Personality disorders and their relation to treatment outcomes in cognitive behavioural therapy for depression:

A systematic review and meta-analysis

**Online Supplementary Appendices**

**Appendix A. Search strategy**

1. (Depress\* OR “major depress\* disorder\*” OR “unipolar depress\* disorder\*”)
2. AND ((personality ADJ disorder\*) OR personalit\* OR “borderline personality disorder”)
3. AND (“cognitive behavio\* therap\*” OR CBT OR CT OR “cognitive therapy”)
4. AND (depress\* OR “major depress\* disorder\*” OR “unipolar depression” OR “affective disorder\*” OR “mood disorder\*”)

**Appendix B. Studies that were screened but excluded from the review**

|  |  |  |
| --- | --- | --- |
| **First Author** | **DOI** | **Exclusion Reason** |
| Akbari, J | a | Not written in the English language |
| Allen, J G | b | Not a peer-reviewed journal article  |
| Antérion, T | c | Failed to meet experimental design |
| Arendarska, A | d | Not written in the English language |
| Beck, A T | e | Not a peer-reviewed journal article  |
| Bagby, M R | 10.1177/070674370805300605 | No diagnosis of a personality disorder |
| Brown, G K | 10.1521/pedi.18.3.257.35450 | None of the sample had no personality disorder |
| Brown, J | 10.1007/s00127-005-0896-z | Failed to meet experimental design |
| Camart, N | ENC-12-2006-32-6-0013-7006-101019-200630172 | Not written in the English language |
| Campbell, P L | f | Not a peer-reviewed journal article  |
| Clark, D A | g | Not a peer-reviewed journal article |
| Conrad, R | 10.1016/j.pain.2007.07.024 | No use of CBT in the study |
| Coplan, J D | h | No use of CBT in the study |
| Cottraux, J | 10.1159/000229769 | None of the sample had no personality disorder |
| Dautovich, N D | i | Not a peer-reviewed journal article  |
| Davis, L | 10.1016/j.beth.2009.09.002 | None of the sample had no personality disorder |
| De Bolle, M | 10.1521/pedi.2011.25.1.1 | Not possible to examine the effects of PD specifically within CBT treatment condition |
| Dixon-Gordon, K L | 10.1016/j.beth.2017.03.001 | No MDD present  |
| Dreessen | 10.1016/0010-440X(94)90018-3 | Patients treated with CBT for anxiety disorders |
| Dunner, D L | 10.1002/(SICI)1522-7162(1996)4:1<34::AID-DEPR4>3.0.CO;2-F | Does not include comorbid PD |
| Farabaugh, A | 10.1097/00005053-200204000-00006 | Results pooled; no comparison can be made |
| Farabaugh, A | 10.1016/j.comppsych.2004.10.005 | Not possible to examine the effects of PD specifically within CBT treatment condition |
| Fournier, J | j | Not a peer-reviewed journal article  |
| Fournier, J | 10.1016/j.brat.2013.03.010 | Does not include comorbid PD |
| Free | 10.1080/00207284.1991.11490679 | Does not include comorbid PD |
| Grilo, C M | 10.1053/comp.2002.35907 | Failed to meet experimental design |
| Grilo, C M  | 10.1037/0022-006X.72.5.767. | No use of CBT in the study |
| Guimon, J | k | Not a peer-reviewed journal article  |
| Hautzinger, G | N/A | Not written in the English language |
| Jackson, B | 10.1016/j.yapd.2006.04.008 | Not a peer-reviewed journal article  |
| Jarrett, R B | l | Not a peer-reviewed journal article  |
| Karlin, B E | m | Not a peer-reviewed journal article  |
| Konen, A | n | Not written in the English language |
| Kramer, U | 10.1016/j.encep.2012.03.006 | Not written in the English language |
| Spinhoven, P | 10.1080/02699930500342662 | Does not include comorbid PD |
| Kuyken, W | 10.1159/000172619 | Does not include comorbid PD |
| Lee | 10.1023/B:JOCP.0000036632.27389.c4 | Failed to meet experimental design |
| Levenson, J | 10.1037/a0029396 | No use of CBT in the study |
| Lin, T | 10.1080/13811118.2018.1436104 | No MDD present  |
| Maddux, R E | 10.1016/j.jad.2009.01.010 | No use of CBT in the study |
| Mazure, C | 10.1016/0165-1781(90)90148-X | No use of CBT in the study |
| McCarter, K L | 10.1186/s12888-016-0937-z | Does not include comorbid PD |
| McMain, S | 10.1176/appi.ajp.2012.11091416 | No use of CBT in the study |
| Mitjanas, T | o | Not written in the English language |
| Moller, H | 10.1080/15622970903101665 | Not a peer-reviewed journal article  |
| Moradveisi, L  | 10.1016/j.brat.2013.05.006 | No use of CBT in the study |
| Newton-Howes, G | 10.1521/pedi\_2017\_31\_311 | Not a peer-reviewed journal article  |
| Patience, D A | 10.1192/bjp.167.3.324 | No use of CBT in the study |
| Quilty, L C | 10.1521/pedi.2010.24.3.392  | Does not include comorbid PD |
| Rees, C S | 10.1037/a0035158 | None of the sample had no personality disorder |
| Robins | p | Not a peer-reviewed journal article  |
| Ruesch, M | 10.1186/s13063-015-0801-3 | Does not include comorbid PD |
| Saulsman, L | 10.1002/jclp.20278 | None of the sample had no personality disorder |
| Sharp, C | 10.1007/s00787-014-0574-3 | No MDD present  |
| Shea, M T | q | Not a peer-reviewed journal article  |
| Simun, A | r | Not a peer-reviewed journal article  |
| Steinlechner, S | s | Not written in the English language |
| Stone, M H | 10.1016/S0193-953X(05)70151-9 | Failed to meet experimental design |
| Kudak | t | Not a peer-reviewed journal article  |
| Szanto, K | 10.2165/00002512-200219010-00002 | Failed to meet experimental design |
| Titov, N | 10.1016/j.janxdis.2015.08.002 | Does not include comorbid PD |
| Tyrer, P | 10.1192/bjp.162.2.219 | Results pooled; no comparison can be made |
| Tyrer, P | 10.1177/0020764003049001148 | Results pooled; no comparison can be made |
| Tyrer, P | 10.1017/S0033291704002569 | Results pooled; no comparison can be made |
| Vyskocilova, J | 10.5507/bp.2011.005 | No MDD present  |
| Wenning, B | u | Not written in the English language |
| Whisman, M | v | Not a peer-reviewed journal article  |
| Yanes, P K | 10.1177/1534650110383307 | Failed to meet experimental design |
| a Akbari, et al, (2009), Journal of Psychology, 13, 3, 342-359. b Allen, J G (2006), Coping with depression: From catch-22 to hope.c Antérion, et al (2002), Encephale, 28(2):154-9. d Arendarska, A, et al, (2006), Psychoterapia, (4): 11-34. e Beck, A T, (2015), Cognitive therapy of personality disorders.f Campbell, P L (2002), Dissertation Abstracts International: Section B: The Sciences and Engineering, 63, 5B, 2574. g Clark, D L (2015), Cognitive therapy of personality disorders., 3rd ed.h Coplan, et al (1993), J Clin Psychiatry, 54 Suppl:69-74.i Dautovich, N D (2011), Cognitive behavior therapy with older adults: Innovations across care settings.j Fournier, J (2011), Dissertation Abstracts International: Section B: The Sciences and Engineering, 71, 11B, 7085.kGuimon, J (2004), European Journal of Psychiatry, Volume 18, Issue SUPPL., 2004, Pages 49-60l Jarrett, R B (1997) Treatment strategies for patients with psychiatric comorbidity, 135-162. m Karlin, B E (2011), Cognitive behavior therapy with older adults: Innovations across care settings, 1-28. n Konen, A (1992), Treatment of depressed patients: current trends. Combination cognitive group therapy with cognitive adjustment for depressed inpatients, 29;81(40):1192-5.o Mitjanas, T, (2004), Revista de Psiquiatria de la Facultad de Medicina de Barcelona, 31(4):174-182.p Robins, et al (2008), Adapting cognitive therapy for depression: Managing complexity and comorbidity.q Shea, et al (1992), Journal of Consulting and Clinical Psychology, 60(6), 857-868. r Simun, A (1999), Dissertation Abstracts International: Section B: The Sciences and Engineering, 60, 3B, 1316. s Steinlechner, et al (2012), Behavioral Therapy and Behavioral Medicine 33 (2): 176-187. t Kudak, (2011), Combining CBT and medication: An evidence-based approach.uWenning, et al (2002)Zum Zusammenhang von depressiven Erkrankungen und Personlichkeitsstorungen, 6(4), 230-242. v Whisman M (2014), The Oxford handbook of depression and comorbidity. |

**Appendix C. Risk of bias assessment**

***C1. Randomised controlled trials***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Author & Date** | **Risk of bias arising from the randomization process** | **Risk of bias due to deviations from the intended interventions (*effect of assignment to intervention*)** | **Risk of bias due to missing outcome data**  | **Risk of bias in measurement of the outcome** | **Risk of bias in selection of the reported result** | **Overall Rating** |
| Fournier, et al (2008) | Low | Moderate  | Low | Low | Low  | Moderate risk |
| Hardy, et al (1995) | Low | Moderate | Unclear  | Low | Low | Moderate risk |
| Joyce, et al (2007) | Low | Low | Low  | Low | Low | Low risk |
| Shea, et al (1990) | Low | Low | Low | Low | Low | Low risk |
| Tyrer, et al (1990) | Low | Low | Moderate | Low | Low | Moderate risk |
| Van Bronswijk, et al (2018) | Low | Low | Low | Low | Low | Low risk |

***C2. Observational cohort studies***

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author & Date** | **Was the issue clearly focused?**  | **Was the cohort recruited in an acceptable way?** | **Was the outcome (Depression levels) accurately measured to minimise bias?**  | **Confounding variables** | **Completeness of results**  | **Precision of results** | **Believability of results** | **Applicability to intended population** | **Fit with other research** | **Implications of the study** | **Overall rating** |
| Ball, et al (2000) | Low risk | Low risk  | Low risk  | Moderate risk  | Low risk | Moderate risk | Low risk | Moderate risk | Low risk | Low risk  | Moderate risk |
| Craigie, et al (2007) | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk |
| Harte & Hawkins II | Low risk | Moderate risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Moderate risk | Moderate risk  |
| van den Hout, et al (2006) | Low risk | Low risk | Moderate risk | Moderate risk | Low risk | Moderate risk | Low risk | Low risk | Moderate risk | Poor | Moderate risk |
|  Kuyken, et al (2001) | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk |

**Appendix D. Funnel plot for primary random-effects meta-analysis**



**Standard error**

**Effect size**