BEST in Mental Health
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Best Evidence Summaries of Topics in Mental Healthcare

BEST *in* MH *clinical question-answering service*

Question

How effective is low intensity* individual cognitive behavioural therapy (CBT) in treating anxiety and/or depression in patients with Parkinson's disease?

Clarification of question using *PICO* structure

Patients:	Patients with Parkinson's disease experiencing anxiety and/or depression
Intervention:	Low intensity individual CBT
Comparator:	Any other or no intervention
Outcome:	Improving any patient outcomes

*For the purpose of this question, 'low intensity' refers to CBT-based interventions providing guided self-help, including bibliotherapy and brief individual therapy administered either in person or remotely (e.g. by telephone).

Email: awp.BESTinMH@nhs.net Phone: 0117 378 4232/4233/4335 @BESTinMH

Clinical and research implications

No definite clinical implications may be made based on the current evidence. There are a number of methodologically weak studies included in a systematic review that show that brief psychotherapy treatment (cognitive behaviour therapy or psychodynamic therapy) decreases depression in people with Parkinson's Disease, in comparison to controls. The authors of the systematic review suggested, however, that more high quality studies with long term follow-up are needed in this field of research. They also suggested that study authors consider using additional assessment tools for depression.

What does the evidence say?

Number of included studies/reviews (number of participants)

One systematic review (SR) (Xie et al. 2015) and one randomised controlled trial (RCT) (Lawson et al. 2013) met the inclusion criteria for this BEST summary.

Main findings

The systematic review by Xie et al. (2015) aimed to evaluate the effectiveness of brief psychotherapy (including CBT and psychodynamic therapy) for depression in people with Parkinson's disease. Twelve RCTs were included in the review, with 766 participants. Based on meta-analyses, the authors reported that there was a significant effect in favour of brief psychotherapy compared to controls for depression using the HAMD scale (SMD -1.45 (95% CI -2.00 to -0.91), 10 studies, n=724), and for the Montreal cognitive assessment (MoCA) test (SMD 0.52 (95% CI 0.15 to 0.88), 2 studies, n=120). There was no significant difference between brief psychotherapy compared to controls when the PDQ-39 scale was used as an outcome measure (SMD -0.87 (95% CI -2.55 to 0.80), 3 studies, n=160).

A pilot study by Lawson et al. (2013) evaluated the effectiveness of guided self-help, delivered as bibliotherapy, on decreasing worry in 54 people with Parkinson's disease. In this study, both intervention and control groups received bibliotherapy, but the intervention group received eight chapters of a booklet and telephone support at two week intervals, whereas the control group received only two chapters, and only one phone call. After 3 months, there was a significant decrease from baseline in the Penn State Worry Questionnaire scores in the intervention group, and a significant increase from baseline in the control group ($z=2.19$, $p=0.03$). There was, however, no significant differences between the groups. Other outcomes evaluated were the Intolerance of Uncertainty Scale, beliefs about worry using the Metacognitions Questionnaire, and health status using the Parkinson's Disease Questionnaire. No significant changes from baseline, or between group differences, were observed for any of these outcomes.

Authors' conclusions

Xie et al. (2015) concluded that brief psychotherapy is likely effective in the management of depressions in people with PD, but the findings from the systematic review should be treated with caution due to the high variation in clinical presentation across the population samples and low methodological quality of the included trials.

Lawson et al. (2013) concluded that "bibliotherapy has the potential to be useful and cost effective as a management strategy for the treatment of worry in people with PD."

Reliability of conclusions/Strength of evidence

The SR by Xie et al. (2015) is methodologically limited because the authors conducted a statistical analysis (meta-analysis) by combining results from studies, which varied in terms of the clinical presentation of the participants. It is also not clear why the authors used a standardised mean difference (this summary statistic is usually used when different outcome scales have been used). Thus, the reliability of the overall effect sizes should be treated with caution. Based on the results from the individual studies presented in an included table, it does appear that brief psychodynamic therapy has been effective at reducing depression. As the authors point out, however, many of the studies had low methodological quality, meaning the reliability of their results is uncertain.

The pilot study by Lawson et al. (2013) used an appropriate method of randomisation, but only 60% of the randomised participants were included in the analysis, and the study had a very small sample size, so that the results are unlikely to be reliable. In addition, the conclusions do not appear to be supported by the study results.

What do guidelines say?

Neither NICE nor SIGN guidelines comment upon the effectiveness of low intensity individual cognitive behavioural therapy (CBT) in treating anxiety and/or depression in patients with Parkinson's disease.

Date question received: 10/04/2015
Date searches conducted: 20/04/2015
Date answer completed: 14/05/2015

References

Systematic reviews

Xie, C., Wang, X., Chen, J., Lin, H., Chen , Y., Pan, J., & Wang, W. (2015). A systematic review and meta-analysis of cognitive behavioural and psychodynamic therapy for depression in Parkinson's disease patients. *Neurological Sciences,* doi 10.1007/s10072-015-2118-0

Randomised controlled trials

Lawson, R. A., Millar, D., Brown, R. G., & Burn, D. J. (2013). Guided self-help for the management of worry in Parkinson's disease: a pilot study. *Journal of Parkinson's Disease*, *3*(1), 61-68.

Results

Systematic reviews

Author (year)	Search date	Inclusion criteria	Number of included studies	Summary of results	Risk of bias
Xie at al. (2015).	04/2015	*Participants:* Adults diagnosed with Parkinson's disease (PD), who also present with depressive symptoms (measures of symptoms and inclusion criteria for depressive symptoms vary). *Intervention*: Brief psychotherapy, defined as therapy focusing on modifying patients' beliefs that lead to dysfunctional thoughts. This includes both brief Cognitive Behavioural Therapy (CBT) and psychodynamic therapy. *Comparator*: (i). Brief psychotherapy (including both types) vs control group, which include: medication (5 studies); conventional nursing support (3 studies); no treatment (1 study); placebo medication (1 study); telephone support (2 study). (ii). CBT vs psychodynamic therapy	12 RCTs (766 patients)	All of the included studies were deemed to have a moderate to severe risk of bias by the review authors. The authors combined 10 studies (n=724) in a meta-analysis that evaluated depression using the HAMD scale. They reported a significant effect in favour of brief psychotherapy compared to controls (SMD -1.45 (95% CI -2.00 to -0.91). There was, however, significant heterogeneity between the studies (I-squared = 91%). The authors combined 3 studies (n=160) that used the PDQ-39 scale as an outcome measure. They reported no significant difference between brief psychotherapy compared to controls (SMD -0.87 (95% CI -2.55 to 0.80). There was, however, significant heterogeneity between the studies (I-squared = 93%).	High

		Outcome: Scores on scales measuring depression symptoms (including Hamilton rating scale for depression (HAMD); Beck depression inventory (BDI); self-rating depression scale (SDS); Hospital Anxiety and Depression scale anxiety Score (HADS-A)), and other measures including wellbeing general well-being schedule (GWS); Adverse events; Mini Mental State Examination (MMSE); Montreal cognitive assessment (Moca); clinician's global impressions-severity of illness scale (CGI-SI); Addenbrooke's cognitive examination; (ACE-R); Penn State Worry Questionnaire; (PSWQ); intolerance of uncertainty scale (IUS); Parkinson's disease questionnaire (PDQ-39). *Study design*: Randomised controlled trials (RCTs) were eligible for inclusion.		The authors combined 2 studies (n=120) that used the Montreal cognitive assessment (Moca). They found a significant difference in favour of brief psychotherapy compared to controls (SMD 0.52 (95% CI 0.15 to 0.88). There was no significant heterogeneity between the studies (I-squared = 0%). Subgroup analyses (for studies reporting on HAMD) were conducted by type of therapy (i.e. psychodynamic therapy and CBT), study country (China and USA), study quality (high and low quality studies), study length (less than 6 weeks and greater than 6 weeks). The authors reported that there were differences for all subgroups analysed. We note, however, that the authors treated these differences as though they were head-to-head comparison but subgroup analyses only demonstrate if there are significant differences between groups – not how effective the interventions are compared to each other.	

Randomised controlled trials

Author (year)	**Inclusion criteria**	**Number of participants**	**Summary of results**	**Risk of bias**
Lawson et al. (2013)	*Participants*: Adults with a current clinical diagnosis of idiopathic PD and a Hospital Anxiety and Depression Scale anxiety score (HADS-A) of over 8. Participants were excluded if they had undertaken any psychological intervention for anxiety in the preceding 12 months, were currently receiving CBT or planned to do so, or were diagnosed with any other mental health condition (including depression). *Intervention*: Participants in the intervention group were given a booklet based on the online self-help tool *What? Me Worry!?!* The booklet was divided in 8 chapters, with	N=54 (28 to intervention and 26 to control group)	32 participants were included in the analysis (17 in the intervention group and 15 in the control group). After 3 months, there was a significant decrease in PSWQ scores from baseline ($z=-2.35$, $p=0.02$), with a borderline change from baseline score for IUS ($z=-1.96$, $p=0.05$). In the control group, there was a significant increase in PSWQ scores from baseline ($z=2.19$, $p=0.03$). No other significant differences were observed for the other outcome measures. Comparisons between the intervention and control group, were not, however, significant for PSWQ.	High (due to small sample size)

	one chapter to be read per week. The study researchers made fortnightly contact by phone to check progress and address any queries. *Comparator*: Control group, who received the first two chapters of *What? Me Worry!?!* and one phone call from a researcher after two weeks. No management advice was provided. *Outcome*: Primary outcome: Worry, as measured by the Penn State Worry Questionnaire (PSWQ). Secondary outcomes: Intolerance of Uncertainty Scale (IUS); the Metacongitions Questionnaire (MCQ-30); Health status measured by the Parkinson's Disease Qustionnaire (PDQ-39).			

Risk of bias

Systematic reviews

Author (year)	RISK OF BIAS				
	Inclusion criteria	Searches	Review process	Quality assessment	Synthesis
Xie et al. 2015	☺	☺	?	☺	☹

Randomised controlled trials

Study	RISK OF BIAS					
	Random allocation	Allocation concealment	Blinding of participants and personnel	Blinding of outcome assessment	Incomplete outcome data	Selective Reporting
Lawson et al. 2013	☺	?	?	NA	☺	?

☺ Low risk ☹ High risk ? Unclear risk NA – not applicable (self-reported outcome assessment)

Search details

Source	Search Strategy	Number of hits	Relevant evidence identified
Guidelines			
NICE	Parkinsons	31	0
Systematic Reviews			
DARE	15 (GAD) IN DARE 18 16 MeSH DESCRIPTOR Depression EXPLODE ALL TREES 576 17 MeSH DESCRIPTOR Adjustment Disorders EXPLODE ALL TREES 3 18 MeSH DESCRIPTOR Depressive Disorder EXPLODE ALL TREES 1035 19 MeSH DESCRIPTOR Depressive Disorder, Major EXPLODE ALL TREES 330 20 MeSH DESCRIPTOR Depressive Disorder, Treatment-Resistant EXPLODE ALL TREES 15 21 MeSH DESCRIPTOR Long-Term Synaptic Depression EXPLODE ALL TREES 0 22 (depress*) IN DARE 2160 23 (econom*) IN DARE 1591 24 #22 NOT #23 2029 25 MeSH DESCRIPTOR Mood Disorders EXPLODE ALL TREES 1224 26 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 1041 27 #12 OR #13 OR #14 OR #15 1589 28 #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #24 2553 29 #27 OR #28 3310 30 #26 AND #29 59	59	1
Primary Studies			
MEDLINE	1. PsycInfo; PARKINSON'S DISEASE/; 15673 results. 2. PsycInfo; parkinson*.af; 26272 results. 3. PsycInfo; 1 OR 2; 26272 results.	20	1

	4. PsycInfo; COGNITIVE BEHAVIOR THERAPY/; 13014 results. 5. PsycInfo; COGNITIVE THERAPY/; 19426 results. 6. PsycInfo; "cognitive behav*".ti,ab; 29759 results. 7. PsycInfo; "cognitive therapy".ti,ab; 4874 results. 8. PsycInfo; cbt.ti,ab; 8570 results. 9. PsycInfo; 4 OR 5 OR 6 OR 7 OR 8; 39250 results. 10. PsycInfo; 3 AND 9; 126 results. 11. PsycInfo; ANXIETY/; 48918 results. 12. PsycInfo; anxiety.ti,ab; 141409 results. 13. PsycInfo; "DEPRESSION (EMOTION)"/; 22197 results. 14. PsycInfo; MAJOR DEPRESSION/; 92621 results. 15. PsycInfo; depression.ti,ab; 179606 results. 16. PsycInfo; 11 OR 12 OR 13 OR 14 OR 15; 295611 results. 17. PsycInfo; 10 AND 16; 63 results. 18. Medline; PARKINSON'S DISEASE/; 0 results. 19. Medline; parkinson*.af; 95644 results. 20. Medline; 18 OR 19; 95644 results. 21. Medline; COGNITIVE BEHAVIOR THERAPY/; 0 results. 22. Medline; COGNITIVE THERAPY/; 16551 results. 23. Medline; "cognitive behav*".ti,ab; 16236 results. 24. Medline; "cognitive therapy".ti,ab; 1867 results. 25. Medline; cbt.ti,ab; 5516 results. 26. Medline; 21 OR 22 OR 23 OR 24 OR 25; 26233 results. 27. Medline; 20 AND 26; 187 results. 28. Medline; ANXIETY/; 54797 results. 29. Medline; anxiety.ti,ab; 117740 results. 30. Medline; "DEPRESSION (EMOTION)"/; 0 results. 31. Medline; MAJOR DEPRESSION/; 0 results. 32. Medline; depression.ti,ab; 226185 results. 33. Medline; 28 OR 29 OR 30 OR 31 OR 32; 314589 results. 34. Medline; 27 AND 33; 62 results. 35. Medline; exp PARKINSON DISEASE/; 48505 results.		

	36. Medline; DEPRESSION/; 79081 results. 37. Medline; 19 OR 35; 95644 results. 38. Medline; 22 OR 23 OR 24 OR 25; 26233 results. 39. Medline; 32 OR 36; 255726 results. 40. Medline; 37 AND 38 AND 39; 53 results. 41. Medline; randomized.ab; 310415 results. 42. Medline; placebo.ab; 158038 results. 43. Medline; randomly.ab; 224898 results. 44. Medline; trial.ab; 312837 results. 45. Medline; groups.ab; 1413278 results. 46. Medline; "randomized controlled trial".pt; 385409 results. 47. Medline; "controlled clinical trial".pt; 88668 results. 48. Medline; 41 OR 42 OR 43 OR 44 OR 45 OR 46 OR 47; 2051878 results. 49. Medline; 40 AND 48; 20 results.		
Cinahl	18. CINAHL; PARKINSON'S DISEASE/; 0 results. 19. CINAHL; parkinson*.af; 21392 results. 20. CINAHL; 18 OR 19; 21392 results. 21. CINAHL; COGNITIVE BEHAVIOR THERAPY/; 0 results. 22. CINAHL; COGNITIVE THERAPY/; 8025 results. 23. CINAHL; "cognitive behav*".ti,ab; 4871 results. 24. CINAHL; "cognitive therapy".ti,ab; 495 results. 25. CINAHL; cbt.ti,ab; 1523 results. 26. CINAHL; 21 OR 22 OR 23 OR 24 OR 25; 10294 results. 27. CINAHL; 20 AND 26; 112 results. 28. CINAHL; ANXIETY/; 16074 results. 29. CINAHL; anxiety.ti,ab; 25645 results. 30. CINAHL; "DEPRESSION (EMOTION)"/; 0 results. 31. CINAHL; MAJOR DEPRESSION/; 0 results. 32. CINAHL; depression.ti,ab; 43243 results. 33. CINAHL; 28 OR 29 OR 30 OR 31 OR 32; 64573 results. 34. CINAHL; 27 AND 33; 28 results. 35. CINAHL; PARKINSON DISEASE/; 7751 results.	11	1

	36. CINAHL; DEPRESSION/; 44882 results. 37. CINAHL; 19 OR 35; 21392 results. 38. CINAHL; 22 OR 23 OR 24 OR 25; 10294 results. 39. CINAHL; 28 OR 29 OR 32 OR 36; 80176 results. 40. CINAHL; 37 AND 38 AND 39; 34 results. 41. CINAHL; random*.ti,ab; 117589 results. 42. CINAHL; (doubl* ADJ blind*).ti,ab; 14398 results. 43. CINAHL; (singl* ADJ blind*).ti,ab; 2255 results. 44. CINAHL; groups.ti,ab; 145510 results. 45. CINAHL; exp EXPERIMENTAL DESIGN/; 0 results. 46. CINAHL; controlled.ti,ab; 68034 results. 47. CINAHL; (clinical adj3 study).ti,ab; 11007 results. 48. CINAHL; trial.ti,ab; 71003 results. 49. CINAHL; "randomized controlled trial".ti,ab; 12407 results. 50. CINAHL; 41 OR 42 OR 43 OR 44 OR 45 OR 46 OR 47 OR 48 OR 49; 274823 results. 51. CINAHL; 40 AND 50; 11 results.		
PsycINFO	1. PsycInfo; PARKINSON'S DISEASE/; 15673 results. 2. PsycInfo; parkinson*.af; 26272 results. 3. PsycInfo; 1 OR 2; 26272 results. 4. PsycInfo; COGNITIVE BEHAVIOR THERAPY/; 13014 results. 5. PsycInfo; COGNITIVE THERAPY/; 19426 results. 6. PsycInfo; "cognitive behav*".ti,ab; 29759 results. 7. PsycInfo; "cognitive therapy".ti,ab; 4874 results. 8. PsycInfo; cbt.ti,ab; 8570 results. 9. PsycInfo; 4 OR 5 OR 6 OR 7 OR 8; 39250 results. 10. PsycInfo; 3 AND 9; 126 results. 11. PsycInfo; ANXIETY/; 48918 results. 12. PsycInfo; anxiety.ti,ab; 141409 results. 13. PsycInfo; "DEPRESSION (EMOTION)"/; 22197 results. 14. PsycInfo; MAJOR DEPRESSION/; 92621 results. 15. PsycInfo; depression.ti,ab; 179606 results.	27	2

	16. PsycInfo; 11 OR 12 OR 13 OR 14 OR 15; 295611 results. 17. PsycInfo; 10 AND 16; 63 results. 18. PsycInfo; random*.ti,ab; 140291 results. 19. PsycInfo; (doubl* ADJ blind*).ti,ab; 19208 results. 20. PsycInfo; (singl* ADJ blind*).ti,ab; 1662 results. 21. PsycInfo; groups.ti,ab; 384594 results. 22. PsycInfo; exp EXPERIMENTAL DESIGN/; 9701 results. 23. PsycInfo; controlled.ti,ab; 86905 results. 24. PsycInfo; (clinical adj3 study).ti,ab; 11672 results. 25. PsycInfo; trial.ti,ab; 73912 results. 26. PsycInfo; "randomized controlled trial".ti,ab; 9486 results. 27. PsycInfo; 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25 OR 26; 593545 results. 28. PsycInfo; 17 AND 27; 27 results.		
CENTRAL	#1 MeSH descriptor: [Parkinsonian Disorders] explode all trees 2476 #2 "parkinson's disease" 3454 #3 #1 or #2 4076 #4 anxiety or depression 50659 #5 #3 and #4 548 #6 MeSH descriptor: [Cognitive Therapy] explode all trees 5191 #7 "cognitive behav*" 7701 #8 CBT 2981 #9 #6 or #7 or #8 9953 #10 #5 and #9 57 Central only 13	13	2
Summary	**NA**	**NA**	

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