. Actigraphy-determined total sleep time(minutes), post treatment differences, CBT-I vs. control



*Edinger 2005 (usual and sleep hygiene) pooled control data, converted SE to SD
Taylor 2017 (in-person and internet) uses same control data, converted SE to SD

Total sleep time (Act): Insomnia and no comorbidities

Figure S66. Actigraphy-determined total sleep time(minutes), post treatment differences, CBT-I vs. control



Total sleep time (Act): Insomnia and comorbid psychiatric conditions

Table S32. Actigraphy-determined total sleep time(minutes), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Talbot 2014	In-person, one-on-one	350.4	99.6	27	347.4	120.6	15	3.00[-68.67, 74.67]

Total sleep time (Act): Insomnia and comorbid medical conditions

Figure S67. Actigraphy-determined total sleep time(minutes), post treatment differences, CBT-I vs. control

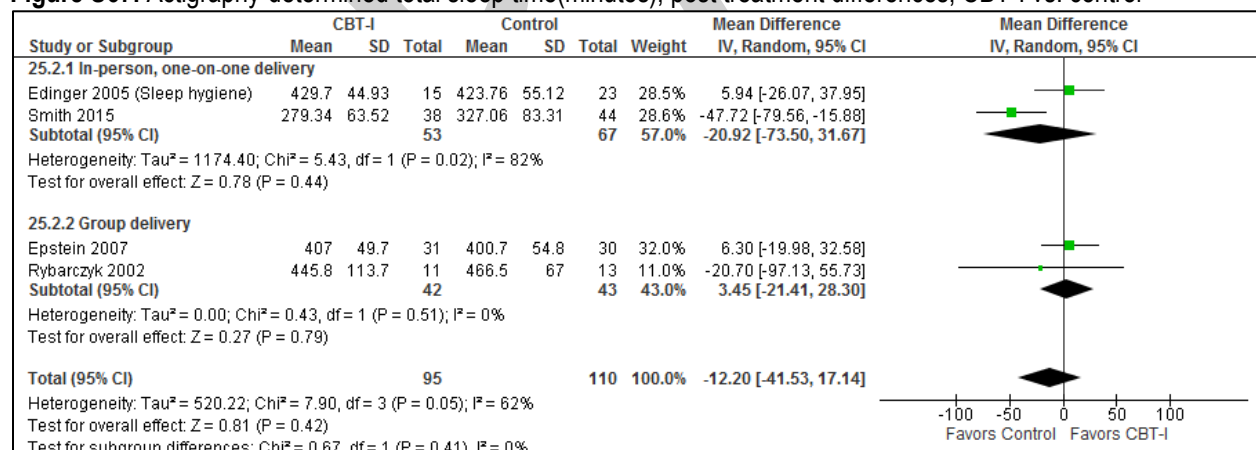
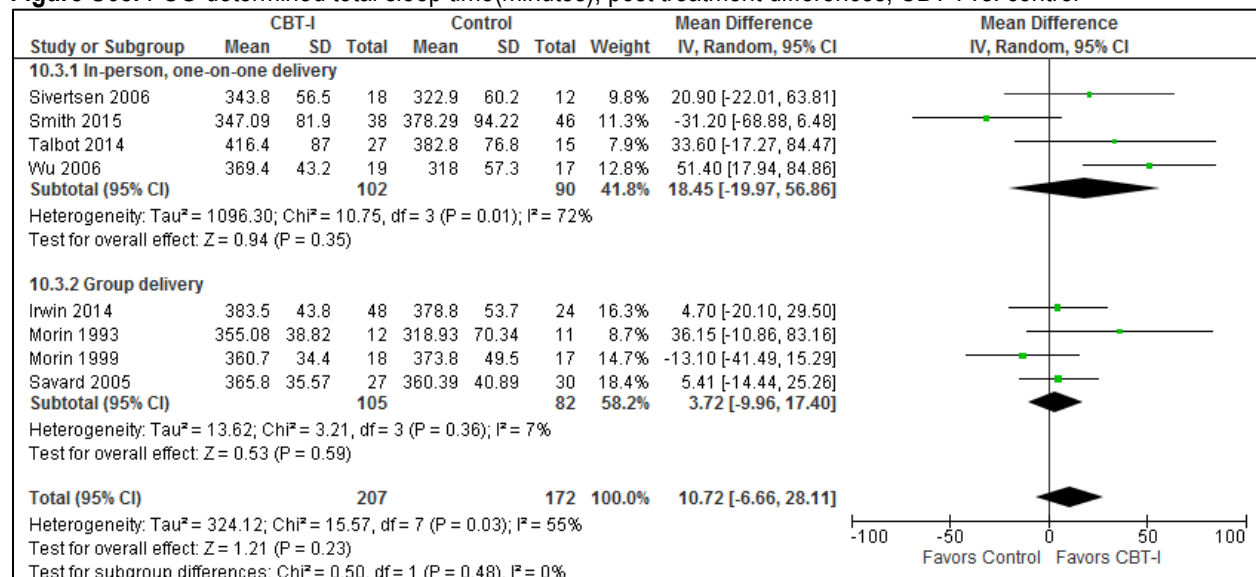
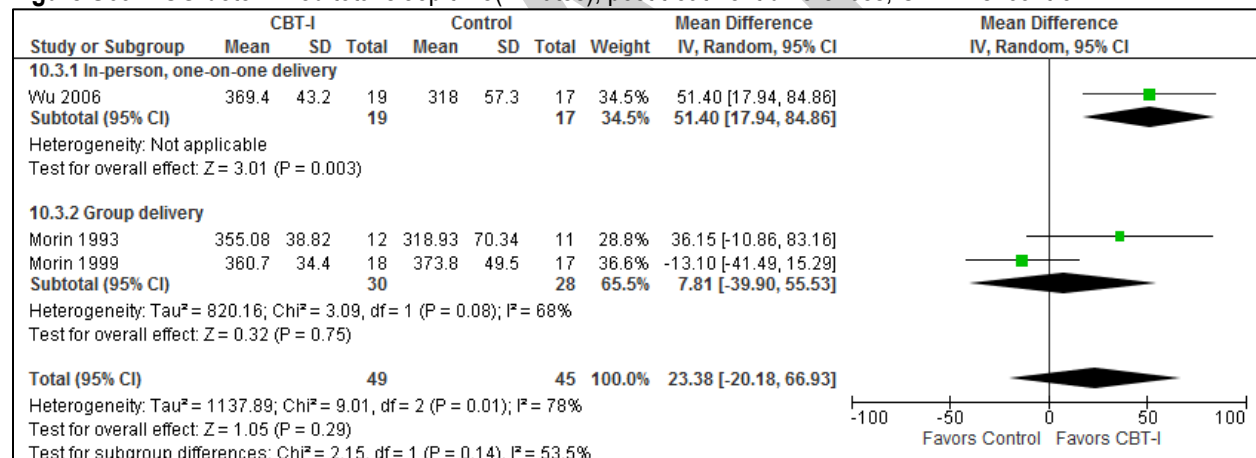


Figure S68. PSG-determined total sleep time(minutes), post treatment differences, CBT-I vs. control



Total sleep time (PSG): Insomnia and no comorbidities

Figure S69. PSG-determined total sleep time(minutes), post treatment differences, CBT-I vs. control



Total sleep time (PSG): Insomnia and comorbid psychiatric conditions

Table S33. PSG-determined total sleep time(minutes), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Talbot 2014	In-person, one-on-one	416.4	87	27	382.8	76.8	15	33.60 [-17.27, 84.47]

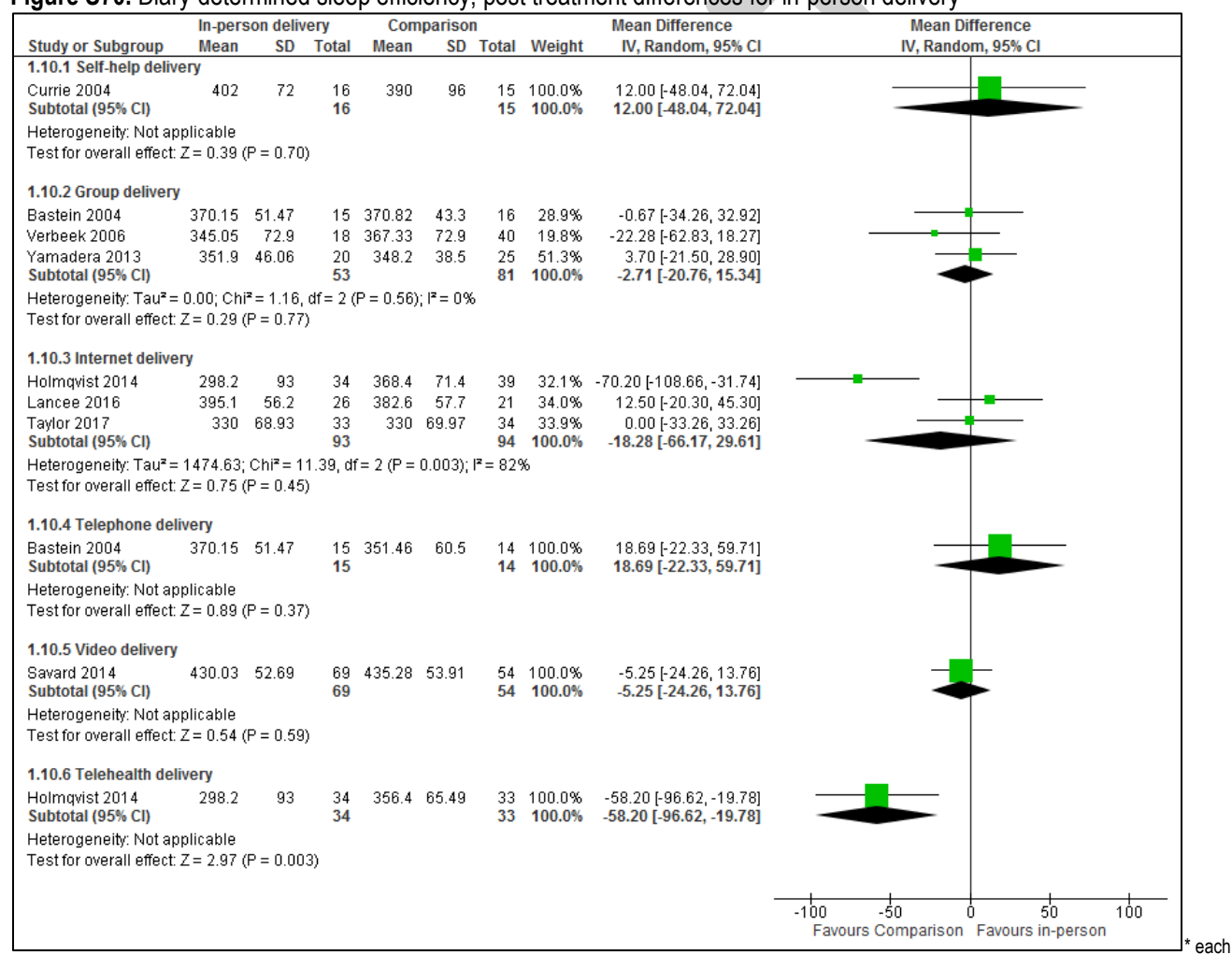
Total sleep time: Insomnia and comorbid medical conditions (PSG)

Table S34. PSG-determined total sleep time(minutes), post treatment differences, CBT-I vs. control

Study	Delivery method	CBT-I			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Smith 2015	In-person, one-on-one	347.09	81.9	38	378.29	94.22	46	-31.20 [-68.88, 6.48]
Savard 2005	Group delivery	360.38	50.14	27	367.99	44.58	30	-7.61[-32.35,17.13]

Total sleep time (Diary): In-person delivery vs. comparison:

Figure S70. Diary-determined sleep efficiency, post treatment differences for in-person delivery



subgroup of delivery method is reported separately in the results section

Table S35 - Summary of Findings table for CBT-I for the treatment of Psychological and Behavioral insomnia in adults

References: Currie 2004 (A); Jansson-Frojmark 2012 (B); Lancee 2016 (C); Taylor 2014 (D); Epstein 2007 (E); Espie 2012 (F); Lancee 2015 (G) Strom 2004 (H); Vincent 2009 (I); Arnedt 2013 (J); Ho 2014 (K); Jernelov 2012 (L); Van Straten 2009 (M); Edinger 2005 (N) ; Edinger 2007 (O); Edinger 2009 (P) ; Ellis 2015 (Q); Harvey 2015 (R); Jacobs 2004 (S); Jungquist 2010 (T); Savard 2014 (U); Smith 2015 (V); Talbot 2014 (W); Kaku 2011 (X), Taylor 2015 (Y); Wu 2006 (Z); Bothelius 2013 (AA); Currie 2000 (BB); Espie 2007 (CC); Espie 2008 (DD); Irwin 2014 (EE); ; Lovato 2014 (FF); Morin 1993 (GG); Rybarczyk 2002 (HH); Rybarczyk, JCC 2005 (II); Savard 2005 (JJ); Lancee 2012 (KK); Ritterband 2009 (LL); Ritterband 2012 (MM); Van Straten 2014 (NN); Rybarczyk, BSM 2005 (OO); Morin 1999 (PP); Wagley 2013 (QQ); Fleming 2014 (RR); Bjorvatn 2011 (SS); Pigeon 2012 (UU); Dirksen 2007 (VV); Martinez 2014 (WW); Thorndike 2013 (XX); Blom 2016 (ZZ); Thiar 2015 (AAA); Miro 2011 (BBB); Sivertsen 2006 (CCC); Taylor 2017 (DDD); Drake 2019 (EEE); Sandlund 2017 (FFF), Espie 2019 (GGG); Bjorvatn 2018 (HHH); Mao 2017 (III); Bernstein 2017 (JJJ); Morin 2005 (KKK); Alessi 2016 (LLL); Horsch 2017 (MMM)

Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Quality of sleep * [Diary]	⊕⊕○○ LOW ^{a,c}	The standardized mean difference in the CBTI group was 0.46 points higher ² [0.29 to 0.63 points higher] compared to control	1936 patients (18 RCT) A-M,DDD-FFF,KKK,MMM
Quality of sleep [PSQI]	⊕⊕⊕○ MODERATE ^c	The standardized mean difference in the CBTI group was 0.66 points lower ¹ [0.54 to 0.78 points lower] compared to control	1839 patients (21 RCTs) A,D,E,J,K,P,R,X,BB,HH, II,NN,OO,QQ,SS,WW,BBB ,III,KKK,LLL,MMM
Sleep latency * [Diary]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 12.33 minutes lower ² [10.12 min to 14.54 mins lower] compared to control	4100 patients (45 RCTs) A-C,W,Y,Z,AA-NN, OO,DDD,EEE,FFF,KKK,LLL,MMM
Sleep latency [PSG]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 4.7 minutes lower ² [14.67 min lower to 5.27 mins higher] compared to control	275 patients (5 RCTs) V,Z,EE,GG,JJ
Wake after sleep onset * [Diary]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 19.13 minutes lower ² [15.40 to 22.86 minutes lower] compared to control	3561 patients (42 RCT) A,C,D,E,F,G,H,I,J,K,L,N, O,P,Q,R,T,U,V,W,Y,AA,BB,CC,DD,EE, FF,GG,HH,II,JJ,KK,LLL,MM,OO,PP,EEE,FFF,KKK,LLL,MMM
Wake after sleep onset [Act]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 3.34 minutes lower ² [8.46 mins lower to 1.77 min higher] compared to control	749 patients (10 RCT) D,E,N,P,V,W,CC,DD,FF,DDD
Wake after sleep onset [PSG]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 14.68 minutes lower ² [30.29 min lower to 0.92 mins higher] compared to control	316 patients (6 RCT) V,W,EE,GG,JJ,PP
Remission rate* [ISI, Diary]	⊕⊕⊕○ MODERATE ^c	The percentage of patients achieving "remission" in the CBTI group was 33% higher ¹ [28% to 39% higher] compared to control	1775 patients (25 RCT) A, B,D,J,L,P,R,S,U,V,W,Z,BB,CC,EE,FF,JJ,LLL,MM,PP,QQ,RR,EEE,FFF,MMM
Responder rate* [ISI, Diary]	⊕⊕⊕○ MODERATE ^c	The percentage of patients considered "responders" in the CBTI group was 44% higher ¹ [39% to 51% higher] compared to control	1009 patients (16 RCT) B,C,F,G,J,L,N,O,R,AA, HH,II,OO,PP,FFF,MMM
Beliefs and attitudes about sleep [DBAS]	⊕⊕⊕○ VERY LOW ^{a,b,c}	The standardized mean difference in the CBTI group was 0.78 points lower ¹ [0.31 to 1.26 points lower] compared to control	1362 patients (14 RCT) D,H,J,LL,M,U,HH,II,OO,SS,DDD,III, MMM
Daytime fatigue [MFI, FFS]	⊕⊕○○ LOW ^{a,c}	The standardized mean difference in the CBTI group was 0.56 points lower ¹ [0.25 to 0.87 points lower] compared to control	2250 patients (10 RCT) D,I,J,FF,MM,UU,VV, WW,XX, GGG
Insomnia severity [ISI]	⊕⊕⊕○ MODERATE ^c	The standardized mean difference in the CBTI group was 0.94 points lower ¹ [0.76 to 1.12 points lower] compared to control	2430 patients (27 RCT)B,C,D,I,J,K,L,R,T,U,V,W,Y,AA,FF,JJ,LL,UU,VV,ZZ,AAA,DDD,EEE,FFF,HHH,JJJ,KKK, LLL,MMM
Insomnia severity [ISQ]	⊕⊕○○ LOW ^{a,c}	The standardized mean difference in the CBTI group was 0.32 points lower ² [0.73 points lower to 0.09 points higher] compared to control	200 patients (3 RCT) N,O,P
Nights using hypnotics [Diary]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 1.14 nights per week lower ² [0.66 to 1.63 nights per week lower] compared to control	858 patients (5 RCT) M,HH,KK,OO,SS
Number of nighttime awakenings [Diary]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 0.36 points lower ² [0.24 to 0.48 points lower] compared to control	1683 patients (19 RCT) A,C,D,G,H,I,J,Q,T,BB,FF, KK,LL,MM,NN,DDD,EEE,FFF,MMM
Number of nighttime awakenings [Act]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 0.33 points lower ² [0.19 to 0.48 points lower] compared to control	100 patients (1 RCT) ^{DDD}

Sleep efficiency [Diary]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 7.19% higher ² [6.10% to 8.28% higher] compared to control	4234 patients (48 RCTs) A,C,D,E,F,G,H,I,J,K,L, M,N,O,P,Q,R,S,T,U,V,W,Y,Z,BB,CC, DD,EE,FF,GG,HH,II,JJ,KK,LL,MM,NN, OO,PP,UU,AAA,CCC,DDD,EEE,FFF,KKK,LLL,MMM
Sleep efficiency [Actigraphy]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 0.95% higher ² [0.27% lower to 2.17% higher] compared to control	847 patients (10 RCTs) E,N,O,P,V,CC,DD,HH,DDD,LLL
Sleep efficiency [PSG]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 4.64% higher ² [1.88% to 7.40% higher] compared to control	337 patients (7 RCTs) V,Z,EE,GG,JJ,PP,CCC
Total wake time [Diary]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 39.60 minutes lower ¹ [26.07 to 53.12 minutes lower] compared to control	1231 patients (15 RCTs) B,C,D,F,H,N,O,R,U, GG,JJ,UU,CCC,KKK,LLL
Total wake time [Act]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 6.08 minutes lower ² [16.42 minutes lower to 4.25 minutes higher] compared to control	134 patients (3 RCTs) D,N,O
Total wake time [PSG]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 36.98 minutes lower ¹ [79.33 minutes lower to 5.37 minutes higher] compared to control	110 patients (3 RCTs) GG,JJ,CCC
Total sleep time [Diary]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 9.89 minutes higher ² [4.96 minutes to 14.83 minutes higher] compared to control	3788 patients (47 RCTs) A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S, T,U,V,W,Y,Z,BB,CC,DD,EE,FF,GG,HH, II,JJ,KK,LL,MM,NN,OO,PP,UU,CCC,DDD,EEE,FFF,MMM
Total sleep time [Actigraphy]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 19.71 minutes lower ² [6.76 minutes to 32.66 minutes lower] compared to control	741 patients (11 RCTs) D,E,N,O,P,V,W,DD,FF, HH,DDD
Total sleep time [PSG]	⊕○○○ VERY LOW ^{a,b,c}	The mean difference in the CBTI group was 10.72 minutes higher ² [6.66 minutes lower to 28.11 minutes higher] compared to control	379 patients (8 RCTs) V,W,Z,EE,GG,JJ,PP, CCC

* Critical Outcome

^a 95% CI crosses clinical significance threshold and/or <200 participants

^b Inconsistent subgroup differences

^c Risk of bias [no patient blinding, allocation concealment]

¹ Meets the clinical significance threshold

² Does not meet the clinical significance threshold

Table S36 - Summary of Findings table for CBT-I for the treatment of Psychological and Behavioral insomnia in adults with Insomnia and no comorbidities

References: Edinger 2001 (A); Soeffing 2008(B); Taylor 2014 (C); Edinger 2009 (D); Edinger 2007 (E); Jacobs 2004 (F); Wu 2006 (G); Lovato 2014 (H); Morin 1993 (I); Ritterband 2009 (J); Morin 1999 (K); Strom 2004 (L); Blom 2016 (M)

Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Quality of sleep * [Diary]	⊕○○○ VERY LOW ^{a,b,c}	The standardized mean difference in the CBTI group was 0.77 points higher [0.52 points lower to 2.07 points higher] compared to control ¹	110 patients (2 RCT) ^{C,L}
Quality of sleep * [PSQI]	⊕⊕○○ LOW ^{a,b,c}	The standardized mean difference in the CBTI group was 1.08 points lower [2.17 points lower to 0.02 points higher] compared to control ¹	63 patients (2 RCT) ^{C,D}
Sleep latency * [Diary]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 10.64 minutes lower [5.99 min to 15.28 mins lower] compared to control ²	454 patients (9 RCTs) ^{C,D,E,F,G,H,I,J,L}
Sleep latency [PSG]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 17.11 minutes lower [43.65 min lower to 9.43 mins higher] compared to control ²	58 patients (2 RCTs) ^{G,I}
Wake after sleep onset * [Diary]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 24.10 minutes lower [9.30 to 38.90 minutes lower] compared to control ¹	421 patients (8 RCTs) ^{C,D,E,H,I,J,K,L}
Wake after sleep onset [Act]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the CBTI group was 5.41 minutes lower [14.16 mins lower to 3.33 min higher] compared to control ²	181 patients (3 RCT) ^{C,D,H}
Wake after sleep onset [PSG]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 24.51 minutes lower [7.51 min lower to 41.52 mins higher] compared to control ¹	58 patients (2 RCT) ^{I,K}
Remission rate* [ISI, Diary]	⊕⊕⊕○ MODERATE ^c	The percentage of patients achieving "remission" in the CBTI group was 47% higher [33% to 61% higher] compared to control ¹	278 patients (6 RCT) ^{C,D,F,G,H,J}

Responder rate* [ISI, Diary]	⊕⊕⊕○ MODERATE ^a	The percentage of patients considered "responders" in the CBTI group was 55% higher [10% to 99% higher] compared to control ¹	54 patients (2 RCT) ^{D,K}
Cognitive function [DBAS]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the CBTI group was 1.34 points lower [0.06 to 2.62 points lower] compared to control ¹	109 patients (2 RCT) ^{C,L}
Daytime fatigue [MFI, FFS]	⊕⊕○○ LOW ^{a,c}	The std mean difference in the CBTI group was 0.7 points lower [0.32 to 1.08 points lower] compared to control ¹	134 patients (2 RCT) ^{C,H}
Insomnia severity [ISI]	⊕⊕○○ LOW ^{b,c}	The mean difference in the CBTI group was 1.13 points lower [0.66 to 1.60 points lower] compared to control ¹	267 patients (3 RCT) ^{C,H,M}
Insomnia severity [ISQ]	⊕⊕⊕○ MODERATE ^a	The mean difference in the CBTI group was 0.45 points lower [1.13 points lower to 0.23 points higher] compared to control ²	258 patients (2 RCT) ^{D,E}
Nights using hypnotics [Diary]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the CBTI group was 0.2 nights per week higher [2.33 nights lower to 2.73 nights per week higher] compared to control ²	24 patients (1 RCT) ^I
Number of nighttime awakenings [Diary]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 0.31 points lower [0.07 to 0.55 points lower] compared to control ²	259 patients (4 RCTs) ^{C,H,J,L}
Sleep efficiency [Diary]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 8.19% higher [5.63 % to 10.74% higher] compared to control ²	527 patients (10 RCTs) ^{C,L}
Sleep efficiency [Actigraphy]	⊕⊕⊕○ MODERATE ^a	The mean difference in the CBTI group was 0.16% lower [3.25% lower to 2.94% higher] compared to control ²	139 patients (2 RCTs) ^{D,E}
Sleep efficiency [PSG]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 6.27% higher [2.64% to 9.9% higher] compared to control ²	94 patients (3 RCTs) ^{G,I,K}
Total wake time [Diary]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the CBTI group was 17.49 minutes lower [2.87 to 32.1 minutes lower] compared to control ²	207 patients (4 RCTs) ^{C,E,I,L}
Total wake time [Act]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the CBTI group was 2.49 minutes lower [10.58 minutes lower to 5.61 minutes higher] compared to control ²	96 patients (2 RCTs) ^{C,E}
Total wake time [PSG]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 37.92 minutes lower [6.57 minutes to 69.27 minutes lower] compared to control ¹	23 patients (1 RCT) ^I
Total sleep time [Diary]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 9 minutes higher [0.02 minutes lower to 18.02 minutes higher] compared to control ²	492 patients (10 RCTs) ^{C,L}
Total sleep time [Actigraphy]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the CBTI group was 23 minutes lower [51.11 minutes lower to 5.11 minutes higher] compared to control ²	241 patients (4 RCTs) ^{C,D,E,H}
Total sleep time [PSG]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the CBTI group was 23.28 minutes higher [20.18 minutes lower to 66.93 minutes higher] compared to control ¹	94 patients (3 RCTs) ^{G,I,K}

* Critical Outcome

^a 95% CI crosses clinical significance threshold and/or <200 participants

^b Inconsistent subgroup differences or overall inconsistency

^c Risk of bias [no patient blinding, allocation concealment]

¹ Meets the clinical significance threshold

² Does not meet the clinical significance threshold

Table S37 - Summary of Findings table for CBT-I for the treatment of Psychological and Behavioral insomnia in adults with Insomnia and psychiatric comorbidities

References: Currie 2004 (A); Freeman 2015 (B); Harvey 2015 (C); Wagley 2013 (D); Rybarczyk 2002 (E); Rybarczyk 2005 (JCC) (F); Rybarczyk 2005 (BSM) (G); Jungquist 2010 (H); Talbot 2014 (I); Taylor 2015 (J); Jansson-Frojmark 2012 (K); Thorndike 2013 (L)

Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Quality of sleep * [Diary]	⊕⊕○○ LOW ^{a,c}	The standardized mean difference in the CBTI group was 0.82 points higher [0.15 points to 1.48 points higher] compared to control ¹	47 patients (1 RCT) ^A
Quality of sleep [PSQI]	⊕⊕⊕○ MODERATE ^c	The standardized mean difference in the CBTI group was 0.78 points lower [0.55 points to 1 point lower] compared to control ¹	316 patients (7 RCT) ^{A-G}
Sleep latency * [Diary]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 23.02 minutes lower [15.20 min to 30.84 mins lower] compared to control ¹	339 patients (8 RCTs) ^{A,C,E,F,G,H,I,J}
Wake after sleep onset * [Diary]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 24.57 minutes lower [10.63 to 38.50 minutes lower] compared to control ¹	339 patients (8 RCTs) ^{A,C,E,F,G,H,I,J}

Wake after sleep onset [Act]	⊕⊕⊕○ MODERATE ^a	The mean difference in the CBTI group was 13.96 minutes lower [57.28 mins lower to 20.52 min higher] compared to control ²	45 patients (1 RCT) ¹
Wake after sleep onset [PSG]	⊕⊕⊕○ MODERATE ^a	The mean difference in the CBTI group was 18.38 minutes lower [60.15 mins lower to 32.23 min higher] compared to control ²	102 patients (1 RCT) ¹
Remission rate* [ISI, Diary]	⊕⊕○○ LOW ^{a,c}	The percentage of patients achieving "remission" in the CBTI group was 31% higher [13% to 48% higher] compared to control ¹	196 patients (5 RCT) ^{A,CD,H,I}
Responder rate* [ISI, Diary]	⊕⊕○○ LOW ^{a,c}	The percentage of patients considered "responders" in the CBTI group was 50% higher [38% to 62% higher] compared to control ¹	188 patients (4RCT) ^{C,E,F,G}
Cognitive function [DBAS]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 0.9 points lower [0.53 to 1.28 points lower] compared to control ¹	123 patients (3 RCT) ^{E,F,G}
Daytime fatigue [MFI, FFS]	⊕⊕○○ LOW ^{a,c}	The std mean difference in the CBTI group was 0.81 points lower [0.19 to 1.42 points lower] compared to control ¹	44 patients (1 RCT) ^L
Insomnia severity [ISI]	⊕⊕⊕○ MODERATE ^a	The mean difference in the CBTI group was 1.61 points lower [1.16 to 2.05 points lower] compared to control ¹	147 patients (4 RCT) ^{C,H,I,J}
Nights using hypnotics [Diary]	⊕⊕○○ LOW ^{a,b}	The mean difference in the CBTI group was 1.5 nights per week lower [3.53 nights lower to 0.53 nights per week higher] compared to control ²	25 patients (1 RCT) ^G
Number of nighttime awakenings [Diary]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 0.54 points lower 1.25 points lower to 0.59 points higher] compared to control ¹	93 patients (2 RCTs) ^{A,H}
Sleep efficiency [Diary]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 9.52% higher [7.05 % to 11.99% higher] compared to control ²	353 patients (7 RCTs) ^{A,C,E,F,G,H,I,J}
Sleep efficiency [Actigraphy]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 0.80% lower [10.15% lower to 8.55% higher] compared to control ²	24 patients (1 RCT) ^E
Total wake time [Diary]	⊕⊕○○ LOW ^a	The mean difference in the CBTI group was 25.94 minutes lower [53.98 mins lower to 2.10 minutes higher] compared to control ²	58 patients (1 RCTs) ^C
Total sleep time [Diary]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the CBTI group was 17.69 minutes higher [5.66 minutes lower to 41.04 minutes higher] compared to control ²	371 patients (9 RCTs) ^{A-C,E,F,G,H,I,J}
Total sleep time [Actigraphy]	⊕⊕⊕○ MODERATE ^a	The mean difference in the CBTI group was 27.47 minutes lower [69.89 minutes lower to 14.94 minutes higher] compared to control ²	103 patients (3 RCTs) ^{B,E,I}
Total sleep time [PSG]	⊕⊕⊕○ MODERATE ^a	The mean difference in the CBTI group was 33.60 minutes higher [17.27 minutes lower to 84.47 minutes higher] compared to control ¹	42 patients (1 RCT) ¹

* Critical Outcome
^a 95% CI crosses clinical significance threshold and/or <200 participants
^b Inconsistent subgroup differences or overall inconsistency
^c Risk of bias [no patient blinding, allocation concealment]
¹ Meets the clinical significance threshold
² Does not meet the clinical significance threshold

Table S38 - Summary of Findings table for CBT-I for the treatment of Psychological and Behavioral insomnia in adults with Insomnia and medical comorbidities

References: Epstein 2007 (A); Jansson-Frojmark 2012 (B); Edinger 2005 (C); Savard 2014 (D); Ritterband 2012 (E); Currie 2000 (F); Savard 2005 (G); Smith 2015 (H); Martinez 2014 (I); Miro 2011 (J); Hou 2014 (K); Pigeon 2012 (L); Dirksen 2007 (M); Chen 2008 (N); Mathews 2014 (O);

Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Quality of sleep * [Diary]	⊕⊕○○ LOW ^{a,b,c}	The standardized mean difference in the CBTI group was 0.15 points higher [1.27 points lower to 1.57 points higher] compared to control ²	102 patients (2 RCT) ^{A,B}
Quality of sleep [PSQI]	⊕⊕⊕○ MODERATE ^c	The standardized mean difference in the CBTI group was 0.88 points lower [0.61 points to 1.14 points lower] compared to control ¹	243 patients (4 RCT) ^{G,J,K,L}
Sleep latency * [Diary]	⊕⊕⊕○ MODERATE ^c	The mean difference in the CBTI group was 8.46 minutes lower [1.97 min to 14.96 mins lower] compared to control ²	220 patients (6 RCTs) ^{A,C,D,E,F,G,H}
Sleep latency [PSG]	⊕⊕○○ LOW ^{a,c}	The mean difference in the CBTI group was 3.11 minutes higher [2.83 min lower to 9.05 mins higher] compared to control ²	126 patients (2 RCTs) ^{H,I}

Wake after sleep onset * [Diary]	⊕⊕○○ LOW _{a,c}	The mean difference in the CBTI group was 15.79 minutes lower [8.16 to 23.43 minutes lower] compared to control ²	543 patients (7 RCTs) _{A,C,D,E,F,G,H,I}
Wake after sleep onset [Act]	⊕⊕○○ LOW _{a,b,c}	The mean difference in the CBTI group was 6.32 minutes lower [12.41 mins lower to 0.23 min higher] compared to control ²	184 patients (3 RCT) _{C,D,I}
Wake after sleep onset [PSG]	⊕⊕○○ LOW _{a,b,c}	The mean difference in the CBTI group was 14.18 minutes lower [57.47mins lower to 29.11 mins higher] compared to control ²	141 patients (2 RCT) _{H,I}
Remission rate* [ISI, Diary]	⊕⊕⊕○ MODERATE _c	The percentage of patients achieving "remission" in the CBTI group was 30% higher [23% to 38% higher] compared to control ¹	465 patients (6 RCT) _{B,E,F,G,H,I}
Responder rate* [ISI, Diary]	⊕⊕○○ LOW _{a,c}	The percentage of patients considered "responders" in the CBTI group was 59% higher [43% to 75% higher] compared to control ¹	66 patients (2 RCT) _{B,C}
Cognitive function [DBAS]	⊕⊕○○ LOW _{a,c}	The mean difference in the CBTI group was 1.56 points lower [0.59 to 2.53 points lower] compared to control ¹	201 patients (1 RCT) _E
Daytime fatigue [MFI, FSS]	⊕⊕⊕○ MODERATE _c	The std mean difference in the CBTI group was 0.53 points lower [0.22 to 0.84 points lower] compared to control ¹	167 patients (4 RCT) _{F,J,M,N}
Insomnia severity [ISI]	⊕⊕○○ LOW _{a,c}	The mean difference in the CBTI group was 0.78 points lower [0.43 to 1.12 points lower] compared to control ¹	401 patients (5 RCT) _{B,E,I,M,N}
Insomnia severity [ISQ]	⊕⊕○○ LOW _{a,b,c}	The mean difference in the CBTI group was 0.31 points lower [1.74 points lower to 1.11 points higher] compared to control ²	42 patients (1 RCT) _C
Number of awakenings [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the CBTI group was 0.11 points lower [0.7 to 0.92 points lower] compared to control ²	83 patients (2 RCTs) _{G,Q}
Sleep efficiency [Diary]	⊕⊕⊕○ MODERATE _c	The mean difference in the CBTI group was 5.87% higher [3.46 % to 8.29% higher] compared to control ²	543 patients (8 RCTs) _{A,C,D,E,F,G,H,L}
Sleep efficiency [Actigraphy]	⊕⊕○○ LOW _{a,c}	The mean difference in the CBTI group was 3.11% higher [1.05% to 5.18% higher] compared to control ²	186 patients (3 RCTs) _{A,C,H}
Sleep efficiency [PSG]	⊕⊕○○ LOW _{a,c}	The mean difference in the CBTI group was 2.1% higher [1.14% lower to 5.35% higher] compared to control ²	141 patients (2 RCTs) _{G,H}
Total wake time [Diary]	⊕⊕○○ LOW _{a,b,c}	The mean difference in the CBTI group was 37.64 minutes lower [19.71 to 55.58 minutes lower] compared to control ¹	351 patients (5 RCTs) _{B,C,D,G,L}
Total wake time [Act]	⊕⊕○○ LOW _{a,c}	The mean difference in the CBTI group was 16.96 minutes lower [1.22 minutes to 32.71 minutes lower] compared to control ²	38 patients (1 RCTs) _C
Total wake time [PSG]	⊕⊕○○ LOW _{a,c}	The mean difference in the CBTI group was 1.37 minutes lower [23.05 minutes to 20.31 minutes higher] compared to control ²	57 patients (1 RCT) _G
Total sleep time [Diary]	⊕⊕○○ LOW _{a,c}	The mean difference in the CBTI group was 0.7 minutes lower [10.28 minutes lower to 8.87 minutes higher] compared to control ²	583 patients (9 RCTs) _{A-H,L}
Total sleep time [Actigraphy]	⊕⊕○○ LOW _{a,c}	The mean difference in the CBTI group was 8.76 minutes lower [37.36 minutes lower to 19.83 minutes higher] compared to control ²	184 patients (3 RCTs) _{A,C,H}
Total sleep time [PSG]	⊕⊕○○ LOW _{a,c}	The mean difference in the CBTI group was 14.95 minutes lower [36.36 minutes lower to 6.46 minutes higher] compared to control ²	141 patients (2 RCTs) _{G,H}

* Critical Outcome

a. 95% CI crosses clinical significance threshold and/or <200 participants

b. Inconsistent subgroup differences or overall inconsistency

c. Risk of bias [no patient blinding, allocation concealment]

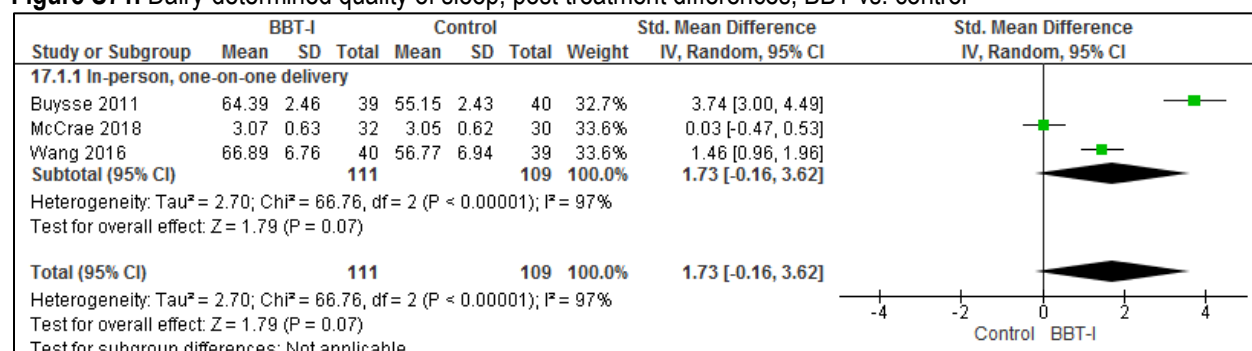
¹ Meets the clinical significance threshold

² Does not meet the clinical significance threshold

Brief Behavioral Therapies (BBT)

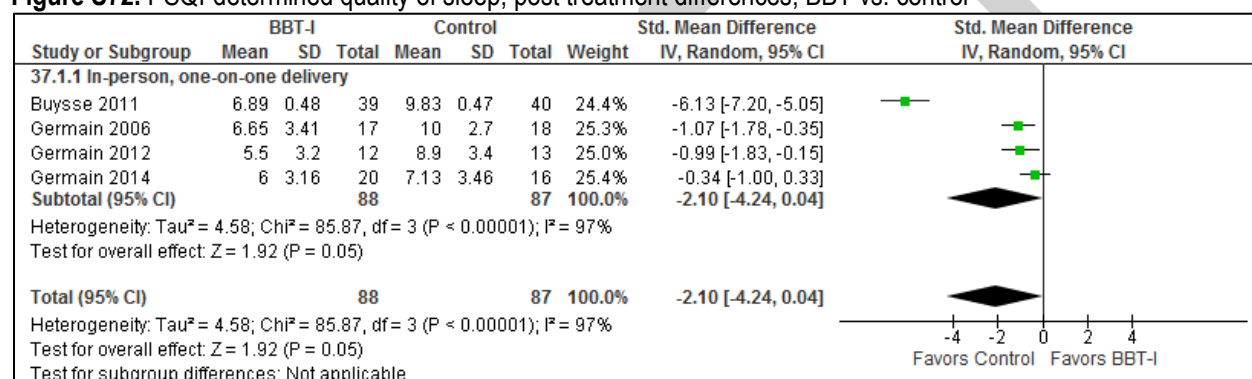
Quality of sleep: Diary

Figure S71. Dairy-determined quality of sleep, post treatment differences, BBT vs. control



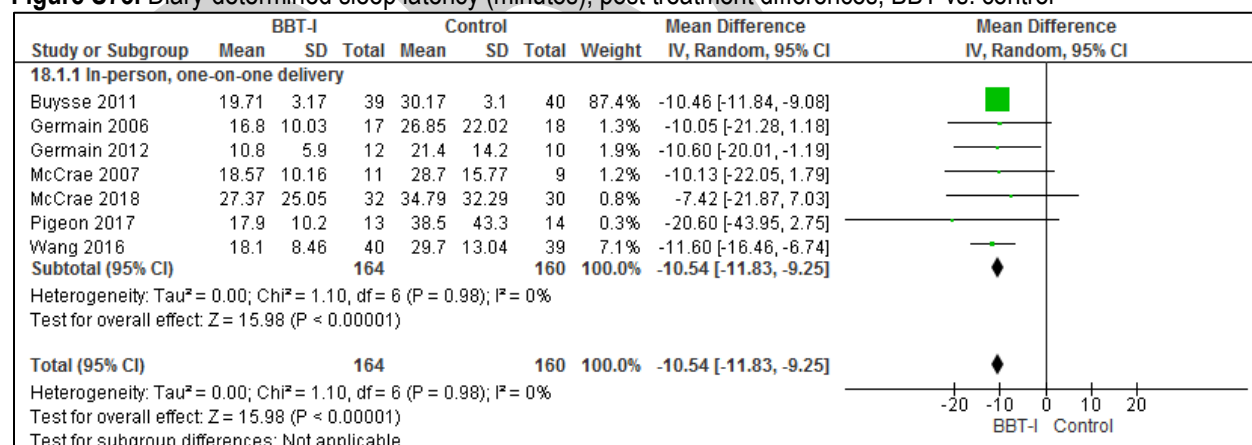
Quality of sleep: PSQI

Figure S72. PSQI-determined quality of sleep, post treatment differences, BBT vs. control



Sleep latency: Diary

Figure S73. Dairy-determined sleep latency (minutes), post treatment differences, BBT vs. control



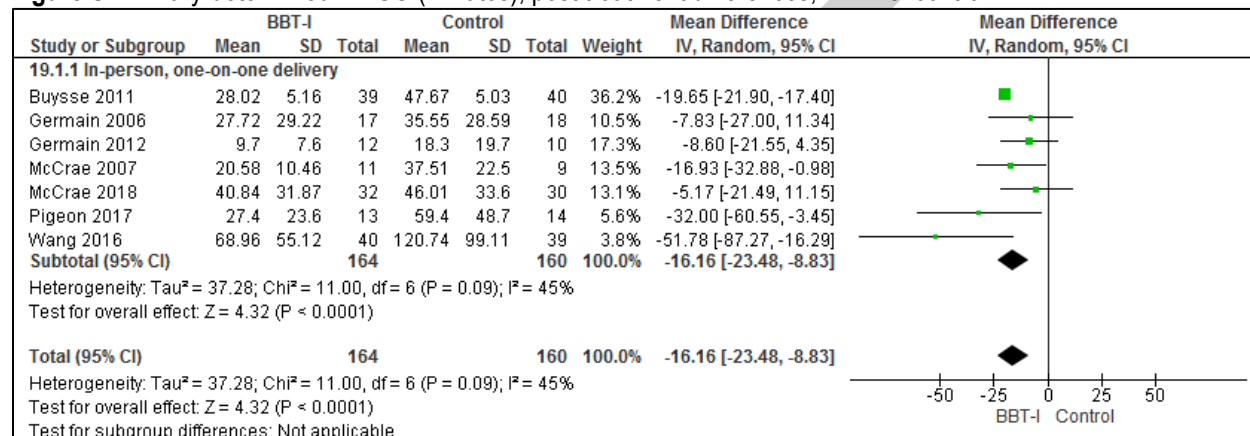
Sleep latency: PSQI

Table S39. PSG-determined sleep latency (min), post treatment differences, BBT vs. control

Study	Delivery method	BBT			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Buyse 2011	In-person, one-on-one delivery	29.21	4.81	39	25.59	4.74	40	3.62 [1.51, 5.73]
Germain 2012	In-person, one-on-one delivery	18.2	11.9	12	14.7	8.7	12	3.50 [-4.84, 11.84]

Wake after sleep onset: Diary

Figure S74. Diary-determined WASO (minutes), post treatment differences, BBT vs. control



Wake after sleep onset

Table S40. Actigraphy-determined wake after sleep onset (min), post treatment differences, BBT vs. control

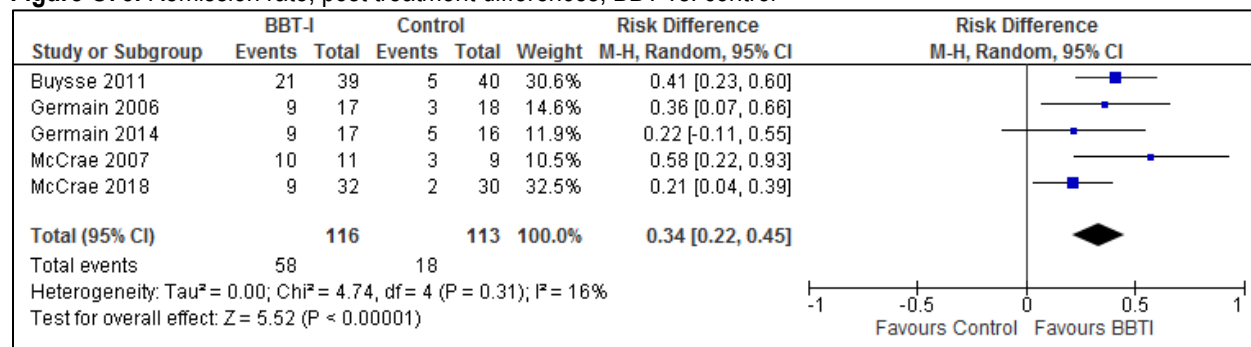
Study	Delivery method	BBT			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Buyse 2011	In-person, one-on-one delivery	46.62	3.99	39	55.38	3.97	40	-8.76 [-10.52, -7.00]
McCrae 2018	In-person, one-on-one delivery	32.05	17.06	32	41	15.1	30	-8.95 [-16.96, -0.94]

Table S41. PSG-determined wake after sleep onset (min), post treatment differences, BBT vs. control

Study	Delivery method	BBT			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Buyse 2011	In-person, one-on-one delivery	85.26	8.49	40	92.46	8.38	40	-7.20 [-10.92, -3.48]
Germain 2012	In-person, one-on-one delivery	45.1	19.7	12	33	24.5	12	12.10 [-5.69, 29.89]

Remission rate

Figure-S75. Remission rate, post treatment differences, BBT vs. control



Responder rate

Table-S42. Responder rate, post treatment differences, BBT vs. control

Study	Delivery method	BBT		Control		Risk Difference [95% CI]
		Events	Total	Events	Total	
Germain 2014	In-person, one-on-one, delivery	13	17	8	16	0.26[-0.05, 0.58]
Pigeon 2017	In-person, one-on-one, delivery	4	11	2	13	0.21[-0.14, 0.56]

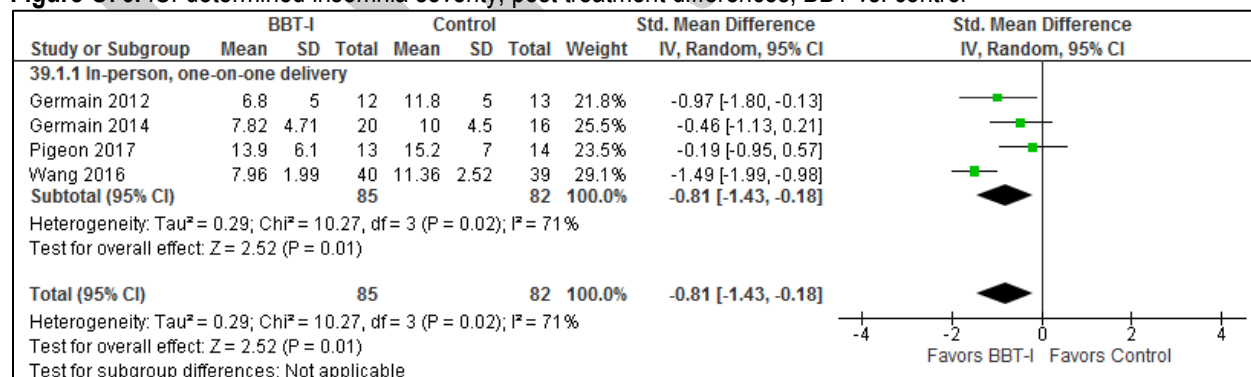
Beliefs and attitudes about sleep

Table S43. Dysfunctional Beliefs and Attitudes about Sleep (DBAS)-determined beliefs and attitudes about sleep, post treatment differences, BBT vs. control

Study	Delivery method	BBT			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Wang 2016	In-person, one-on-one delivery	4.88	0.89	40	5.09	0.99	39	-0.22 [-0.66, 0.22]

Insomnia severity

Figure-S76. ISI-determined insomnia severity, post treatment differences, BBT vs. control



Number of awakenings

Table-S44. Diary-determined no. of awakenings (nights/week), post treatment differences, BBT vs. control

Study	Delivery method	BBT			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
McCrae 2007	In-person, one-on-one delivery	1.64	0.56	11	1.86	0.47	9	-0.22 [-0.67, 0.23]
Pigeon 2017	In-person, one-on-one delivery	1.5	1	13	2	1.2	14	-0.50[-1.33, 0.33]

Sleep efficiency

Figure-S77. Diary-determined sleep efficiency (%), post treatment differences, BBT vs. control

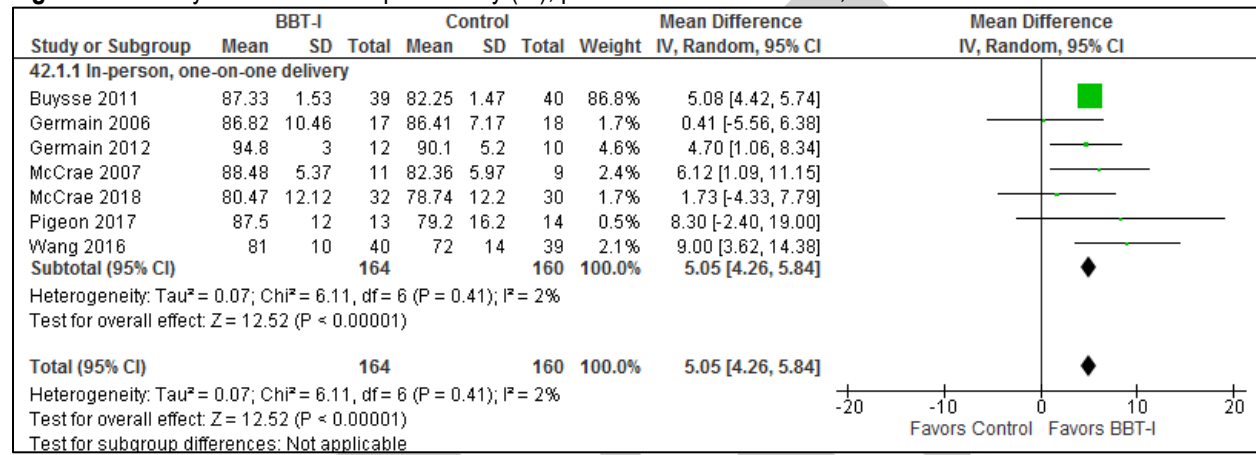


Figure-S45. Actigraphy-determined sleep efficiency (%), post treatment differences, BBT vs. control

Study	Delivery method	BBT			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Buyse 2011	In-person, one-on-one delivery	82.82	1.16	39	79.99	1.15	40	2.83 [2.32, 3.34]
McCrae 2018	In-person, one-on-one delivery	86.39	7.36	32	82.58	7.05	30	-3.81 [0.22, 7.40]

Figure-S46. PSG-determined sleep efficiency (%), post treatment differences, BBT vs. control

Study	Delivery method	BBT			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Buyse 2011	In-person, one-on-one delivery	74.86	1.67	39	74.16	1.64	40	0.70 [-0.03, 1.43]
Germain 2012	In-person, one-on-one delivery	84.5	6.5	12	89.1	5	12	-4.60 [-9.24, 0.04]

Total sleep time

Figure-S78. Diary-determined total sleep time (min), post treatment differences, BBT vs. control

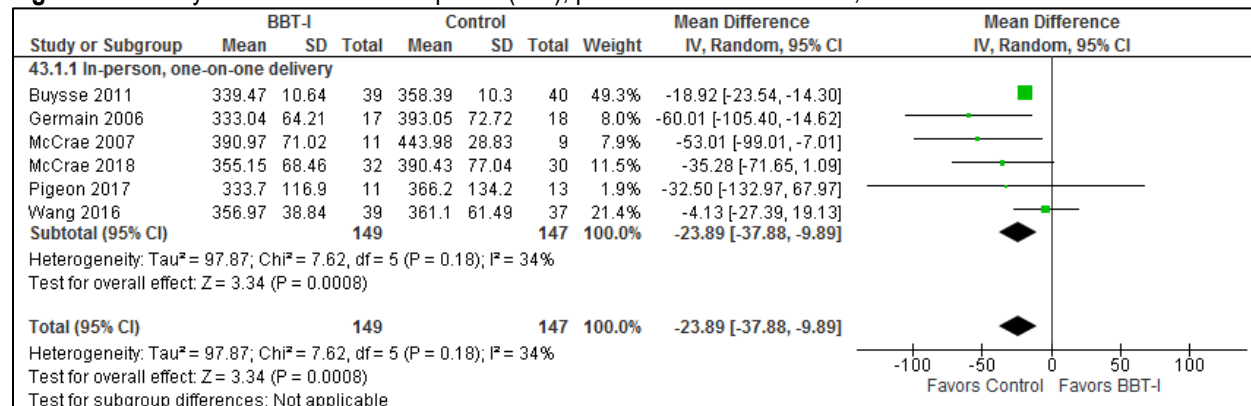


Table-S47. Actigraphy-determined total sleep time (min), post treatment differences, BBT vs. control

Study	Delivery method	BBT			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Buyse 2011	In-person, one-on-one delivery	338.16	8.14	39	370.44	8.02	40	-32.28 [-35.84, -28.72]
McCrae 2018	In-person, one-on-one delivery	371.79	47.69	32	375.75	63.46	30	-3.96 [-32.04, 24.12]

Figure-S48. PSG-determined total sleep time (min), post treatment differences, BBT vs. control

Study	Delivery method	BBT			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Buyse 2011	In-person, one-on-one delivery	324.82	9.43	39	333.31	9.31	40	-8.49 [-12.62, -4.36]
Germain 2012	In-person, one-on-one delivery	355.6	64.9	12	389.7	40	12	-34.10 [-77.23, 9.03]

Table S49 – Summary of Findings table for BBT for the treatment of Psychological and Behavioral insomnia in adults

. **References:** Buysse 2011 (A); Wang 2016 (B); Germain 2006 (C); Germain 2012 (D); Germain 2014 (E); McCrae 2007 (F); Pigeon 2017 (G); McCrae 2018 (H); Pigeon 2017 (I)

Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference	No of Participants (studies)
		CBTI vs Control	
Quality of sleep* [Diary]	⊕⊕○○ LOW ^{a,b,c}	The standardized mean difference in the BBTI group was 1.73 points higher ¹ [0.16 points lower to 3.62 points higher] compared to control	220 patients (3 RCT) ^{A,B,H}
Quality of sleep [PSQI]	⊕⊕○○ LOW ^{a,c}	The standardized mean difference in the BBTI group was 0.76 points lower ¹ [0.28 points to 1.25 points lower] compared to control	96 patients (3 RCT) ^{C,D,E}
Sleep latency* [Diary]	⊕⊕⊕○ MODERATE	The mean difference in the BBTI group was 10.54 minutes lower ² [9.25 mins to 11.83 mins lower] compared to control	324 patients (7 RCT) ^{A,B,C,D,F,G,H}
Sleep latency [PSG]	⊕⊕⊕○ MODERATE ^a	The mean difference in the BBTI group ranged from 3.50 to 3.62 minutes higher ² compared to control	103 patients (2 RCT) ^{A,D}
Wake after sleep onset* [Diary]	⊕⊕○○ LOW ^{a,b}	The mean difference in the BBTI group was 16.16 minutes lower ² [8.83 mins to 23.48 mins lower] compared to control	324 patients (7 RCT) ^{A,B,C,D,F,G,H}
Wake after sleep onset [Actigraphy]	⊕⊕⊕○ MODERATE ^a	The mean difference in the BBTI group ranged from 8.76 to 8.95 minutes lower ² compared to control	141 patients (2 RCT) ^{A,H}
Wake after sleep onset [PSG]	⊕⊕○○ LOW ^{a,c}	The mean difference in the BBTI group ranged from 7.20 minutes lower to 12.10 minutes higher ² compared to control	103 patients (2 RCT) ^{A,D}
Remission rate* [Diary/ISI]	⊕⊕⊕○ MODERATE ^a	The percentage of patients achieving "remission" in the BBTI group was 34% higher ¹ [22% lower to 45% higher] compared to control	229 patients (5 RCT) ^{A,C,E,F,H}
Responder rate* [Diary/ISI]	⊕⊕⊕○ MODERATE ^a	The percentage of patients considered "responders" in the BBTI group ranged from 21% to 26% higher ¹ compared to control	57 patients (2 RCT) ^{E,G}
Beliefs and attitudes about sleep [DBAS]	⊕⊕○○ LOW ^{a,b}	The mean difference in the BBTI group was 0.22 points lower ² [0.66 points lower to 0.22 points higher] compared to control	79 patients (1 RCT) ^B
Insomnia severity [ISI]	⊕⊕○○ LOW ^{a,b}	The mean difference in the BBTI group was 0.81 point lower ¹ [0.18 to 1.43 points lower] compared to control	167 patients (4 RCT) ^{B,D,E,I}
Number of awakenings [Diary]	⊕⊕⊕○ MODERATE ^a	The mean difference in the BBTI group ranged from 0.22 to 0.50 fewer awakenings compared to control	47 patients (2 RCT) ^{F,I}
Sleep efficiency [Diary]	⊕⊕⊕○ MODERATE ^b	The mean difference in the BBTI group was 5.05% higher ² [4.26% to 5.84% higher] compared to control	304 patients (7 RCT) ^{A,B,C,D,F,G,H}
Sleep efficiency [Actigraphy]	⊕⊕⊕○ MODERATE ^a	The mean difference in the BBTI group I ranged from 3.81% lower to 2.83% higher ² compared to control	141 patients (2 RCT) ^{A,H}
Sleep efficiency [PSG]	⊕⊕○○ LOW ^{a,c}	The mean difference in the BBTI group ranged from 4.60% lower ² to 0.70% higher compared to control	103 patients (2 RCT) ^{A,D}
Total sleep time [Diary]	⊕⊕⊕○ MODERATE ^a	The mean difference in the BBTI group was 23.89 minutes lower ² [9.89 mins to 37.88 mins lower] compared to control	296 patients (6 RCT) ^{A,B,C,F,H,I}
Total sleep time [Actigraphy]	⊕⊕⊕○ MODERATE ^a	The mean difference in the BBTI ranged from 3.96 minutes to 32.28 minutes lower ² compared to control	141 patients (2 RCT) ^{A,H}
Total sleep time [PSG]	⊕⊕⊕○ MODERATE ^a	The mean difference in the BBTI group ranged from 8.49 minutes to 34.10 minutes lower ² compared to control	103 patients (2 RCT) ^{A,D}

* Critical Outcome

^a 95% CI crosses clinical significance threshold and/or <200 participants

^b Risk of bias [no patient blinding, allocation concealment]

^c Inconsistent results

¹ Meets the clinical significance threshold

² Does not meet the clinical significance threshold

Stimulus control

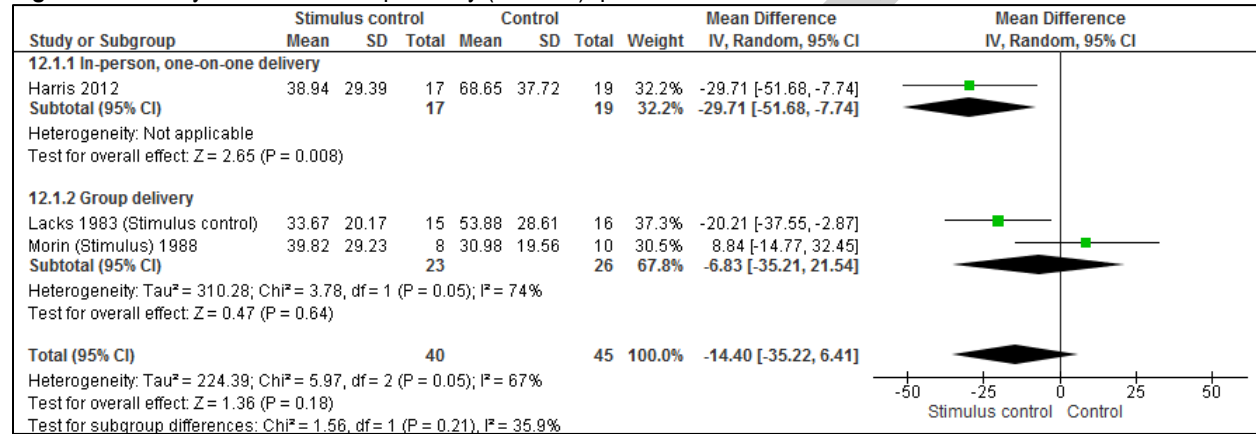
Quality of sleep

Table S50. PSQI-determined quality of sleep, post treatment differences, stimulus control vs. control

Study	Delivery method	Stimulus Control			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person, one-on-one delivery	8.73	2.71	17	11.11	2.72	19	-0.86 [-1.54, -0.17]

Sleep latency

Figure-S79. Diary-determined sleep latency (minutes), post treatment differences, stimulus control vs. control



Wake after sleep onset

Table S51. Diary-determined WASO (minutes), post treatment differences, stimulus control vs. control

Study	Delivery method	Stimulus Control			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person, one-on-one delivery	42.66	37.53	17	80.31	57.38	19	-37.65 [-69.02, -6.28]
Morin 1988	Group delivery	42.88	43.57	8	71.4	39.22	10	-28.52 [-67.28, 10.24]

Wake after sleep onset

Table S52. Actigraphy-determined wake after sleep onset (min), post treatment differences, stimulus control vs. control

Study	Delivery method	Stimulus Control			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person, one-on-one delivery	92.47	44	17	100.19	46.49	19	-7.72 [-37.29, 21.85]

Number of awakenings

Table S53. Diary-determined no. of awakenings (no./nights), post treatment differences, stimulus control vs. control

Study	Delivery method	Stimulus Control			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Morin 1988	Group delivery	1.92	1.13	8	2.61	1.07	10	-0.69 [-1.72, 0.34]

Sleep efficiency

Table S54. Diary-determined total sleep efficiency (%), post treatment differences, stimulus control vs. control

Study	Delivery method	Stimulus Control			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	

Harris 2012	In-person, one-on-one delivery	81.57	7.34	17	68.24	14.14	19	13.33 [6.08, 20.58]
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Table S55. Actigraphy-determined total sleep efficiency (%), post treatment differences, stimulus control vs. control

Study	Delivery method	Stimulus Control			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person, one-on-one delivery	75.61	9.82	17	71.92	11.91	19	3.69 [-3.41, 10.79]

Total sleep time

Table S56. Diary-determined total sleep time (min), post treatment differences, stimulus control vs. control

Study	Delivery method	Stimulus Control			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person, one-on-one delivery	387.95	57.36	17	350.26	76.76	19	37.69 [-6.30, 81.68]
Morin 1988	Group delivery	354.4	83.26	8	340.16	70.29	10	14.24 [-58.06, 86.54]

Table S57. Actigraphy-determined total sleep time (min), post treatment differences, stimulus control vs. control

Study	Delivery method	Stimulus Control			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person, one-on-one delivery	365.12	65.98	17	368.5	72.74	19	-3.38 [-48.70, 41.94]

Table S58 – Summary of Findings table for Stimulus control for the treatment of Psychological and Behavioral insomnia in adults

References: Harris 2012 (A); Lacks 1983 (B); Morin 1988 (C)

Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Quality of sleep [PSQI]	⊕⊕○○ LOW _{a,b}	The standardized mean difference in the Stimulus control group was 0.86 points lower ¹ [0.17 points lower to 1.54 points lower] compared to control	36 patients (1 RCT) ^A
Sleep latency* [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Stimulus control group was 14.4 minutes lower ² [35.22 mins lower to 6.41 mins higher] compared to control	85 patients (3 RCT) ^{A,B,C}
Wake after sleep onset* [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Stimulus control group ranged from 28.52 minutes lower ¹ to 37.65 minutes lower compared to control	54 patients (2 RCT) ^{A,C}
Wake after sleep onset [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the Stimulus control group was 7.72 minutes lower ² [37.29 mins lower to 21.85 mins higher] compared to control	36 patients (1 RCT) ^A
Number of awakenings [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Stimulus control group was 0.69 points lower ¹ [1.72 points lower to 0.34 points higher] compared to control	18 patients (1 RCT) ^C
Sleep efficiency [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Stimulus control group was 13.33% higher ¹ [6.08% to 20.58% higher] compared to control	36 patients (1 RCT) ^A
Sleep efficiency [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the Stimulus control group was 3.69% higher ² [3.41% lower to 10.79% higher] compared to control	36 patients (1 RCT) ^A
Total sleep time [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Stimulus control group ranged from 14.24 minutes to 37.69 minutes higher ¹ compared to control	54 patients (2 RCT) ^{A,C}
Total sleep time [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the Stimulus control group was 3.38 minutes lower ² [48.70 mins lower to 41.94 mins higher] compared to control	36 patients (1 RCT) ^A

* Critical Outcome

^a 95% CI crosses clinical significance threshold and/or <200 participants

^b Risk of bias [no patient blinding, allocation concealment]

¹ Meets the clinical significance threshold

DRAFT

Sleep restriction

Quality of sleep

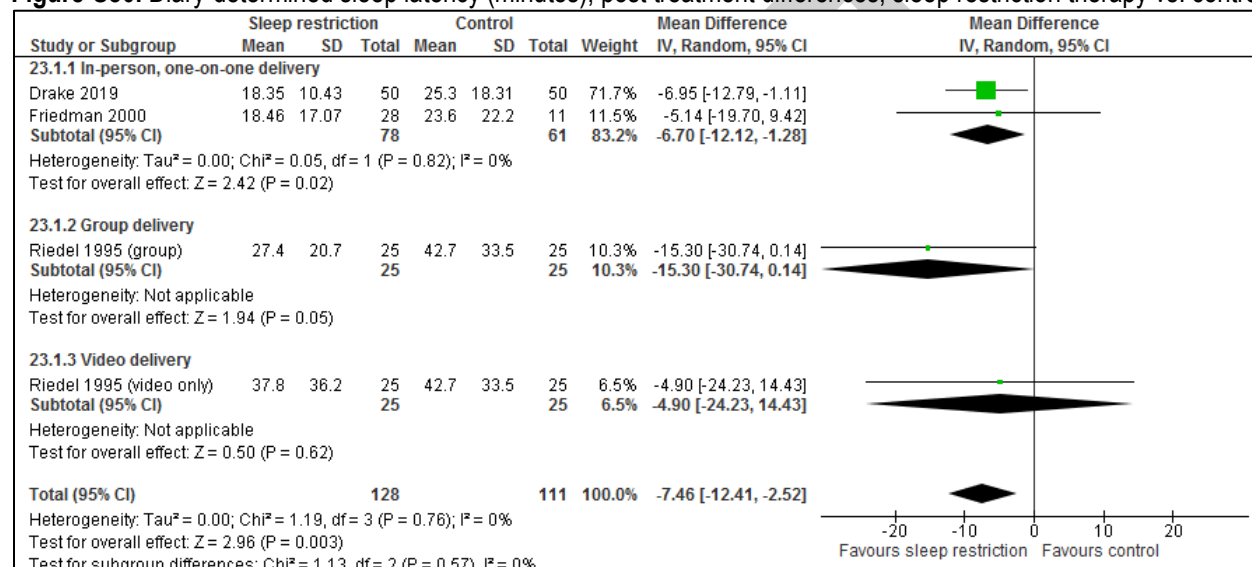
Table S59. Dairy-determined quality of sleep, post treatment differences, sleep restriction therapy vs. control

Study	Delivery method	Sleep Restriction			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Drake 2019	In-person, one-on-one delivery	3.53	0.63	50	3.12	0.64	50	0.64 [0.24, 1.04]
Riedel 1995	Group and video delivery	2.5	1.55	50	4.5	1.7	10	0.8 [0.31, 1.30]

*Pooled data video and group for Riedel 1995

Sleep latency: Diary

Figure-S80. Diary-determined sleep latency (minutes), post treatment differences, sleep restriction therapy vs. control



*Riedel 1995 (group and video) uses same control data

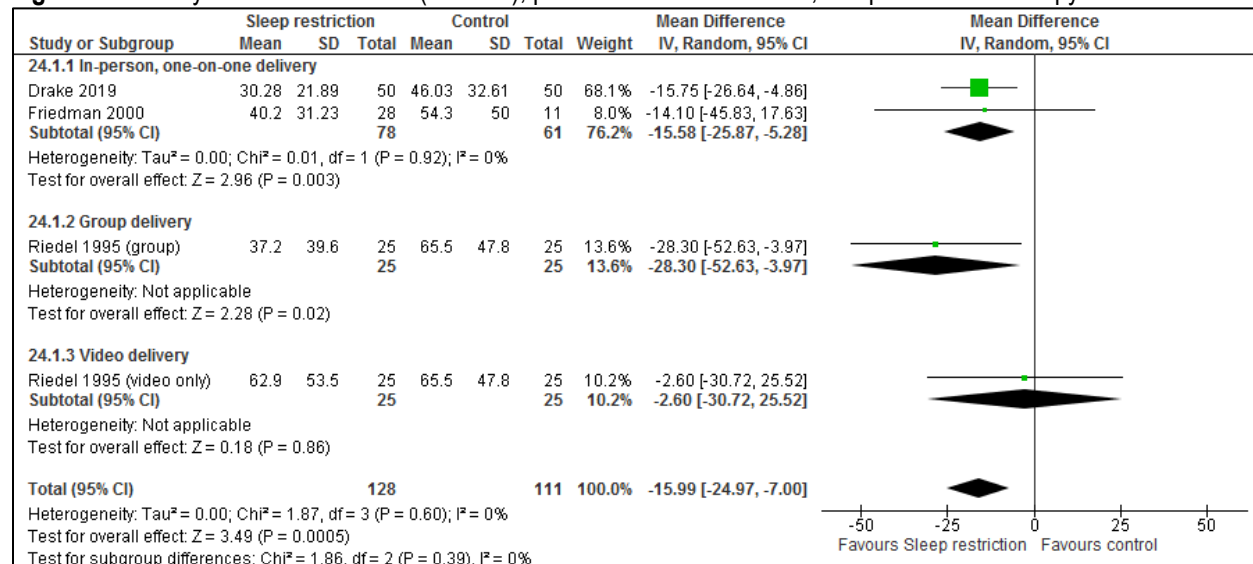
Sleep latency: PSG

Table S60. PSG-determined sleep latency (min), post treatment differences, sleep restriction therapy vs. control

Study	Delivery method	Sleep Restriction			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Friedman 2000	In-person, one-on-one delivery	9.69	13.88	15	11.6	10.9	4	-1.91 [-14.69, 10.87]

Wake after sleep onset: Diary

Figure-S81. Diary-determined WASO (minutes), post treatment differences, sleep restriction therapy vs. control



*Riedel 1995 (group and video) uses same control data

Wake after sleep onset: Actigraphy

Table S61. Actigraphy-determined wake after sleep onset (min), post treatment differences, sleep restriction therapy vs. control

Study	Delivery method	Sleep Restriction			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Friedman 2000	In-person, one-on-one delivery	29.01	23.34	27	27.6	39	10	1.41[-24.32, 27.14]

Table S62. PSG-determined wake after sleep onset (min), post treatment differences, sleep restriction therapy vs. control

Study	Delivery method	Sleep Restriction			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Friedman 2000	In-person, one-on-one delivery	42.6	20.14	15	29	17.7	4	13.60[-6.52, 33.72]

Remission rate

Table-S63. ISI/ Diary-determined remission rate, post treatment differences, sleep restriction therapy vs. control

Study	Delivery method	Sleep Restriction		Control		Risk Difference [95% CI]
		Events	Total	Events	Total	
Drake 2019	In-person, one-on-one, delivery	28	49	16	48	0.24[0.05, 0.43]

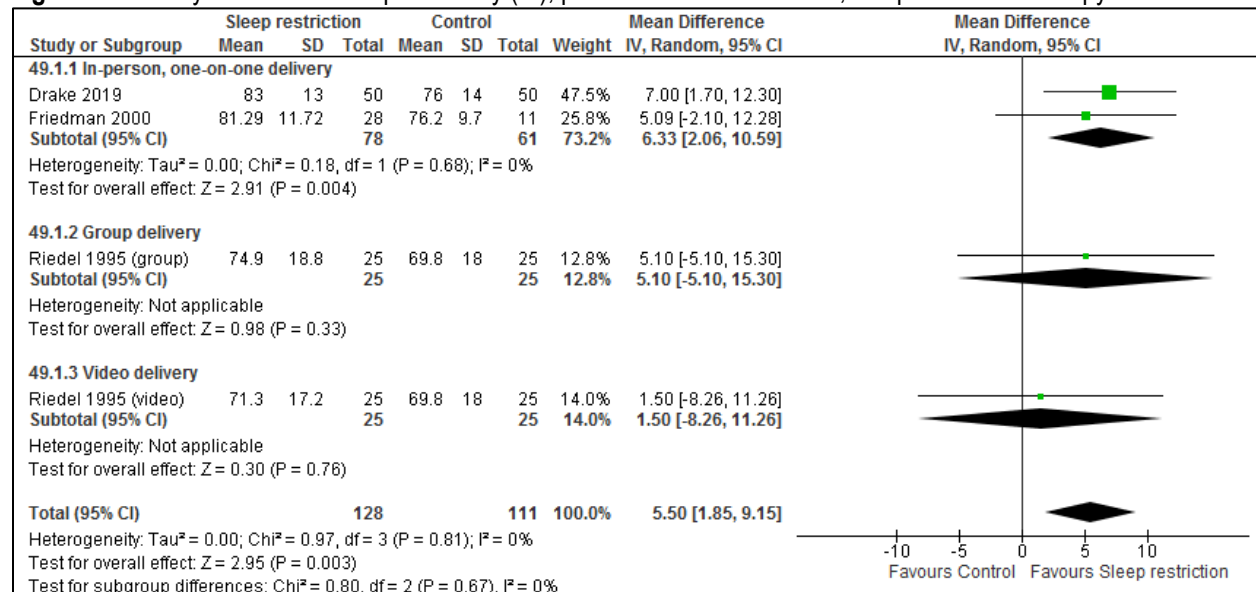
Insomnia severity

Table-S64. ISI-determined insomnia severity, post treatment differences, sleep restriction therapy vs. control

Study	Delivery method	Sleep Restriction			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Drake 2019	In-person, one-on-one delivery	8.64	4.18	50	14.24	4.49	50	-1.28[-1.71, -0.85]

Sleep efficiency

Figure-S82. Diary-determined sleep efficiency (%), post treatment differences, sleep restriction therapy vs. control



*Riedel 1995 (group and video) uses same control data

Table-S65. Actigraphy-determined sleep efficiency (%), post treatment differences, sleep restriction therapy vs. control

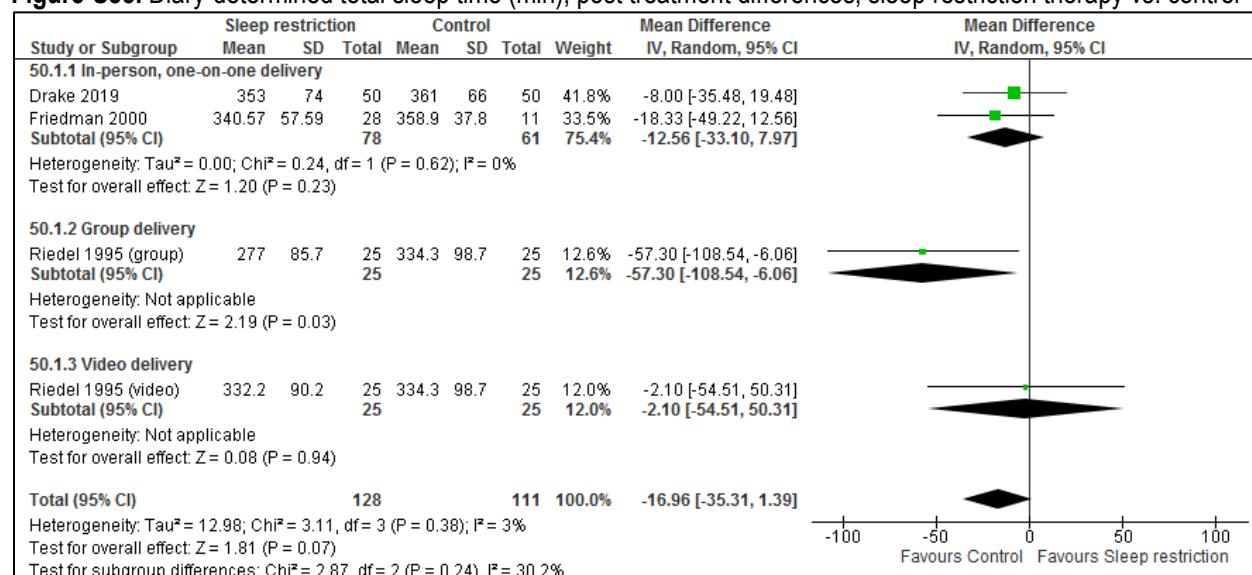
Study	Delivery method	Sleep Restriction			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Friedman 2000	In-person, one-on-one delivery	89.51	5.86	27	89.4	6.6	10	0.11 [-4.24, 4.76]

Table-S66. PSG-determined sleep efficiency (%), post treatment differences, sleep restriction therapy vs. control

Study	Delivery method	Sleep Restriction			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Friedman 2000	In-person, one-on-one delivery	84.49	7.59	15	90.1	4	3	-5.61 [-11.55, 0.33]

Total sleep time

Figure-S83. Diary-determined total sleep time (min), post treatment differences, sleep restriction therapy vs. control



*Riedel 1995 (group and video) uses same control data

Table-S67. Actigraphy-determined total sleep time (min), post treatment differences, sleep restriction therapy vs. control

Study	Delivery method	Sleep Restriction			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Friedman 2000	In-person, one-on-one delivery	381.94	27.82	27	422.2	55.4	10	-40.26 [-76.16, -4.36]

Table-S68. PSG-determined total sleep time (min), post treatment differences, sleep restriction therapy vs. control

Study	Delivery method	Sleep Restriction			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Friedman 2000	In-person, one-on-one delivery	339.99	38.95	15	383.9	43.91	4	-43.91 [-90.52, 2.70]

Table S69 – Summary of Findings table for Sleep restriction for the treatment of Psychological and Behavioral insomnia in adults

References: Riedel 1995 (A); Friedman 2000 (B); Epstein 2012 (C); Drake 2019 (D)			
Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Quality of sleep* [Diary]	⊕⊕○○ LOW _{a,b}	The standardized mean difference in the Sleep restriction group was 0.71 points higher ¹ [0.42 to 1.0 points higher] compared to control	175 patients (2 RCT) ^{A,D}
Sleep latency* [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 7.46 minutes lower ² [2.52 mins lower to 12.41 mins higher] compared to control	214 patients (3 RCT) ^{A,B,D}
Sleep latency [PSG]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 1.91 minutes lower ² [14.69 mins lower to 10.87 mins higher] compared to control	19 patients (1 RCT) ^B
Wake after sleep onset* [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 15.99 minutes lower ¹ 7.00 mins to 24.97 mins lower] compared to control	214 patients (3 RCT) ^{A,B,D}
Wake after sleep onset [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 1.41 minutes higher ² [24.32 mins lower to 27.14 mins higher] compared to control	37 patients (1 RCT) ^B
Wake after sleep onset [PSG]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 13.6 minutes higher ² [6.52 mins lower to 33.72 mins higher] compared to control	19 patients (1 RCT) ^B
Remission rate* [ISI]	⊕⊕○○ LOW _{a,b}	The percentage of patients achieving "remission" in the Sleep restriction group was 20% higher ¹ [9% to 32% higher] compared to control	170 patients (2 RCT) ^{C,D}
Responder rate* [ISI]	⊕⊕○○ LOW _{a,b}	The percentage of patients considered "responders" in the Sleep restriction group ranged from 35% higher ¹ [14% to 55% higher] compared to control	73 patients (1 RCT) ^C
Insomnia severity [ISI]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 1.28 points lower ¹ [0.85 to 1.71 points lower] compared to control	100 patients (1 RCT) ^D
Sleep efficiency [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 5.50% higher ² [1.85% lower to 9.15% higher] compared to control	214 patients (3 RCT) ^{A,B,D}
Sleep efficiency [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 0.11% higher ² 4.54% lower to 4.76% higher] compared to control	37 patients (1 RCT) ^B
Sleep efficiency [PSG]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 5.61% lower ² [11.55% lower to 0.33% higher] compared to control	19 patients (1 RCT) ^B
Total sleep time [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 16.96 minutes lower ² [35.31 mins lower to 1.39 mins higher] compared to control	214 patients (3 RCT) ^{A,B,D}
Total sleep time [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 40.26 minutes lower ² [4.36 mins to 76.16 mins lower] compared to control	37 patients (1 RCT) ^B
Total sleep time [PSG]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep restriction group was 43.91 minutes lower ² [90.52 mins lower to 2.7 mins higher] compared to control	19 patients (1 RCT) ^B

* Critical Outcome
a. 95% CI crosses clinical significance threshold and/or <200 participants
b. Risk of bias [no patient blinding, allocation concealment]
¹ Meets the clinical significance threshold
² Does not meet the clinical significance threshold

Relaxation therapy

Quality of sleep

Table S70. Diary-determined quality of sleep (minutes), post treatment differences, relaxation therapy vs. control

Study	Delivery method	Relaxation Therapy			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Means 2000	In-person delivery	3.4	0.4	28	3	0.4	29	0.99 [0.43, 1.54]
Creti 2005	Audio delivery	3.31	0.68	14	3.32	0.65	13	-0.01 [-0.77, 0.74]

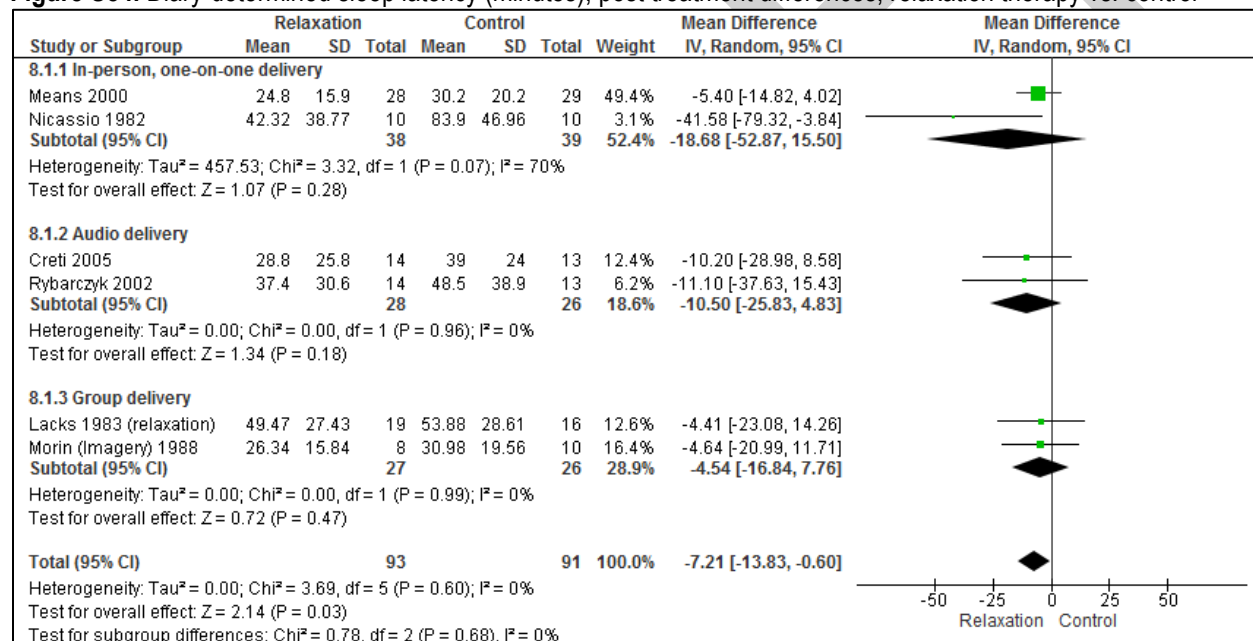
Quality of sleep (PSQI)

Table S71. PSQI-determined quality of sleep, post treatment differences, relaxation therapy vs. control

Study	Delivery method	Relaxation Therapy			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Rybarczyk 2002	Audio delivery	7.5	3.6	14	10.7	2.8	13	-0.96 [-1.76, -0.15]

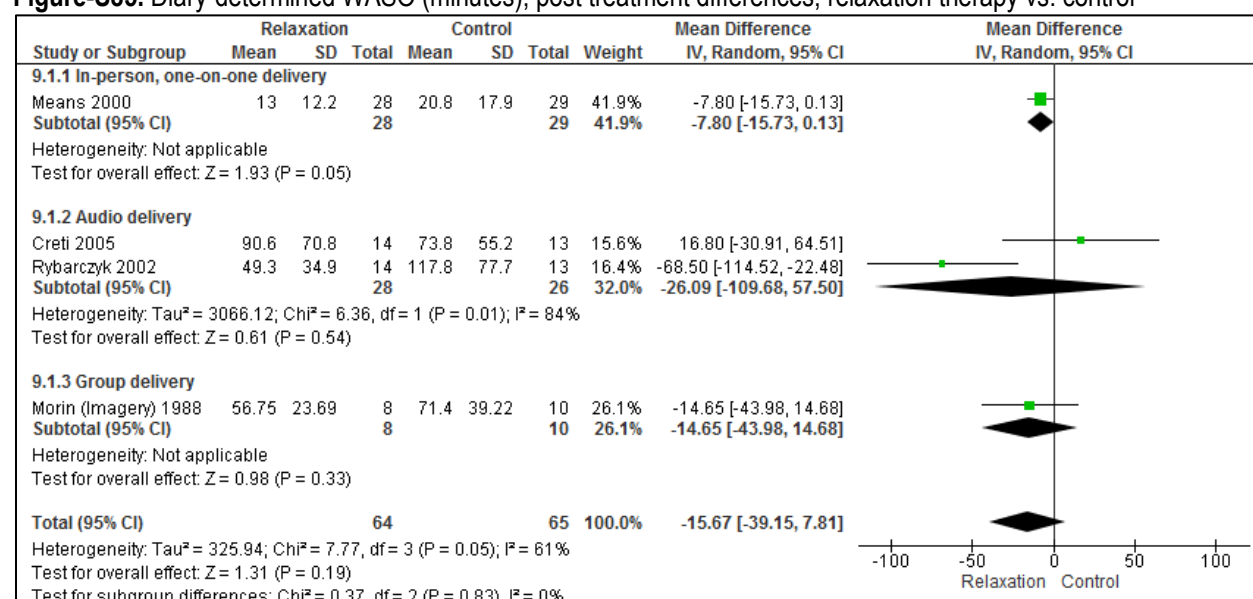
Sleep latency

Figure S84. Diary-determined sleep latency (minutes), post treatment differences, relaxation therapy vs. control



Wake after sleep onset

Figure-S85. Diary-determined WASO (minutes), post treatment differences, relaxation therapy vs. control



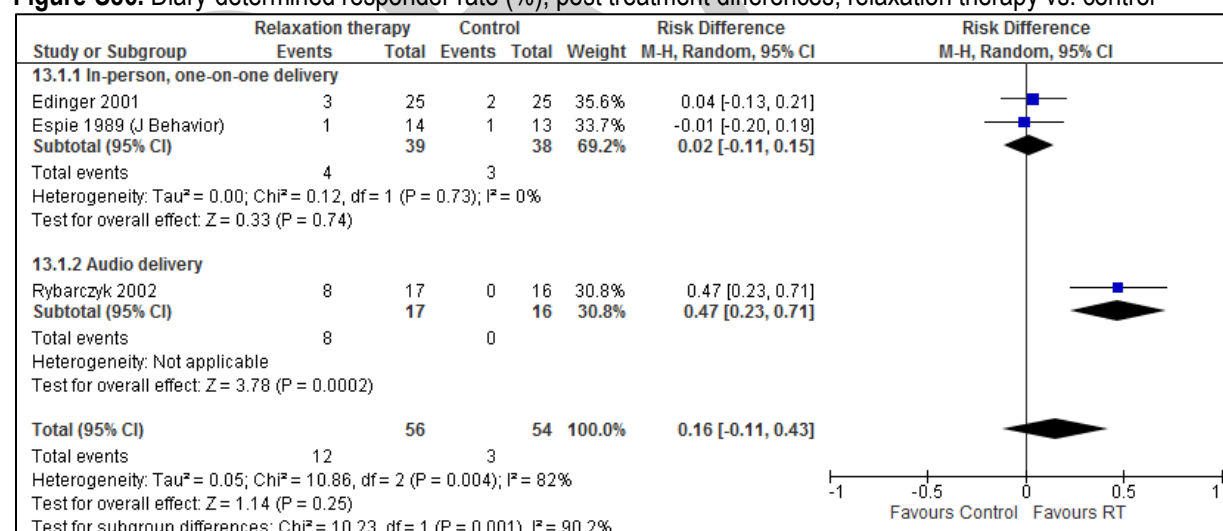
Wake after sleep onset (Act)

Table S72. Actigraphy-determined wake after sleep onset (min), post treatment differences, relaxation therapy vs. control

Study	Delivery method	Relaxation Therapy			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Rybarczyk2002	Audio delivery	77.1	41.5	14	102.1	57.1	13	-25.0 [-62.89, 12.89]

Responder rate

Figure-S86. Diary-determined responder rate (%), post treatment differences, relaxation therapy vs. control



Beliefs and attitudes about sleep

Table S73. Dysfunctional Beliefs and Attitudes about Sleep (DBAS)-determined beliefs and attitudes about sleep, post treatment differences, relaxation therapy vs. control

Study	Delivery method	Relaxation Therapy			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Rybarczyk2002	Audio delivery	18.5	7.9	14	27.2	8.8	13	-1.01 [-1.82, -0.20]
Means 2000	In-person, one-on-one	4.4	1	28	4.7	1.1	29	-0.28[-0.80, 0.24]

Nights using hypnotics

Table S74. Diary-determined nights using hypnotics (nights/week), post treatment differences, relaxation therapy vs. control

Study	Delivery method	Relaxation Therapy			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Rybarczyk2002	Audio delivery	0.9	1.9	14	2.3	3.1	12	-1.40 [-3.42, 0.62]

Number of awakenings

Table S75. Diary-determined number of awakenings (no./night), post treatment differences, relaxation therapy vs. control

Study	Delivery method	Relaxation Therapy			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Morin (Imagery) 1988	Group delivery	2.46	1.24	8	2.61	1.07	10	-0.15 [-1.24, 0.94]

Sleep efficiency

Figure-S87. Diary-determined sleep efficiency (%), post treatment differences, relaxation therapy vs. control

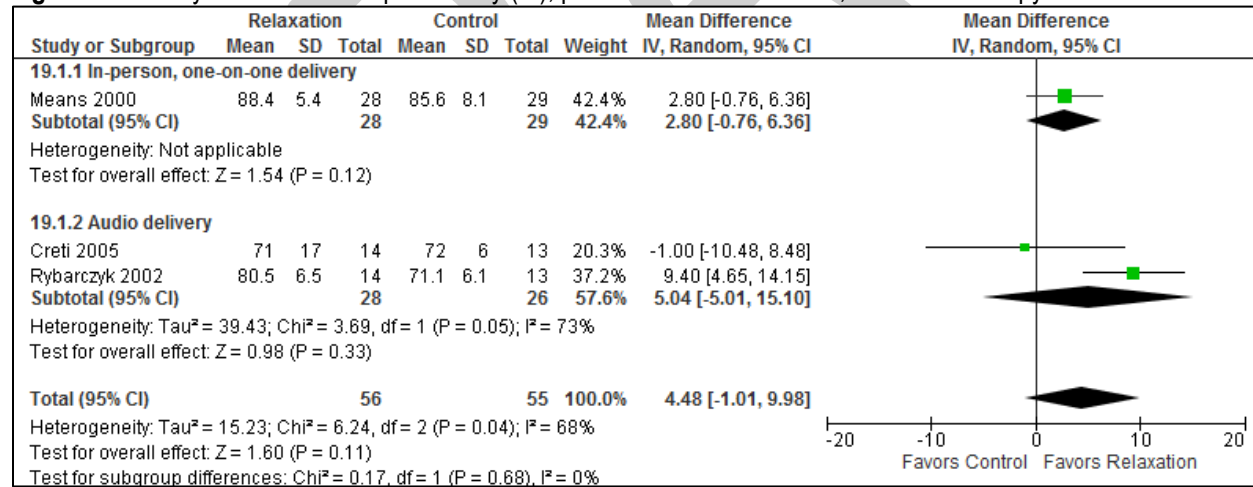


Table S76. Actigraphy-determined sleep efficiency (%), post treatment differences, relaxation therapy vs. control

Study	Delivery method	Relaxation Therapy			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Rybarczyk2002	Audio delivery	77.4	12.8	14	76.8	8.6	13	0.60 [-7.57, 8.77]

Total sleep time

Figure-S88. Diary-determined total sleep time (min) post treatment differences, relaxation therapy vs. control

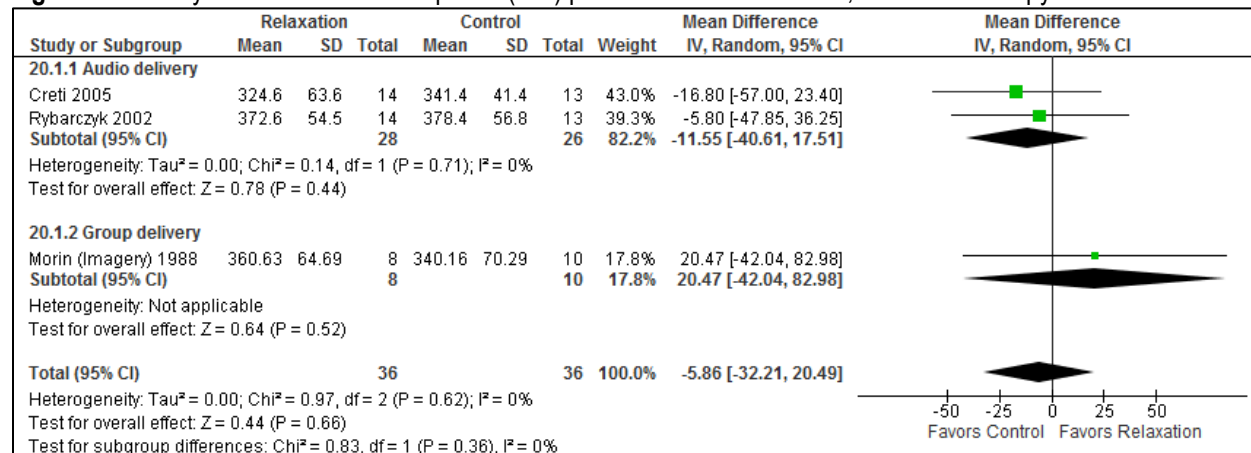


Table S77. Actigraphy-determined total sleep time (min), post treatment differences, relaxation therapy vs. control

Study	Delivery method	Relaxation Therapy			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Rybarczyk2002	Audio delivery	439	109.1	14	466.5	67	13	-27.50 [-95.27, 40.27]

Table S78 – Summary of Findings table for Relaxation therapy for the treatment of Psychological and Behavioral insomnia in adults

References: Means 2000 (A); Creti 2005 (B); Rybarczyk 2002 (C); Nicassio 1982 (D); Lacks 1983 (E); Morin 1988 (F); Edinger 2001 (G); Espie 1989 (H)			
Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Quality of sleep* [Diary]	⊕○○○ VERY LOW _{a,b,c}	The standardized mean difference in the RT group was 0.52 points higher ¹ [0.46 points lower to 1.50 points higher] compared to control	84 patients (2 RCT) ^{A,B}
Quality of sleep [PSQI]	⊕⊕○○ LOW _{a,c}	The standardized mean difference in the RT group was 0.96 points lower ¹ [0.15 points lower to 1.76 points lower] compared to control	27 patients (1 RCT) ^C
Sleep latency* [Diary]	⊕⊕○○ LOW _{a,c}	The mean difference in the RT group was 7.21 mins lower ² [0.60 mins to 13.83 mins lower] compared to control	184 patients (6 RCT) ^{A,B,C,D,E,F}
Wake after sleep onset* [Diary]	⊕⊕○○ LOW _{a,c}	The mean difference in the RT group was 15.67 mins lower ² [39.15 mins lower to 7.81 mins higher] compared to control	129 patients (3 RCT) ^{A,B,C,F}
Responder rate* [Diary/ISI]	⊕○○○ VERY LOW _{a,b,c}	The percentage of patients considered "responders" in the RT group was 16% higher ¹ [11% lower to 43% higher] compared to control	109 patients (3 RCT) ^{C,G,H}
Beliefs and attitudes about sleep [DBAS]	⊕⊕○○ LOW _{a,c}	The mean difference in the RT group ranged from 0.28 to 1.01 points lower ¹ compared to control	84 patients (2 RCT) ^C
Nights using hypnotics [Diary]	⊕⊕○○ LOW _{a,c}	The mean difference in the RT group was 1.4 nights per week lower ² [3.42 nights per week lower to 0.62 nights per week higher] compared to control	26 patients (1 RCT) ^C
Number of awakenings [Diary]	⊕⊕○○ LOW _{a,c}	The mean difference in the RT group was 0.15 points lower ² [1.24 points lower to 0.94 points higher] compared to control	18 patients (1 RCT) ^F
Sleep efficiency [Diary]	⊕⊕○○ LOW _{a,c}	The mean difference in the RT group was 4.48% higher ² [1.01% lower to 9.98% higher] compared to control	111 patients (3 RCT) ^{A,B,C}
Sleep efficiency [Actigraphy]	⊕⊕○○ LOW _{a,c}	The mean difference in the RT group was 0.6% higher ² [7.57% lower to 8.77% higher] compared to control	27 patients (1 RCT) ^C
Total sleep time [Diary]	⊕⊕○○ LOW _{a,c}	The mean difference in the RT group was 5.86 minutes lower ² [32.21 mins lower to 20.49 mins higher] compared to control	72 patients (3 RCT) ^{B,C,F}

Total sleep time [Actigraphy]	⊕⊕○○ LOW ^{a,c}	The mean difference in the RT group was 27.5 minutes lower ² [95.27 mins lower to 40.27 mins higher] compared to control	27 patients (1 RCT) ^c
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* Critical Outcome

^a 95% CI crosses clinical significance threshold and/or <200 participants

^b Inconsistent subgroup differences

^c Risk of bias [no patient blinding, allocation concealment]

¹ Meets the clinical significance threshold

² Does not meet the clinical significance threshold

DRAFT

Sleep hygiene

Sleep latency

Table S79. Diary-determined sleep latency (minutes), post treatment differences, sleep hygiene vs. control

Study	Delivery method	Sleep hygiene			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person delivery	15.1	11.13	17	15.9	16.8	9	-0.80 [-12.98, 11.38]

Wake after sleep onset

Table S80. Diary-determined WASO (minutes), post treatment differences, sleep hygiene vs. control

Study	Delivery method	Sleep hygiene			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person delivery	50.5	28.4	17	65.7	31.2	9	-15.20 [-39.65, 9.25]

Wake after sleep onset

Table S81. Actigraphy-determined wake after sleep onset (min), post treatment differences, sleep hygiene vs. control

Study	Delivery method	Sleep hygiene			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person delivery	59.6	24.3	17	72.2	39.6	9	-12.60 [-40.93, 15.73]

Responder rate

Table S82. Diary-determined responder rate, post treatment differences, sleep hygiene vs. control

Study	Delivery method	Sleep hygiene		Control		Risk Difference [95% CI]
		Events	Total	Events	Total	
Edinger 2005	In-person delivery	8	14	2	12	0.40[0.07,0.74]

Sleep efficiency

Table S83. Diary-determined sleep efficiency (%), post treatment differences, sleep hygiene vs. control

Study	Delivery method	Sleep hygiene			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person delivery	84.7	7.01	17	83.3	7.2	9	1.40 [-4.36, 7.16]

Table S84. Actigraphy-determined sleep efficiency (%), post treatment differences, sleep hygiene vs. control

Study	Delivery method	Sleep hygiene			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person delivery	85.4	5.77	17	82.6	9.3	9	2.80 [-3.87, 9.47]

Total wake time

Table S85. Diary-determined total awake time (min), post treatment differences, sleep hygiene vs. control

Study	Delivery method	Sleep hygiene			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person delivery	76.4	35.57	17	88.7	45	9	-12.30 [-46.22, 21.62]

Table S86. Actigraphy-determined total awake time (min), post treatment differences, sleep hygiene vs. control

Study	Delivery method	Sleep hygiene			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person delivery	72	30.92	17	90.3	51	9	-18.30 [-54.72, 18.12]

Total sleep time

Table S87. Diary-determined total sleep time (min), post treatment differences, sleep hygiene vs. control.

Study	Delivery method	Sleep hygiene			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person delivery	424.8	61.85	17	432.5	54.3	9	-7.70 [-53.78, 38.38]

Table S88. Actigraphy -determined total sleep time (min), post treatment differences, sleep hygiene vs. control

Study	Delivery method	Sleep hygiene			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Edinger 2005	In-person delivery	421.6	51.13	17	428.7	78.3	9	-7.10 [-63.74, 49.54]

Table S89 – Sleep Hygiene for the treatment of Psychological and Behavioral insomnia in adults

References: Edinger 2005 (A)

Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Sleep latency* [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep hygiene group was 0.8 minutes lower ² [12.98 mins lower to 11.38 mins higher] compared to control	26 patients (1 RCT) ^A
Wake after sleep onset* [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep hygiene group was 15.20 minutes lower ² [39.65 mins lower to 9.25 mins higher] compared to control	26 patients (1 RCT) ^A
Wake after sleep onset [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep hygiene group was 12.60 minutes lower ² [40.93 mins lower to 15.73 mins higher] compared to control	26 patients (1 RCT) ^A
Sleep efficiency [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep hygiene group was 1.4% higher ² [4.36% lower to 7.16% higher] compared to control	26 patients (1 RCT) ^A
Sleep efficiency [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep hygiene group was 2.8% higher ² [3.87% lower to 9.47% higher] compared to control	26 patients (1 RCT) ^A
Total wake time [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep hygiene group was 12.3 minutes lower ² [46.22 mins lower to 21.62 mins higher] compared to control	26 patients (1 RCT) ^A
Total wake time [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep hygiene group was 18.3 minutes lower ² [54.72 mins lower to 18.12 mins higher] compared to control	26 patients (1 RCT) ^A
Total sleep time [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep hygiene group was 7.7 minutes lower ² [53.78 mins lower to 38.38 mins higher] compared to control	26 patients (1 RCT) ^A
Total sleep time [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the Sleep hygiene group was 7.1 minutes lower ² [63.74 mins lower to 49.54 mins higher] compared to control	26 patients (1 RCT) ^A

* Critical Outcome

a. 95% CI crosses clinical significance threshold and/or <200 participants

b. Risk of bias [no patient blinding, allocation concealment]

¹ Meets the clinical significance threshold² Does not meet the clinical significance threshold

Biofeedback

Sleep latency

Table S90. Diary-determined sleep latency (minutes), post treatment differences, biofeedback vs. control

Study	Delivery method	Biofeedback			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Nicassio 1982	In-person, one-on-one delivery	31.32	12.73	10	83.9	46.96	10	-52.58 [-82.74, -22.42]

Table S91 – Summary of Findings table for Biofeedback for the treatment of Psychological and Behavioral insomnia in adults

References: Nicassio 1982 (A)

Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Sleep latency * [Diary]	⊕⊕○○ LOW ^{a,b}	The mean difference in the Biofeedback group was 52.58 minutes lower ¹ [22.42 min to 82.74 mins lower] compared to control	20 patients (1 RCT) ^A

* Critical Outcome

^a <200 participants

^b Risk of bias [no patient blinding and selective outcome reporting]

¹ Meets the clinical significance threshold² Does not meet the clinical significance threshold

Paradoxical Intention

Sleep latency

Table S92. Diary-determined sleep latency (minutes), post treatment differences, paradoxical intention vs. control

Study	Delivery method	Paradoxical Intention			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ascher 1978	In-person, one-on-one delivery	28.63	16.64	8	56.88	34.06	17	-28.25 [-48.13, -8.37]
Lacks1983	Group delivery	52.5	21.93	14	53.88	28.61	16	-1.38 [-19.50, 16.74]

*Ascher 1978 (control and waitlist pooled data)

Number of awakenings

Table S93. Diary-determined number of awakenings (min), post treatment differences, paradoxical intention vs. control

Study	Delivery method	Paradoxical Intention			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ascher 1978	In-person, one-on-one delivery	0.5	0.54	8	1.25	0.71	9	-0.75 [-1.35, -0.15]

Table S94 – Summary of Findings table for Paradoxical intention for the treatment of Psychological and Behavioral insomnia in adults

References: Ascher 1978 (A); Lacks 1983 (B)

Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Sleep latency* [Diary]	⊕○○○ VERY LOW ^{a,b,c}	The mean difference in the Paradoxical intention group was 18.31 minutes lower ² [40.36 mins lower to 3.74 mins higher] compared to control	55 patients (2 RCT) ^{A,B}
Number of awakenings [Diary]	⊕⊕○○ LOW ^{a,b}	The mean difference in the Paradoxical intention group was 0.75 points lower ² [0.15 points to 1.35 points lower] compared to control	17 patients (1 RCT) ^A

* Critical Outcome

^a 95% CI crosses clinical significance threshold and/or <200 participants

^b Risk of bias [no patient blinding, allocation concealment]

^c Inconsistency

¹ Meets the clinical significance threshold

² Does not meet the clinical significance threshold

Intensive Sleep Retraining (ISR)

Quality of sleep

Table S95. PSQI-determined sleep quality, post treatment differences, ISR vs. control

Study	Delivery method	ISR			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person delivery	8.88	3.05	16	11.11	2.72	19	-0.76 [-1.45, -0.07]

Sleep latency

Table S96. Diary-determined sleep latency (minutes), post treatment differences, ISR vs. control

Study	Delivery method	ISR			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person delivery	38.41	16.24	16	68.65	37.72	19	-30.24 [-48.97, -11.51]

Wake after sleep onset

Table S97. Diary-determined WASO (minutes), post treatment differences, ISR vs. control

Study	Delivery method	ISR			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person delivery	60.71	59.01	16	80.31	57.38	19	-19.60 [-58.35, 19.15]

Sleep efficiency

Table S98. Diary-determined sleep efficiency (%), post treatment differences, ISR vs. control

Study	Delivery method	ISR			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person delivery	79.85	8.84	16	68.24	14.14	18	11.61 [3.77, 19.45]

Table S99. Actigraphy-determined sleep efficiency (%), post treatment differences, ISR vs. control

Study	Delivery method	ISR			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person delivery	76.57	11.91	16	71.92	11.91	18	4.65 [-3.37, 12.67]

Total sleep time

Table S100. Diary-determined total sleep time (min), post treatment differences, ISR vs. control

Study	Delivery method	ISR			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person delivery	403.23	55.37	16	350.26	76.76	18	52.97 [8.32, 97.62]

Table S101. Actigraphy-determined total sleep time (min), post treatment differences, ISR vs. control

Study	Delivery method	ISR			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Harris 2012	In-person delivery	392.28	62.54	16	368.5	72.74	18	23.78 [-21.70, 69.26]

Table S102 – Summary of Findings table for ISR for the treatment of Psychological and Behavioral insomnia in adults

References: Harris 2012 (A)

Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Quality of sleep [PSQI]	⊕⊕○○ LOW _{a,b}	The standardized mean difference in the ISR group was 0.76 points lower ¹ [0.07 points to 1.45 points lower] compared to control	35 patients (1 RCT) ^A
Sleep latency * [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the ISR group was 30.24 minutes lower ¹ [11.51 min to 48.97 mins lower] compared to control	35 patients (1 RCT) ^A
Wake after sleep onset * [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the ISR group was 19.60 minutes lower ² [58.35 mins lower to 19.15 mins higher] compared to control	35 patients (1 RCT) ^A
Sleep efficiency [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the ISR group was 11.61% higher ¹ [3.77 to 19.45% higher] compared to control	34 patients (1 RCT) ^A
Sleep efficiency [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the ISR group was 4.65% higher ² [3.37% lower to 12.67% higher] compared to control	34 patients (1 RCT) ^A
Total sleep time [Diary]	⊕⊕○○ LOW _{a,b}	The mean difference in the ISR group was 52.97 minutes higher ¹ [8.32 to 97.62 mins higher] compared to control	34 patients (1 RCT) ^A
Total sleep time [Actigraphy]	⊕⊕○○ LOW _{a,b}	The mean difference in the ISR group was 23.78 minutes higher ¹ [21.70 mins lower to 69.26 mins higher] compared to control	34 patients (1 RCT) ^A

* Critical Outcome

^a 95% CI crosses clinical significance threshold and/or <200 participants^b Risk of bias [no patient blinding, allocation concealment]¹ Meets the clinical significance threshold² Does not meet the clinical significance threshold

Mindfulness

Quality of sleep

Table S103. PSQI-determined quality of sleep, post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Zhang 2015	Group delivery	8.17	2.61	30	11.47	3.58	30	-1.04[-1.58, -0.50]

Sleep latency

Table S104. Diary-determined sleep latency (mins), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Wong 2017	Group delivery	48.6	30.7	111	52.4	53.5	105	-3.80[-15.52, 7.92]

Wake after sleep onset

Table S105. Diary-determined WASO (mins), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Wong 2017	Group delivery	57.7	52.6	111	67.7	68.5	105	-10.00[-26.35, 6.35]

Remission rate

Table S106. ISI-determined remission rate (%), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness		Control		Risk Difference [95% CI]
		Events	Total	Events	Total	
Ong 2014	Group delivery	8	19	1	16	0.36[0.11, 0.61]

Insomnia severity

Table S107. ISI-determined insomnia severity, post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Std. Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ong 2014	Group delivery	10.27	4.7	19	15.5	5.5	16	-1.01[-1.72, -0.30]
Wong 2017	In-person, one-on-one	14.4	4	111	14.9	4.7	105	-0.18[-0.45, 0.08]

Sleep efficiency

Table S108. Diary-determined sleep efficiency (%), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ong 2014	Group delivery	83.79	8.22	19	80.76	13.6	16	3.03[-4.59, 10.65]
Wong 2017	In-person, one-on-one	68.5	14.1	111	68.4	16.3	105	0.10[-3.97, 4.17]

Table S109. Actigraphy-determined sleep efficiency (%), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ong 2014	Group delivery	81.78	8.95	19	83.53	4.88	16	-1.75[-6.43, 2.93]

Table S110. PSG-determined sleep efficiency (%), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ong 2014	Group delivery	83.24	10.71	19	85.19	6.79	16	-1.95[-7.80, 3.90]

Total wake time

Table S111. Diary-determined total wake time (mins), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ong 2014	Group delivery	73.47	34.69	19	85.71	72.08	16	-12.24[-50.85, 26.37]

Table S112. Actigraphy-determined total wake time (mins), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ong 2014	Group delivery	61.46	25.15	19	61.44	22.48	16	0.02[-15.77, 15.81]

Table S113. PSG-determined total wake time (mins), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ong 2014	Group delivery	78.01	53.93	19	69.81	30.94	16	8.20[-20.40, 36.80]

Total sleep time

Table S114. Diary-determined total sleep time (mins), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ong 2014	Group delivery	379.31	64.32	19	364.82	83.13	16	14.49[-35.47, 64.45]
Wong 2017	In-person, one-on-one	318.4	66.2	111	317.1	76.6	105	1.30[-17.84, 20.44]

Table S115. Actigraphy-determined total sleep time (mins), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ong 2014	Group delivery	364.85	47.68	19	376.58	63.03	16	-11.73[-49.33, 25.87]

Table S116. PSG-determined total sleep time (mins), post treatment differences, Mindfulness vs. control

Study	Delivery method	Mindfulness			Control			Mean Difference, [95% CI]
		Mean	SD	Total	Mean	SD	Total	
Ong 2014	Group delivery	380.84	52.25	19	403.66	39.94	16	-22.82[-53.40, 7.76]

Table S117 – Summary of Findings table for Mindfulness for the treatment of Psychological and Behavioral insomnia in adults

References: Zhang 2015 (A); Ong 2014 (B), Wong 2017 (C)			
Outcomes [Tool]	Quality of the evidence (GRADE)	Absolute Difference CBTI vs Control	No of Participants (studies)
Quality of sleep [PSQI]	⊕⊕○○ LOW ^{a,b}	The standardized mean difference in the Mindfulness group was 1.04 points lower ¹ [0.50 to 1.58 points lower] compared to control	60 patients (1 RCT) ^A
*Sleep latency [Diary]	⊕⊕○○ LOW ^{b,c}	The mean difference in the Mindfulness group was 3.80 mins lower ² [15.52 mins lower to 7.92 mins higher] compared to control	216 patients (1 RCT) ^C
Wake after sleep onset [Diary]	⊕⊕○○ LOW ^{b,c}	The mean difference in the Mindfulness group was 10.00 mins lower ² [26.35 mins lower to 6.35 mins higher] compared to control	216 patients (1 RCT) ^C
*Remission rate [ISI]	⊕⊕○○ LOW ^{a,b}	The percentage of patients achieving "remission" in the CBTI group was 36% higher ¹ [11% to 61% higher] compared to control	35 patients (1 RCT) ^B
Insomnia severity [ISI]	⊕⊕○○ LOW ^{a,b,c}	The standardized mean difference in the mindfulness group was 0.53 points lower ¹ [1.32 points lower to 0.27 points higher] compared to control	251 patients (2 RCT) ^{B,C}
Sleep efficiency [Diary]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the Mindfulness group was 0.75% higher ² [2.84% lower to 4.34% higher] compared to control	251 patients (2 RCT) ^{B,C}
Sleep efficiency [Act]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the Mindfulness group was 1.75% lower ² [6.43% lower to 2.93% higher] compared to control	35 patients (1 RCT) ^B
Sleep efficiency [PSG]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the Mindfulness group was 1.95% lower ² [7.8% lower to 3.9% higher] compared to control	35 patients (1 RCT) ^B
Total wake time [Diary]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the Mindfulness group was 12.24 minutes lower ² [50.85 minutes lower to 26.37 minutes higher] compared to control	35 patients (1 RCT) ^B
Total wake time [Act]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the Mindfulness group was 0.02 minutes lower ² [15.77 minutes lower to 15.81 minutes higher] compared to control	35 patients (1 RCT) ^B
Total wake time [PSG]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the Mindfulness group was 8.2 minutes lower ² [20.40 minutes lower to 36.80 minutes higher] compared to control	35 patients (1 RCT) ^B
Total sleep time [Diary]	⊕○○○ VERY LOW ^{a,b,c,d}	The mean difference in the Mindfulness group was 2.99 minutes higher ² [14.88 minutes lower to 20.86 minutes higher] compared to control	251 patients (2 RCT) ^{B,C}
Total sleep time [Act]	⊕○○○ VERY LOW ^{a,b,c,d}	The mean difference in the Mindfulness group was 11.73 minutes lower ² [49.33 minutes lower to 25.87 minutes higher] compared to control	35 patients (1 RCT) ^B
Total sleep time [PSG]	⊕⊕○○ LOW ^{a,b,c}	The mean difference in the Mindfulness group was 22.82 minutes lower ² [53.40 minutes lower to 7.76 minutes higher] compared to control	35 patients (1 RCT) ^B

* Critical Outcome
^a <200 participants
^b Risk of bias [no patient blinding, allocation concealment]
^c Imprecision
^d Crosses CI on both sides
¹ Meets the clinical significance threshold
² Does not meet the clinical significance threshold