Internet-based cognitive behavioural therapy for mood and anxiety disorders: a meta-analysis

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Why a meta-analysis?

- By now, many studies on internet-based CBT for mood and anxiety disorders have been conducted.

- We want to evaluate the effectiveness of these studies.

Meta-analysis: Method

- Selection of studies
- Analyses

Studies

- PubMed, PsychINFO, and Social Science Citation Index

- Corresponding authors

- References

We found 28 studies

Studies

Inclusion criteria for studies:

- Randomized controlled trials

- Cognitive behavior therapy via internet

- Comparison to control group like waiting list

- Intervention mainly selfhelp (minimal therapist assisance)

- Mood and anxiety disorders

12 studies left, with 2334 participants.

Included studies

First author Year	Problem	N	Control group	Aim
Klein 2001	Panic disorder	22	Self-monitoring	Treatment
Klein in press	Panic disorder	55	CBT manual & information	Treatment
Carlbring 2001	Panic disorder	41	Waiting list	Treatment
Carlbring in press	Panic disorder	60	Waiting list	Treatment
Andersson in press	Social phobia	64	Waiting list	Treatment
Kenardy 2003	Anxiety sensitivity	83	Waiting list	Prevention
Hirai 2005	PTSS	27	Waiting list	Treatment

Included studies

First author Year	Problem	N	Control group	Aim
Andersson 2005	Depression	117	Participation in online discussion group	Treatment
Clarke 2002	Depression	299	Treatment as usual	Treatment
Clarke 2005	Depression	255	Treatment as usual	Treatment
Christensen 2004	Depression	525	Attention placebo	Treatment
Patten 2003	Depression	786	Psycho-education	Prevention

Studies

Quality of included studies:

Quality criteria involve randomisation and objectivity of post-treatment measurement

Analyses

1. Effect sizes and confidence intervals for each study

2. Pooled effect sizes and heterogeneity

Effect sizes

Effect sizes (d) were calculated by dividing the difference between the mean score of the control group (Mc) and the mean score of the experimental group (Me) by the pooled standard deviation of both groups (SDec).

$$\frac{Mc - Me}{SD_{ce}}$$

Effect sizes

First author Year	Problem	N	Control group	Effect size
Klein 2001	Panic disorder	22	Self-monitoring	0.4
Klein in press	Panic disorder	55	CBT manual & information	1.5
Carlbring 2001	Panic disorder	41	Waiting list	1.0
Carlbring in press	Panic disorder	60	Waiting list	1.1
Andersson in press	Social phobia	64	Waiting list	0.8
Kenardy 2003	Anxiety sensitivity	83	Waiting list	0.3
Hirai 2005	PTSS	27	Waiting list	0.8

Effect sizes

First author Year	Problem	N	Control group	Effect size
Andersson 2005	Depression	117	Participation in online discussion group	0.9
Clarke 2002	Depression	299	Treatment as usual	0.0
Clarke 2005	Depression	255	Treatment as usual	0.3 (mail) 0.2 (phone)
Christensen 2004	Depression	525	Attention placebo	0.4
Patten 2003	Depression	786	Psycho-education	0.0

Meta-analysis

Calculating pooled mean effect sizes and heterogeneity.

Heterogeneity

Q-values were calculated to assess whether the variability among effect sizes was likely to have resulted from sampling error or from systematic variations in studies.

Because *Q* has low power in meta-analyses with small numbers of studies, we also calculated *I²*.

Results

Fixed effects meta-analysis on all contrasts

d = 0.24 (95% CI = 0.16~0.33)

Q = 58.65***

I^2 = 79.5%

Hypothesis of homogeneity rejected

Results

Subgroup analyses: aims of interventions

Treatment studies:

d = 0.40

Q = 39.77***

I^2 = 74.9%

Prevention studies:

d = 0.03

Q = 1.43
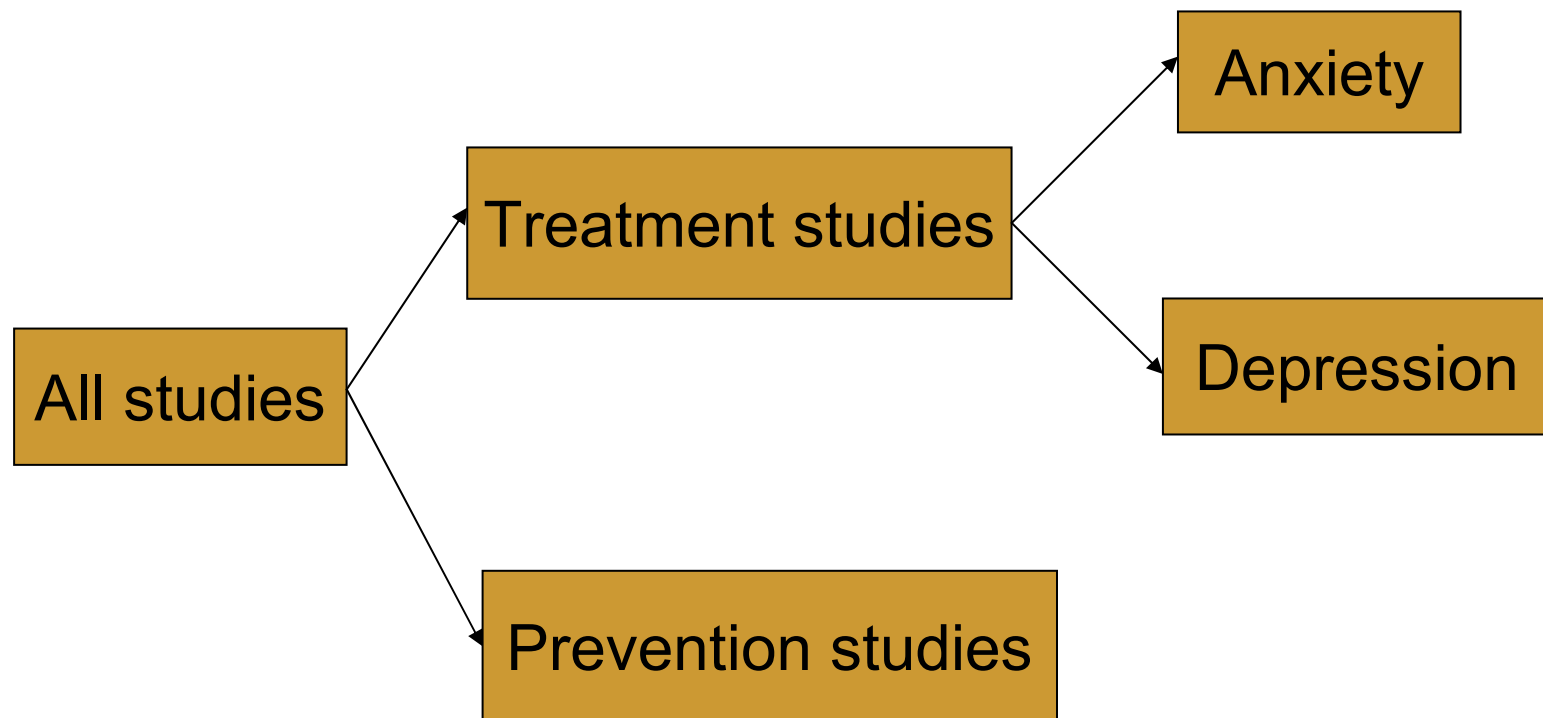
I^2 = 30.2%

Results

Treatment studies divided into two sets of subgroups:

- Disorder
- Amount of therapist support

Subgroups

Results

Subgroups based on disorder

Anxiety

d = 0.96 (95% CI 0.69~1.24)

Q = 5.10

I^2 = 2.0%

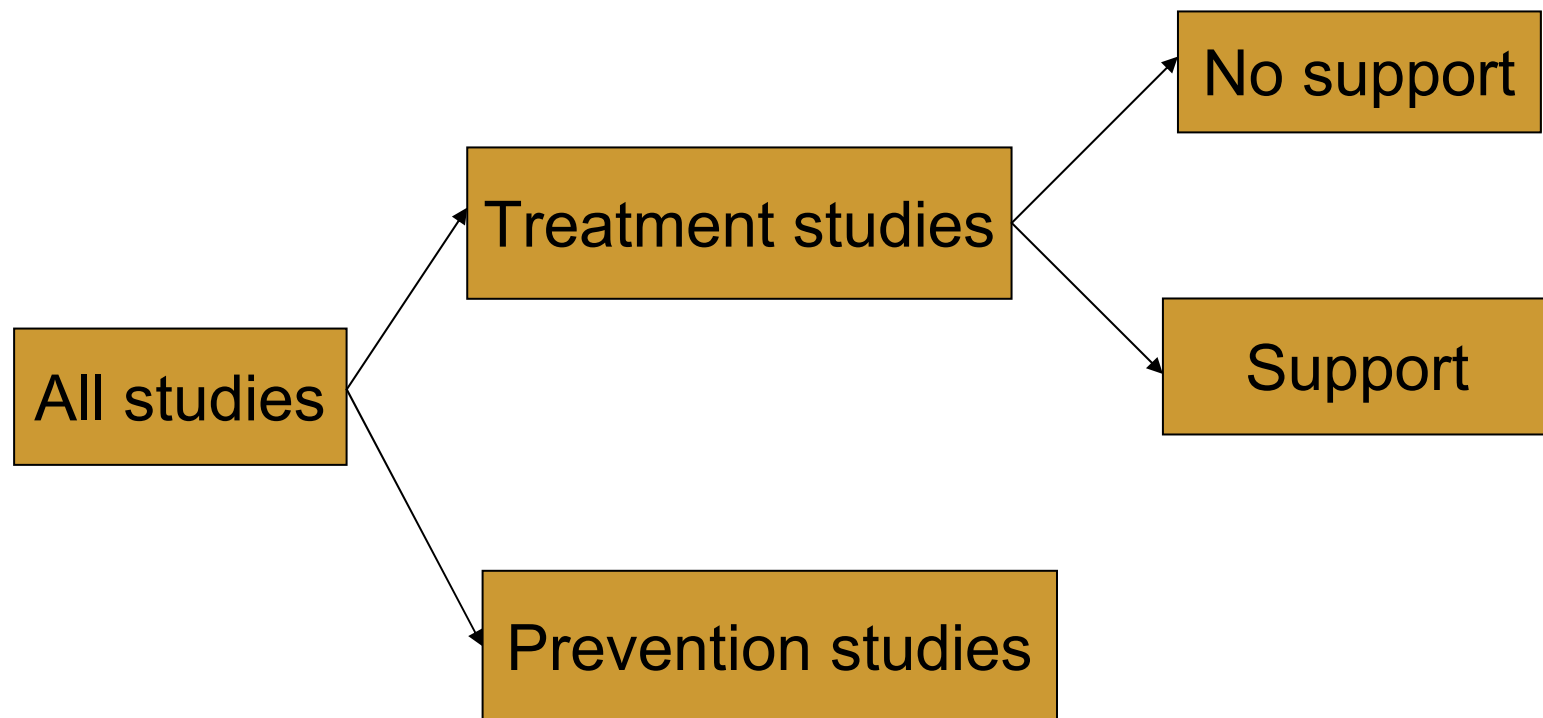Depression

d = 0.27 (95% CI 0.15~0.40)

Q = 13.37

I^2 = 70.1%

Results

Subgroups based on amount of therapist support

No therapist support

d = 0.24 (95% CI 0.11~0.37)

Q = 8.02

I^2 = 37.6%

Therapist support

d = 1.00 (95% CI 0.75~1.24)

Q = 3.24

I^2 = 0%

Conclusions

The amount of support, rather than the type of problem, seems to differentiate between large and small effect sizes.

Limitations

- Subjects and power were unequally distributed across studies: studies on depression had large numbers of subjects; studies on anxiety had small numbers of subjects.

- Moreover, support also was unequally distributed across studies: interventions for anxiety often had support whereas interventions for depression often were without support.

Effect sizes

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Effect sizes

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Conclusions

More research is needed: the meta-analysis can be replicated when more studies are available to gain more insight.

Conclusions

Internet-based interventions with therapist support can be very effective!

Therapist support seems a necessary part of clinically effective internet-based CBT.