# NKR46 pico 1: duration of inpatient treatment for anorexia

## Review information

### Authors

Danish Health Authority[1]

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Citation example: DHA. NKR46 pico 1: duration of inpatient treatment for anorexia. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

## Characteristics of studies

### Characteristics of included studies

#### *HerpertzDahlmann 2014*

| | |
|---|---|
| **Methods** | **Study design:** Randomized controlled trial<br>**Study grouping:** Parallel group<br>**Open Label:**<br>**Cluster RCT:** |
| **Participants** | **Baseline Characteristics**<br>Intervention<br>● *Age mean (SD)*: 15.3 (1.5)<br>● *Duration of illness, months (SD)*: 10.6 (8.3)<br>● *Any psychiatric comobidity (%): 38*<br>● *AN binge-purge subtype (%)*: 19.8<br>● *Male gender (%)*: 0<br>● *%EBW (percentage expected body weight (SD)*: 74.4 (7.0)<br><br>Control<br>● *Age mean (SD)*: 15.2 (1.5)<br>● *Duration of illness, months (SD)*:15.2 (1.5)<br>● *Any psychiatric comobidity (%)*: 44<br>● *AN binge-purge subtype (%)*: 16.5<br>● *Male gender (%)*: 0<br>● *%EBW (percentage expected body weight (SD)*: 75.4 (6.2<br><br>**Included criteria:** Females, 11-18 years, AN according to DSM-IV, BMI below 10th percentile, at first hospital admission for AN, living |

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|---|---|
| | within 60 minutes commute of the treating department.<br>**Excluded criteria:** Organic brain disease, psychotic or bipolar disorder, substance dependence or abuse, serious self-injurious behaviour, insufficient knowledge of the German language, or an IQ below 85.<br>**Pretreatment:** The baseline characteristics weremuch the same between groups (table 1, s.1225)Inpt: n=85, daypt:n=87 |
| **Interventions** | **Intervention Characteristics**<br>Intervention<br>● *Description*: 3 weeks of inpatient treatment followed by day treatment until maintained target weight for 2 weeks.<br>● *Length of treatment*: 16.5 weeks (SD 7.0)<br>● *Length of follow-up*: 12 months from admission<br><br>Control<br>● *Description*: Continued inpatient treatment until maintained target weight for 2 weeks.<br>● *Length of treatment*: 14.6 weeks (SD 6.0)<br>● *Length of follow-up*: 12 months from admission |
| **Outcomes** | *Adfærdssymptomer (restriktiv spisning, tvangsmotion, binge, purge), EOT*<br>● **Outcome type**: ContinuousOutcome<br>● **Reporting**: Not reported<br>● **Scale**: MROAS scale A (food intake)<br>● **Range**: 0-12<br>● **Unit of measure**: points<br>● **Direction**: Higher is better<br>● **Data value**: Endpoint<br><br>*Adfærdssymptomer (restriktiv spisning, tvangsmotion, binge, purge), LFU*<br>● **Outcome type**: ContinuousOutcome<br>● **Reporting**: Fully reported<br>● **Scale**: MROAS, scale A (food intake)<br>● **Range**: 1-12<br>● **Unit of measure**: points<br>● **Direction**: Higher is better<br>● **Data value**: Endpoint<br><br>*Andel af sund kropsvægt/BMI, EOT*<br>● **Outcome type**: ContinuousOutcome<br>● **Reporting**: Fully reported<br>● **Scale**: %EBW<br>● **Range**: 1-100<br>● **Unit of measure**: % |

- **Direction**: Higher is better
- **Data value**: Endpoint
- **Notes**: %EBW=percent expected body weight

*Andel af sund kropsvægt/BMI, LFU*

- **Outcome type**: ContinuousOutcome
- **Reporting**: Fully reported
- **Scale**: %EBW
- **Range**: 1-100
- **Unit of measure**: %
- **Direction**: Higher is better
- **Data value**: Endpoint

*Psykologiske spiseforstyrrelsessymptomer, EOT*

- **Outcome type**: ContinuousOutcome
- **Reporting**: Not reported
- **Scale**: EDI-2 global score
- **Unit of measure**: raw score
- **Direction**: Lower is better
- **Data value**: Endpoint

*Psykologiske spiseforstyrrelsessymptomer, LFU*

- **Outcome type**: ContinuousOutcome
- **Reporting**: Fully reported
- **Scale**: EDI-2, global score
- **Unit of measure**: raw score
- **Direction**: Lower is better
- **Data value**: Endpoint

*Recovery rate*

- **Outcome type**: DichotomousOutcome
- **Reporting**: Fully reported
- **Scale**: General Morgan and Russell Score
- **Unit of measure**: N reaching good outcome
- **Direction**: Higher is better
- **Data value**: Endpoint

*Dropout*

- **Outcome type**: DichotomousOutcome
- **Reporting**: Fully reported
- **Unit of measure**: antal ikke gennemført behandlingssarm

| | |
|---|---|
| | ● **Direction**: Lower is better<br>● **Data value**: Endpoint<br>● **Notes**: OBS: af 25, der ikke gennemførte behandlingsarm, blev de 18 døgnindlagt og gennemførte denne behandling.<br><br>*Livskvalitet*<br>● **Outcome type**: ContinuousOutcome<br>● **Reporting**: Not reported<br>● **Direction**: Higher is better<br>● **Data value**: Endpoint<br><br>*Indlæggelser, LFU*<br>● **Outcome type**: DichotomousOutcome<br>● **Reporting**: Partially reported<br>● **Unit of measure**: Antal patienter<br>● **Direction**: Lower is better<br>● **Data value**: Endpoint<br>● **Notes**: Usikkert estimat, kun indlæggelser frem til EOT er rapporteret. |
| **Identification** | **Sponsorship source:**<br>**Country:** G<br>erman Ministry for Education and Research<br>**Country:** Germany<br>**Setting:** 6 hospitals, inpatient and daypatient<br>**Comments:** none<br>**Authors name:** Prof. Beate Herpertz-Dahlmann<br>**Institution:**<br>Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital of the RWTH Aachen<br>**Email:** bherpertz-dahlmann@ukaachen.de<br>**Address:** Neuenhofer Weg 21, D - 52074 Aachen, Germany |
| **Notes** | *Nkr 46 Anoreksi* on 12/03/2016 05:48<br>**Outcomes**<br>Recovery rate: angivet som antal og % |

Risk of bias table

| Bias | Authors' judgement | Support for judgement |
|---|---|---|
| Sequence Generation | Low risk | Quote: "The randomisation sequence was computer generated. The randomisation procedure was a covariate-adaptive procedure according to Rosenberger and Lachin. 24 Balanced randomisation 25 was applied to balance the treatment arms within the sites and to stratify for age (age <14 years and ≥14 years, because anorexia nervosa at childhood onset might be associated with a worse prognosis 26 ) and for BMI at the time of admission (<15·5 kg/m² and ≥15·5 kg/m², because the higher BMI bracket has been noted to be an important prognostic factor 21 )." |
| Allocation concealment | Low risk | Quote: "The independent Clinical Trials Centre in Marburg, Germany, did a centralised, concealed randomisation to either DP or IP (1:1) by fax at the beginning of week 3, after the patients were enrolled into the study." |
| Blinding of participants and personnel | High risk | Quote: "Patients and therapists could not be masked to treatment allocation."<br>Judgement Comment: Not possible to blind patients and therapist. |
| Blinding of outcome assessors | High risk | Assessors were initially masked but some patients inadvertently revealed their treatment allocation; masking was maintained for the primary outcome (BMI). |
| Incomplete outcome data | Low risk | Quote: "Because readmission mostly occurred in starved patients with a very low bodyweight and usually led to a treatment- induced renewed weight gain, we decided to use the admission BMI at readmission in relapsed patients to consider a worst-case scenario."<br>Judgement Comment: Low attrition, intention-to-treat analysis. |
| Selective outcome reporting | High risk | SIAB-EX results not reported. |
| Other sources of bias | Low risk | |

## *Madden 2015*

| | |
|---|---|
| **Methods** | **Study design:** Randomized controlled trial<br>**Study grouping:** Parallel group<br>**Open Label:**<br>**Cluster RCT:** |
| **Participants** | **Baseline Characteristics**<br>Intervention<br>● *Age mean (SD)*: 14.89 (1.36)<br>● *Duration of illness, months (SD)*: 7.39 (5.42)<br>● *Depression features, (%)*: 31.7<br>● *AN binge-purge subtype,(%)*: 29.3<br>● *Male gender (%)*: 4.9<br>● *%EBW (percentage expected body weight (SD)*: 77.28 (6.67) |

| | |
|---|---|
| | Control<br>● *Age mean (SD)*: 14.88 (1.56)<br>● *Duration of illness, months (SD)*: 7.85 (6.89)<br>● *Depression features, (%)*: 31.7<br>● *AN binge-purge subtype,(%)*: 31.7<br>● *Male gender (%)*: 4.9<br>● *%EBW (percentage expected body weight (SD)*: 79.25 (5.95)<br><br>**Included criteria:** Aged between12 and 18 years, with a DSM-IV diagnosis of AN of less than 3 years' duration, were medically unstable, lived within a 2-h drive of the treatment center and were not receiving other psychotherapy during the RCT.<br>**Excluded criteria:** Illness duration of more than 3 years, evidence of psychosis, mania, substance abuse or significant intercurrent medical illnesses other than nutrition-related complications of AN.<br>**Pretreatment:** ResultsThe only significant differences between study siteswas the age of the participants, reflecting the differentadmission age criteria of each site (SCHN-W: mean=14.14 years, S.D.=1.07; WH: mean=16.25 years, S.D. =1.03, t80 =−8.644, p<0.05, η2=0.48, very large effect)and the duration of illness prior to hospitalization,with patients from WH (mean=9.83 months, S.D. =8.29)diagnosed on average 3.4 months later than SCHN-Wpatients (mean=6.42 months, S.D. =4.24), (t80 =2.07,p<0.05, η2= 0.05, moderate effect size). There were nodifferences in baseline variables (Table 1) or protocoladherence (Table 2) between treatment groups. Sixpatients (7.3%) were within 1 s.D. of community normsfor the EDE at baseline; however, a comprehensive |
| **Interventions** | **Intervention Characteristics**<br>Intervention<br>● *Description*: Brief hospitalization for medical stabilization, followed by 20 sessions FBT.<br>● *Length of treatment*: 21.73 inpatient days plus FBT spread over maximum 12 months<br>● *Length of follow-up*: 12 months from EOT<br><br>Control<br>● *Description*: Hospitalization for weight restoration, followed by 20 sessions FBT.<br>● *Length of treatment*: 36.89 inpatient days plus FBT spread over maximum 12 months<br>● *Length of follow-up*: 12 months from EOT |
| **Outcomes** | *Adfærdssymptomer (restriktiv spisning, tvangsmotion, binge, purge), EOT*<br>● **Outcome type**: ContinuousOutcome<br>● **Reporting**: Not reported<br><br>*Adfærdssymptomer (restriktiv spisning, tvangsmotion, binge, purge), LFU*<br>● **Outcome type**: ContinuousOutcome<br>● **Reporting**: Not reported<br><br>*Andel af sund kropsvægt/BMI, EOT*<br>● **Outcome type**: ContinuousOutcome<br>● **Reporting**: Partially reported |

- **Scale**: % at session 20
- **Range**: 0-100
- **Unit of measure**: %EBW
- **Direction**: Higher is better
- **Data value**: Endpoint
- **Notes**: %EBW=percent expected weight. Som EOT regnes session 20.

*Andel af sund kropsvægt/BMI, LFU*

- **Outcome type**: ContinuousOutcome
- **Reporting**: Partially reported
- **Scale**: % at 12-months
- **Range**: 1-100
- **Unit of measure**: %EBW
- **Direction**: Higher is better
- **Data value**: Endpoint
- **Notes**: LFU= 12 months

*Psykologiske spiseforstyrrelsessymptomer, EOT*

- **Outcome type**: ContinuousOutcome
- **Reporting**: Partially reported
- **Scale**: EDE, global score
- **Range**: 0-6
- **Unit of measure**: points
- **Direction**: Lower is better
- **Data value**: Endpoint

*Psykologiske spiseforstyrrelsessymptomer, LFU*

- **Outcome type**: ContinuousOutcome
- **Reporting**: Partially reported
- **Scale**: EDE, global score
- **Range**: 0-6
- **Unit of measure**: points
- **Direction**: Lower is better
- **Data value**: Endpoint

*Recovery rate, LFU (min. 1 year)*

- **Outcome type**: DichotomousOutcome
- **Reporting**: Fully reported
- **Scale**: >95% EBW og EDE≤1 SD fra norm
- **Unit of measure**: %

| | |
|---|---|
| | ● **Direction**: Higher is better<br>● **Data value**: Endpoint<br><br>*Dropout, EOT*<br>● **Outcome type**: DichotomousOutcome<br>● **Reporting**: Fully reported<br>● **Unit of measure**: antal<br>● **Direction**: Lower is better<br>● **Data value**: Endpoint<br><br>*Livskvalitet*<br>● **Outcome type**: ContinuousOutcome<br>● **Reporting**: Not reported<br><br>*Indlæggelser*<br>● **Outcome type**: DichotomousOutcome<br>● **Reporting**: Fully reported<br>● **Scale**: readmission to 12-months FU<br>● **Unit of measure**: antal patienter<br>● **Direction**: Lower is better<br>● **Data value**: Endpoint<br>● **Notes**: Hvor mange behøver Indlæggelse efter den planlagte intervention (medical stabilisation eller weight restoration) |
| **Identification** | **Sponsorship source:** This work was fully funded by the National Healthand Medical Research Council (NHMRC) of Australia(Grant ID 457235)<br>**Country:** Australia<br>**Setting:** Two sited inpatient study<br>**Comments:** none<br>**Authors name:** Dr S. Madden<br>**Institution:** Department og Psychological Medicine, The Sidney Children´s Hospitals Network<br>**Email:** Sloane.Madden@health.nsw.gov.au<br>**Address:** Westmead Campus, Locked Bag 4001, Westmead, NSW 2145, Australia |
| **Notes** | *Birte Smidt* on 16/03/2016 02:43<br>**Interventions**<br>Participants in the MS arm were subsequentlydischarged to out-patient FBT if they had no markersof medical instability for 72 h after nasogastric feedswere ceasedParticipants in the WR arm continuedin hospital on supported meals without nasogastricfeeding once they had no markers of medical instabilityfor 72 h, until they reached 90% EBW before dischargeto out-patient FBT.<br><br>*Birte Smidt* on 21/03/2016 18:01 |

| | |
|---|---|
| | **Outcomes**<br>jeg fandt ikke tal for dropouts,livskvalitet,adfærd |

## Risk of bias table

| Bias | Authors' judgement | Support for judgement |
|---|---|---|
| Sequence Generation | Low risk | Quote: "randomized in clusters of six using a block size of two. Each new cluster was randomized through a blind random binary list created by an exter- nal statistician." |
| Allocation concealment | High risk | Quote: "the use of clusters unblinded recruitment staff to the group status of participants, this design was chosen to prevent potential problems of drop-out if participants from different groups were treated alongside one another"<br>Judgement Comment: Recruitment staff was not blinded to group status of participants. |
| Blinding of participants and personnel | High risk | Judgement Comment: Blinding of participants not possible. |
| Blinding of outcome assessors | Unclear risk | Judgement Comment: not reported. |
| Incomplete outcome data | Low risk | Judgement Comment: Low attrition, intention-to-treat analyses |
| Selective outcome reporting | Low risk | |
| Other sources of bias | Low risk | |

*Footnotes*

## Characteristics of excluded studies

### *Gnanavel 2014*

| | |
|---|---|
| **Reason for exclusion** | Comment, no study |

### *HerpertzDahlmann 2014a*

| | |
|---|---|
| **Reason for exclusion** | Comment, no study |

*Footnotes*

### Characteristics of studies awaiting classification

*Footnotes*

### Characteristics of ongoing studies

*Footnotes*

## Additional tables

## References to studies

### Included studies

#### *HerpertzDahlmann 2014*

HerpertzDahlmann B.; Krei M.; Buhren K.; Schwarte R.; Egberts K.; Wewetzer C.; Pfeiffer E.; Fleischhaker C.; Konrad K.; SchadeBrittinger C.; Timmesfeld N.; Dempfle,A.. Day patient treatment is superior to inpatient treatment after 2.5 years-results of a 2.5 year follow-up-study in 170 patients.. European Child and Adolescent Psychiatry.Conference: 16th International Congress of European Society for Child and Adolescent Psychiatry, ESCAP 2015 Madrid Spain.Conference Start: 20150620 Conference End: 20150624.Conference Publication: (var.pagings) 2015;24(1 SUPPL. 1):S97. [DOI: ]

HerpertzDahlmann B.; Schwarte R.; Krei M.; Egberts K.; Warnke A.; Wewetzer C.; Pfeiffer E.; Fleischhaker C.; Scherag A.; Holtkamp K.; Hagenah U.; Buhren K.; Konrad K.; Schmidt U.; SchadeBrittinger C.; Timmesfeld N.; Dempfle,A.. Day-patient treatment after short inpatient care versus continued inpatient treatment in adolescents with anorexia nervosa (ANDI): A multicentre, randomised, open-label, non-inferiority trial.. The Lancet 2014;383(9924):1222-1229. [DOI: ]

#### *Madden 2015*

Madden,S.; MiskovicWheatley,J.; Wallis,A.; Kohn,M.; Lock,J.; Le Grange,D.; Jo,B.; Clarke,S.; Rhodes,P.; Hay,P.; Touyz,S.. A randomized controlled trial of in-patient treatment for anorexia nervosa in medically unstable adolescents.. Psychological medicine 2015;45(2):415-427. [DOI: ]

### Excluded studies

#### *Gnanavel 2014*

Gnanavel,Sundar. Treatment of adolescents with anorexia nervosa.. The Lancet 2014;384(9939):229-230. [DOI: ]

### *HerpertzDahlmann 2014a*

HerpertzDahlmann,Beate; Konrad,Kerstin; Timmesfeld,Nina; Dempfle,Astrid. "Treatment of adolescents with anorexia nervosa": Authors' reply.. The Lancet 2014;384(9939):230-231. [DOI: ]

# Data and analyses

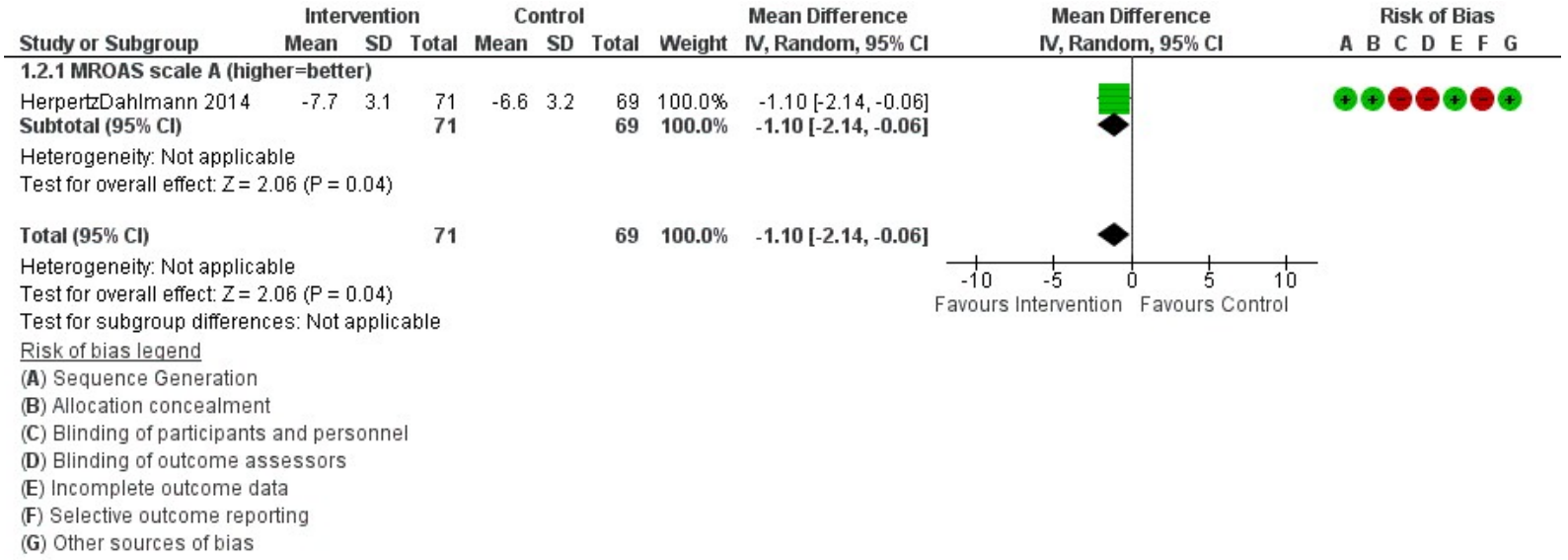
## 1 Intervention vs Control

| Outcome or Subgroup | Studies | Participants | Statistical Method | Effect Estimate |
|---|---|---|---|---|
| 1.1 Adfærdssymptomer (restriktiv spisning, tvangsmotion, binge, purge), EOT | 0 | 0 | Mean Difference (IV, Fixed, 95% CI) | Not estimable |
| 1.2 Adfærdssymptomer (restriktiv spisning, tvangsmotion, binge, purge), LFU | 1 | 140 | Mean Difference (IV, Random, 95% CI) | -1.10 [-2.14, -0.06] |
| 1.2.1 MROAS scale A (higher=better) | 1 | 140 | Mean Difference (IV, Random, 95% CI) | -1.10 [-2.14, -0.06] |
| 1.3 Andel af sund kropsvægt/BMI, EOT | 2 | 254 | Mean Difference (IV, Random, 95% CI) | -1.12 [-2.27, 0.04] |
| 1.3.1 %EBW | 2 | 254 | Mean Difference (IV, Random, 95% CI) | -1.12 [-2.27, 0.04] |
| 1.4 Andel af sund kropsvægt/BMI, LFU | 2 | 243 | Mean Difference (IV, Random, 95% CI) | -1.55 [-3.48, 0.38] |
| 1.4.1 %EBW | 2 | 243 | Mean Difference (IV, Random, 95% CI) | -1.55 [-3.48, 0.38] |
| 1.5 Psykologiske spiseforstyrrelsessymptomer, EOT | 1 | 82 | Mean Difference (IV, Random, 95% CI) | -0.10 [-0.59, 0.39] |
| 1.5.1 EDE global (lower=better) | 1 | 82 | Mean Difference (IV, Random, 95% CI) | -0.10 [-0.59, 0.39] |
| 1.6 Psykologiske spiseforstyrrelsessymptomer, LFU | 2 | 225 | Std. Mean Difference (IV, Random, 95% CI) | -0.16 [-0.42, 0.10] |
| 1.6.1 EDI-2 global and EDE global (lower=better) | 2 | 225 | Std. Mean Difference (IV, Random, 95% CI) | -0.16 [-0.42, 0.10] |
| 1.7 Livskvalitet | 0 | 0 | Mean Difference (IV, Fixed, 95% CI) | Not estimable |
| 1.8 Recovery rate | 2 | 239 | Risk Ratio (IV, Random, 95% CI) | 1.09 [0.73, 1.63] |
| 1.8.1 General Morgan and Russell Score, % recovered | 2 | 239 | Risk Ratio (IV, Random, 95% CI) | 1.09 [0.73, 1.63] |

| | | | | |
|---|---|---|---|---|
| 1.9 Dropout | 2 | | Risk Ratio (IV, Random, 95% CI) | Subtotals only |
| 1.9.1 Dropout, EOT | 2 | 254 | Risk Ratio (IV, Random, 95% CI) | 1.31 [0.35, 4.96] |
| 1.10 Indlæggelser | 2 | | Risk Ratio (IV, Random, 95% CI) | Subtotals only |
| 1.10.1 at follow up | 2 | 250 | Risk Ratio (IV, Random, 95% CI) | 0.88 [0.58, 1.35] |

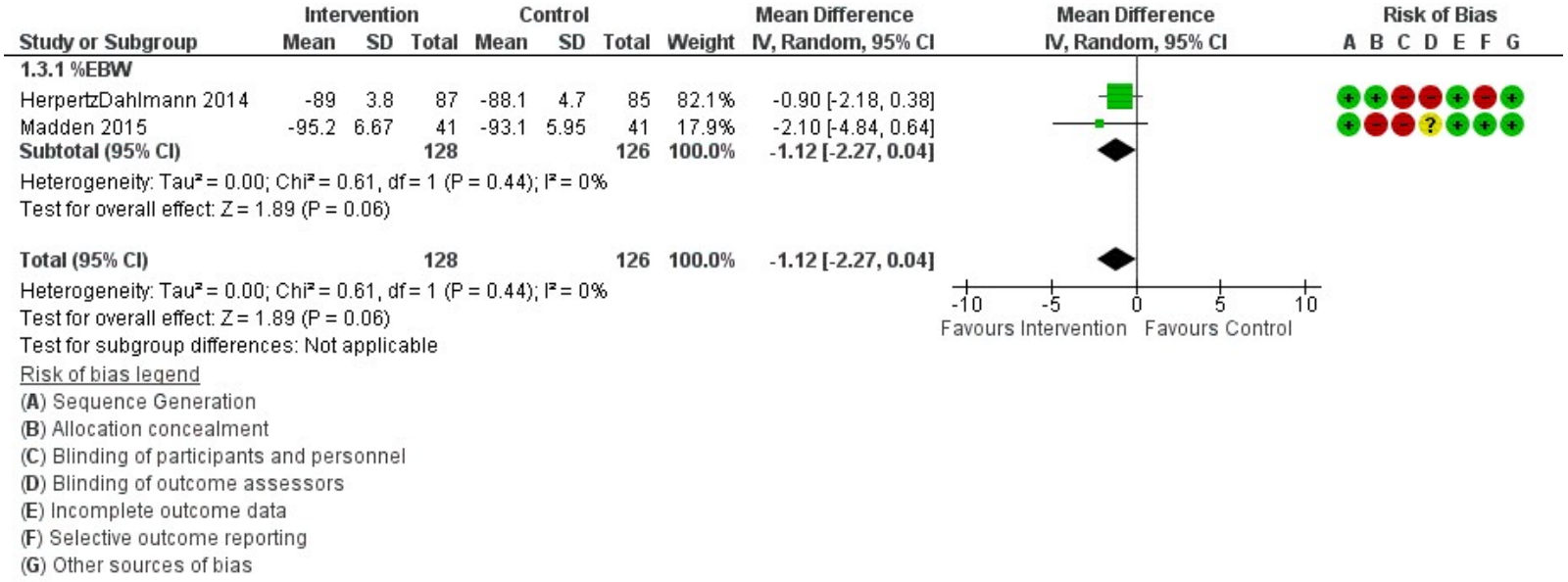
# Figures

## Figure 1 (Analysis 1.2)



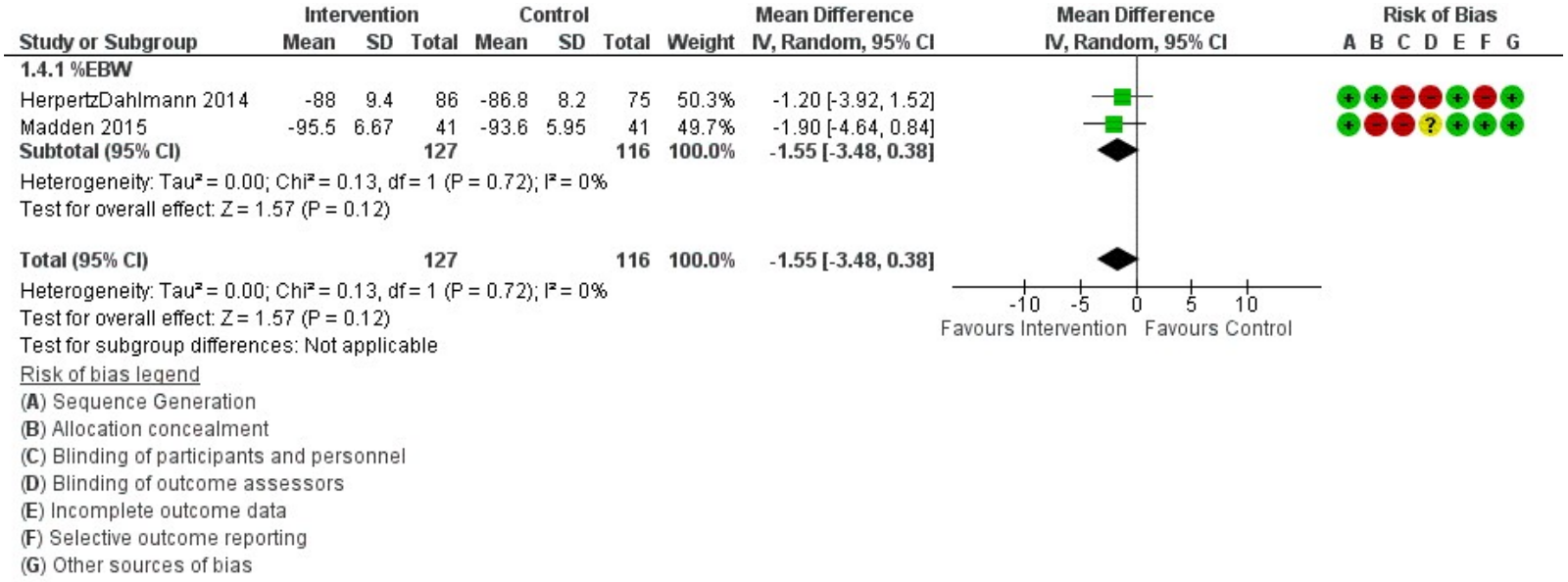

Forest plot of comparison: 1 Intervention vs Control, outcome: 1.2 Adfærdssymptomer (restriktiv spisning, tvangsmotion, binge, purge), LFU.

## Figure 2 (Analysis 1.3)



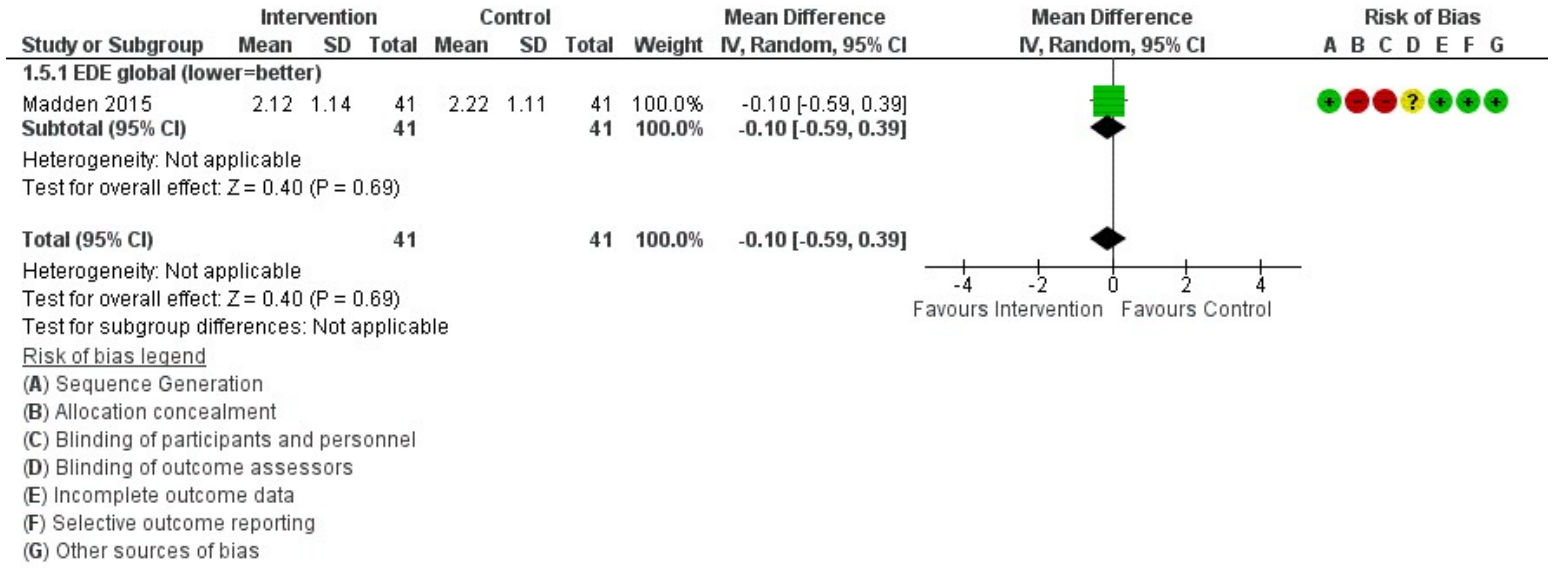

Forest plot of comparison: 1 Intervention vs Control, outcome: 1.3 Andel af sund kropsvægt/BMI, EOT.

## Figure 3 (Analysis 1.4)



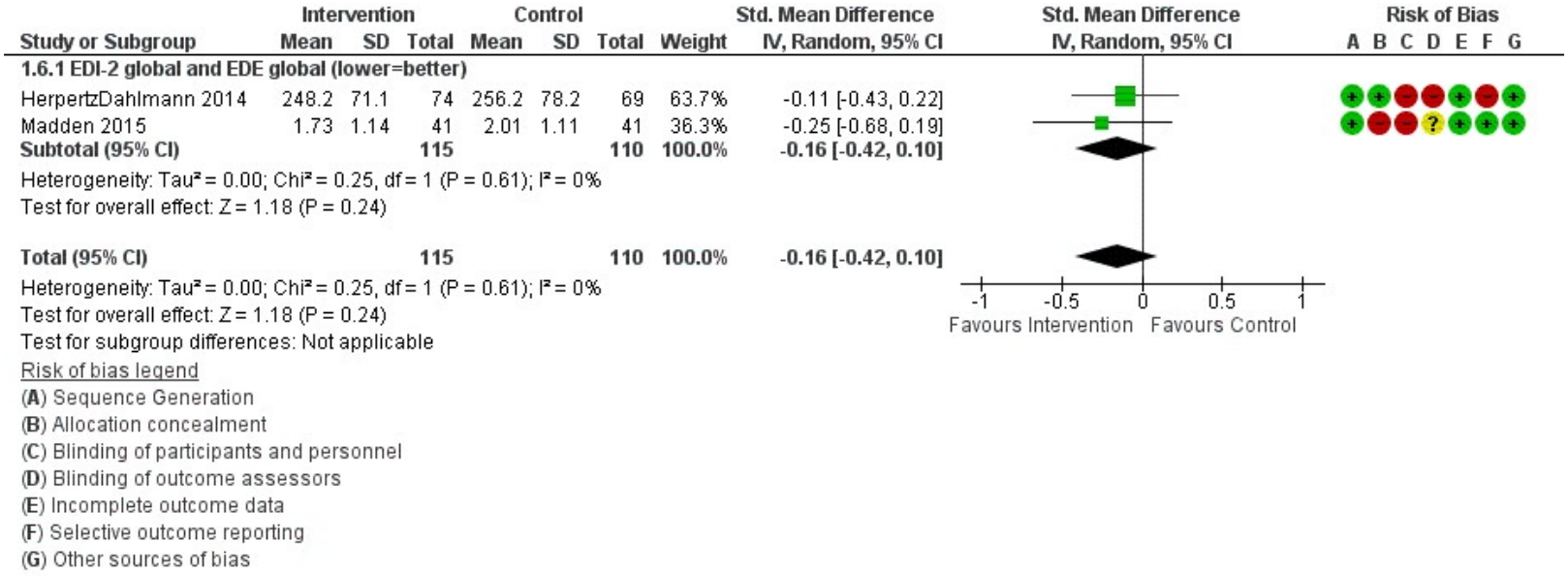

Forest plot of comparison: 1 Intervention vs Control, outcome: 1.4 Andel af sund kropsvægt/BMI, LFU.

## Figure 4 (Analysis 1.5)



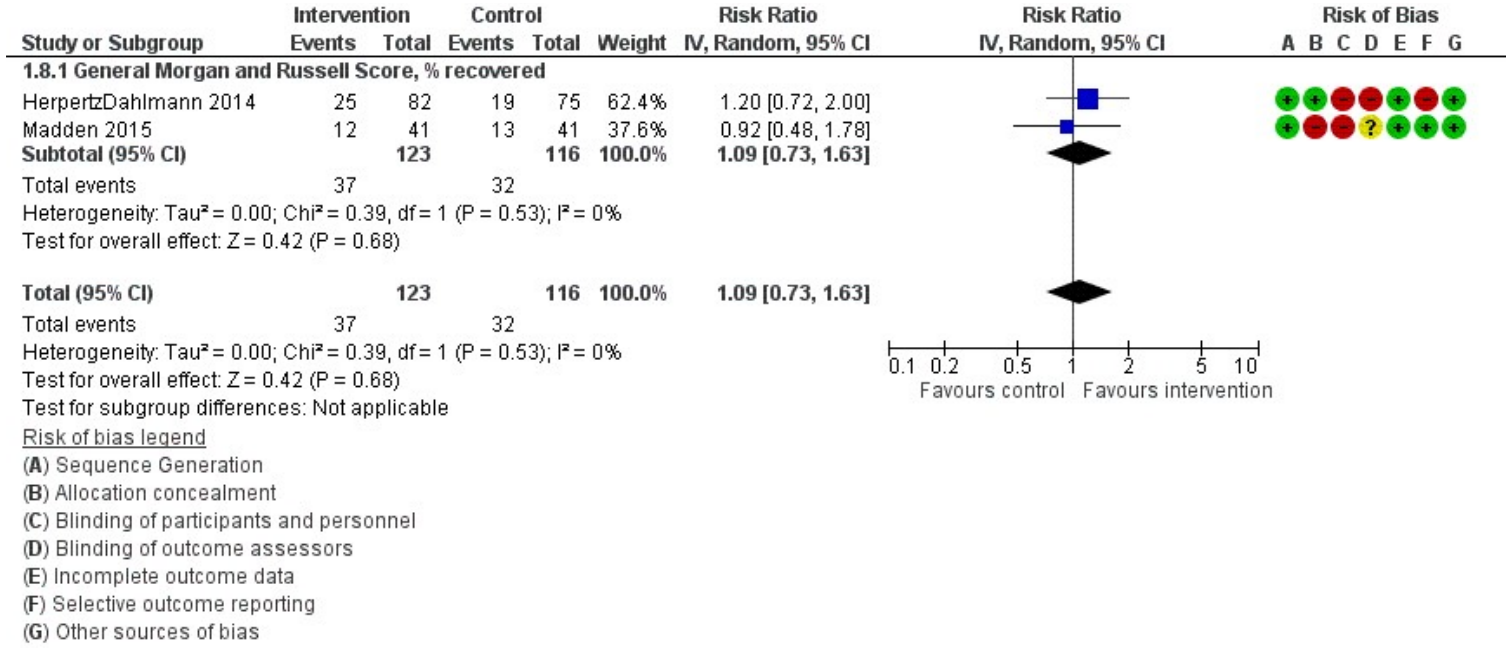

Forest plot of comparison: 1 Intervention vs Control, outcome: 1.5 Psykologiske spiseforstyrrelsessymptomer, EOT.

**Figure 5 (Analysis 1.6)**



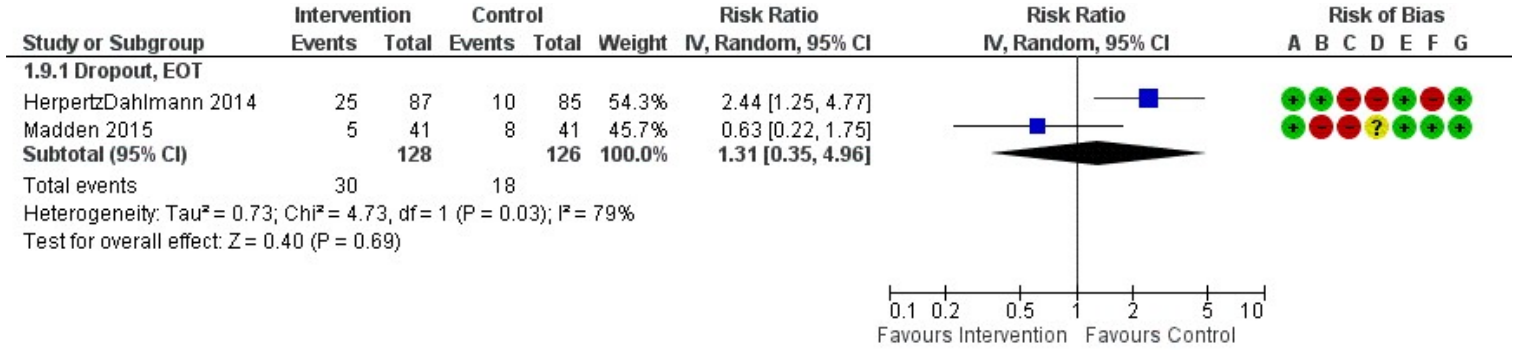

Forest plot of comparison: 1 Intervention vs Control, outcome: 1.6 Psykologiske spiseforstyrrelsessymptomer, LFU.

## Figure 6 (Analysis 1.8)




Forest plot of comparison: 1 Intervention vs Control, outcome: 1.8 Recovery rate.

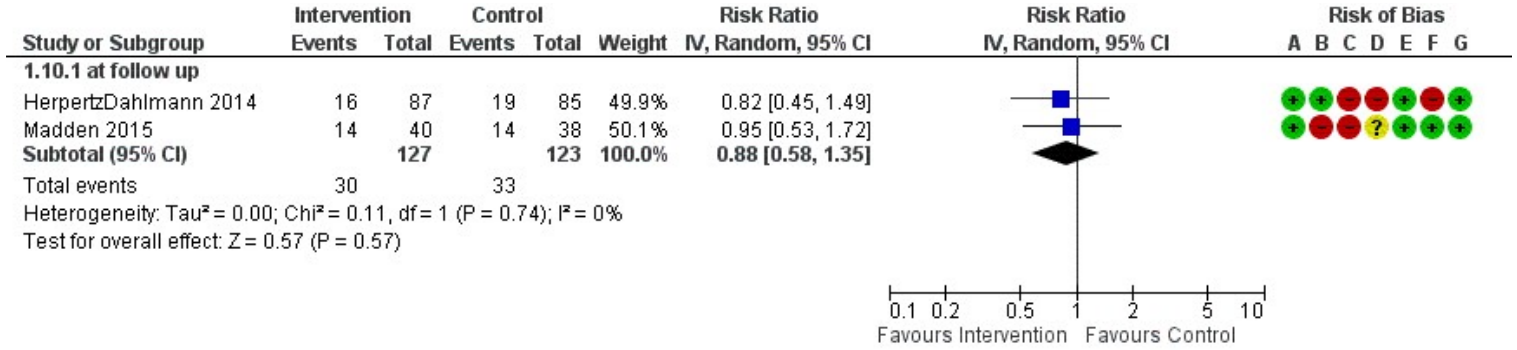
## Figure 7 (Analysis 1.9)




Risk of bias legend
(A) Sequence Generation
(B) Allocation concealment
(C) Blinding of participants and personnel
(D) Blinding of outcome assessors
(E) Incomplete outcome data
(F) Selective outcome reporting
(G) Other sources of bias

Forest plot of comparison: 1 Intervention vs Control, outcome: 1.9 Dropout.

## Figure 8 (Analysis 1.10)




Risk of bias legend
(**A**) Sequence Generation
(**B**) Allocation concealment
(**C**) Blinding of participants and personnel
(**D**) Blinding of outcome assessors
(**E**) Incomplete outcome data
(**F**) Selective outcome reporting
(**G**) Other sources of bias

Forest plot of comparison: 1 Intervention vs Control, outcome: 1.10 Indlæggelser.