Brief description of patient problem/setting (summarize the case very briefly):

28 y.o female with a pmh of recently diagnosed depression presents with complaints of nausea, weight gain, and sexual disfunction after being prescribed Lexapro 2 months ago. She is curious about other treatment options to avoid these side effects.

Search Question: Clearly state the question (including outcomes or criteria to be tracked)

In adults diagnosed with depression, does cognitive behavioral therapy reduce depressive symptoms and improve patient satisfaction when compared to antidepressive medication?

Question Type: What kind of question is this? (boxes now checkable in Word)

☐Prevalence ☐Screening ☐Diagnosis
☒Prognosis ☒Treatment ☐Harms

Assuming that the highest level of evidence to answer your question will be meta-analysis or systematic review, what other types of study might you include if these are not available (or if there is a much more current study of another type)?

Please explain your choices.
- If meta-analysis or systematic review are not available, I would include cohort studies, and randomized controlled trials. A cohort study would be most appropriate as it would allow us to follow patients over time to efficiently assess depressive symptoms. Randomized controlled trials would also be beneficial as it can create an organized study with a control (CBT) group and experimental group (meds) that would eliminate bias and allow us to evaluate results easily.

PICO search terms:

P	I	C	O
Adults with depression	Cognitive behavioral therapy	Anti-depressive medication	Depressive symptoms
Adults with major depressive disorder	Therapy	medication	Patient satisfaction
	Behavioral therapy	Pharmacotherapy	

Search tools and strategy used:
Please indicate what data bases/tools you used, provide a list of the terms you searched together in each tool, and how many articles were returned using those terms and filters.
Explain how you narrow your choices to the few selected articles.

Results found:
PubMed:

- adults depression behavioral therapy vs medication symptom reduction -200
- adults depression behavioral therapy vs medication symptom reduction -93
  Filter= within 5 years
- adults depression behavioral therapy vs medication symptom reduction - 54
- Filter= randomized control trials, meta analysis, systematic reviews

Science Direct:
- adults with depression cbt medication symptom reduction satisfaction - 1874
- adults with depression cbt medication symptom reduction satisfaction - 219
  Filter= within 5 years, review articles

JAMA:
- adults with depression cognitive behavioral therapy vs medication reduction in symptoms patient satisfaction – 83
- adults with depression cognitive behavioral therapy vs medication reduction in symptoms patient satisfactio - 30
  Filter= within 5 years

- I narrowed my choices to the few articles by first making sure they were based in the USA. I also wanted to find articles that directly included the PICO search elements I was looking to examine. It was also important to me to use articles that were the highest level of evidence available.

Identify at least 4 articles (or other appropriate reputable sources) that answer your specific question with the highest available level of evidence (you will probably need to look at more than 4 articles to get the 4 most focused and highest level articles to address your question). Please make sure that they are Medline indexed.

Please post the citation and abstract for each article (to include the journal and authors' names and date) and say why you chose it.
Please also note what kind of article it is (e.g. meta-analysis, cohort study, or independent blind comparison with gold standard of diagnosis, etc.).
At the bottom of each abstract, please comment on what your key points are from this article (including any points or concepts included in the article, but not present in the abstract – i.e. make the concepts understandable to the reader)
Please note that if the evidence is not in the abstract, you must clearly summarize the evidence in your posting.

Citation: DeRubeis, R. J., Hollon, S. D., Amsterdam, J. D., Shelton, R. C., Young, P. R., Salomon, R. M., O'Reardon, J. P., Lovett, M. L., Gladis, M. M., Brown, L. L., & Gallop, R. (2005). Cognitive therapy vs medications in the treatment of moderate to severe depression. *Archives of general psychiatry*, *62*(4), 409–416. https://doi.org/10.1001/archpsyc.62.4.409
Type of article: Randomized control study
Abstract:

Background- There is substantial evidence that antidepressant medications treat moderate to severe depression effectively, but there is less data on cognitive therapy's effects in this population.
Objective- To compare the efficacy in moderate to severe depression of antidepressant medications with cognitive therapy in a placebo-controlled trial.
Design- Random assignment to one of the following: 16 weeks of medications (n = 120), 16 weeks of cognitive therapy (n = 60), or 8 weeks of pill placebo (n = 60).
Setting- Research clinics at the University of Pennsylvania, Philadelphia, and Vanderbilt University, Nashville, Tenn.
Patients: Two hundred forty outpatients, aged 18 to 70 years, with moderate to severe major depressive disorder.
Interventions- Some study subjects received paroxetine, up to 50 mg daily, augmented by lithium carbonate or desipramine hydrochloride if necessary; others received individual cognitive therapy.
Main outcome measure- The Hamilton Depression Rating Scale provided continuous severity scores and allowed for designations of response and remission.
Results- At 8 weeks, response rates in medications (50%) and cognitive therapy (43%) groups were both superior to the placebo (25%) group. Analyses based on continuous scores at 8 weeks indicated an advantage for each of the active treatments over placebo, each with a medium effect size. The advantage was significant for medication relative to placebo, and at the level of a nonsignificant trend for cognitive therapy relative to placebo. At 16 weeks, response rates were 58% in each of the active conditions; remission rates were 46% for medication, 40% for cognitive therapy. Follow-up tests of a site x treatment interaction indicated a significant difference only at Vanderbilt University, where medications were superior to cognitive therapy. Site differences in patient characteristics and in the relative experience levels of the cognitive therapists each appear to have contributed to this interaction.
Conclusion- Cognitive therapy can be as effective as medications for the initial treatment of moderate to severe major depression, but this degree of effectiveness may depend on a high level of therapist experience or expertise.

Key points:

- randomized control trial of 240 patients (120 ADM, 60 CBT, 60 placebo pill)
- subjects were assessed using the Hamilton Depression Rating Scale at 8 weeks and 16 weeks
- at 8 weeks all three treatments were assessed, at 16 weeks placebo was not assessed.
- Both pharmacotherapy and cognitive therapy out performed placebo group, with pharmacotherapy and cognitive therapy results being comparable with no significant difference in either group
- One thing to note is that cognitive therapy is heavily reliant on the expertise and experience of the therapist involved.

Why I chose it:

I chose this article because it was a study performed in the USA, a high level of evidence as it was a well organized randomized control trial. I also liked how the trial included a placebo group for further assessment. The patients being aged 18-70 (adults) were part of my search criteria. The outcomes that were being measured (HDRS), were directly related to what I wanted to study. The interventions of cognitive therapy, and the use of paroxetine (ADM) were also the two interventions I was looking to evaluate. Overall, all elements of the study was what I was looking to research and it helped evaluate the clinical bottom line of my pico question.

Citation:

Kappelmann, N., Rein, M., Fietz, J., Mayberg, H. S., Craighead, W. E., Dunlop, B. W., Nemeroff, C. B., Keller, M., Klein, D. N., Arnow, B. A., Husain, N., Jarrett, R. B., Vittengl, J. R., Menchetti, M., Parker, G., Barber, J. P., Bastos, A. G., Dekker, J., Peen, J., Keck, M. E., … Kopf-Beck, J. (2020). Psychotherapy or medication for depression? Using individual symptom meta-analyses to derive a Symptom-Oriented Therapy (SOrT) metric for a personalised psychiatry. *BMC medicine*, *18*(1), 170. https://doi.org/10.1186/s12916-020-01623-9
Type of article: Systematic Review & Meta Analyses
Abstract: Background- Antidepressant medication (ADM) and psychotherapy are effective treatments for major depressive disorder (MDD). It is unclear, however, if treatments differ in their effectiveness at the symptom level and whether symptom information can be utilized to inform treatment allocation. The present study synthesis comparative effectiveness information from randomized controlled trials (RCTs) of ADM versus psychotherapy for MDD at the symptom level and develops and tests the Symptom-Oriented Therapy (SOrT) metric for precision treatment allocation. Methods- First, we conducted systematic review and meta-analyses of RCTs comparing ADM and psychotherapy at the individual symptom level. We searched PubMed Medline, PsycINFO, and the Cochrane Central Register of Controlled Trials databases, a database specific for psychotherapy RCTs, and looked for unpublished RCTs. Random-effects meta-analyses were applied on sum-scores and for individual symptoms for the Hamilton Rating Scale for Depression (HAM-D) and Beck Depression Inventory (BDI) measures. Second, we computed the SOrT metric, which combines meta-analytic effect sizes with patients' symptom profiles. The SOrT metric was evaluated using data from the Munich Antidepressant Response Signature (MARS) study (n = 407) and the Emory Predictors of Remission in Depression to Individual and Combined Treatments (PReDICT) study (n = 234). Results- The systematic review identified 38 RCTs for qualitative inclusion, 27 and 19 for quantitative inclusion at the sum-score level, and 9 and 4 for quantitative inclusion on individual symptom level for the HAM-D and BDI, respectively. Neither meta-analytic strategy revealed significant differences in the effectiveness of ADM and psychotherapy across the two depression measures. The SOrT metric did not show meaningful associations with other clinical variables in the MARS sample, and there was no indication of utility of the metric for better treatment allocation from PReDICT data. Conclusions- This registered report showed no differences of ADM and psychotherapy for the treatment of MDD at sum-score and symptom levels. Symptom-based metrics such as the proposed SOrT metric do not inform allocation to these treatments, but predictive value of symptom information requires further testing for other treatment comparisons.
Key points: - Systematic review and meta-analyses of RCT's searched on PubMed Medline, PsycINFO, and the Cochrane Central Register of Controlled Trials databases, a database specific for psychotherapy RCTs, and looked for unpublished RCTs. - Meta analyses was then applied on sum scores- and for individual symptoms using the HRDS and BDI scales. SOrT (symptom oriented therapy) metric was then used which combines meta-analytic effect size with patients symptom profiles. - 38 RCT's were assessed. 27 (HRDS) and 19 (BDI) for quantitative inclusion at sum-score level, and 9 (HRD) and 4(BDI) for quantitative inclusion on individual symptom level. - No symptom-specific effectiveness differences between both methods of treatment that were examined.
Why I chose it:

I chose this article because it was a high level of evidence (systematic review & meta-analyses) that included all elements I was looking to examine in my research. It is reported as the largest symptom-specific meta analyses directly comparing psychotherapy and ADM for depression. One flaw that I had with the study was the method of evaluation was slightly confusing to understand (SoRT). Overall I thought it was a detailed high level of evidence that helped me further come to a conclusion of my pico research.

Citation:
Boschloo, L., Bekhuis, E., Weitz, E. S., Reijnders, M., DeRubeis, R. J., Dimidjian, S., Dunner, D. L., Dunlop, B. W., Hegerl, U., Hollon, S. D., Jarrett, R. B., Kennedy, S. H., Miranda, J., Mohr, D. C., Simons, A. D., Parker, G., Petrak, F., Herpertz, S., Quilty, L. C., John Rush, A., … Cuijpers, P. (2019). The symptom-specific efficacy of antidepressant medication vs. cognitive behavioral therapy in the treatment of depression: results from an individual patient data meta-analysis. *World psychiatry : official journal of the World Psychiatric Association (WPA)*, *18*(2), 183–191. https://doi.org/10.1002/wps.20630

Type of article:
Update of Meta-Analysis dataset

Abstract:
A recent individual patient data meta-analysis showed that antidepressant medication is slightly more efficacious than cognitive behavioral therapy (CBT) in reducing overall depression severity in patients with a DSM-defined depressive disorder. We used an update of that dataset, based on seventeen randomized clinical trials, to examine the comparative efficacy of antidepressant medication vs. CBT in more detail by focusing on individual depressive symptoms as assessed with the 17-item Hamilton Rating Scale for Depression. Five symptoms (i.e., "depressed mood" , "feelings of guilt" , "suicidal thoughts" , "psychic anxiety" and "general somatic symptoms") showed larger improvements in the medication compared to the CBT condition (effect sizes ranging from .13 to .16), whereas no differences were found for the twelve other symptoms. In addition, network estimation techniques revealed that all effects, except that on "depressed mood" , were direct and could not be explained by any of the other direct or indirect treatment effects. Exploratory analyses showed that information about the symptom-specific efficacy could help in identifying those patients who, based on their pre-treatment symptomatology, are likely to benefit more from antidepressant medication than from CBT (effect size of .30) versus those for whom both treatments are likely to be equally efficacious. Overall, our symptom-oriented approach results in a more thorough evaluation of the efficacy of antidepressant medication over CBT and shows potential in "precision psychiatry" .

Key points:

- Dataset of 17 randomized controlled trials to evaluate efficacy of CBT vs ADM
- 17-item (17 symptom observation) Hamilton Rating Scale for Depression was used for assessment.
- Study was an IPDMA (individual patient data meta-analysis) focusing on individual symptoms.
- A significant difference was noted in the following 5 symptoms “depressed mood”, “feelings of guilt”, “suicidal thoughts”, “psychic anxiety”, and “general somatic symptoms” with larger improvements in ADM compared to CBT. In the following 12 symptoms no significant differences between the two treatments were observed.

Why I chose it:

I chose this article because it was an update to a meta-analysis (high level of evidence). The study was explained well, and the graphs and charts that were included in the article really helped me understand and break down the research that was conducted. I also like how the 17 symptoms were clearly stated and expressed (direct effects) and (Indirect effects). I thought this meta-analysis update was conducted well and was a more detailed look at a previously conducted study. It assessed individual symptoms which was an outcome I included. The PICO elements I was examining were incorporated in this study and helped me further understand the clinical bottom line.

Citation:

A.J., Rush., Aaron, T., Beck., Maria, Kovacs., Steven, D., Hollon. Comparative efficacy of cognitive therapy and pharmacotherapy in the treatment of depressed outpatients. Cognitive Therapy and Research, (1977).;1(1):17-37. doi: 10.1007/BF01173502

Type of article:

Randomized Control Trial

Abstract:

Forty-one unipolar depressed outpatients were randomly assigned to individual treatment with either cognitive therapy (N =19)or imipramine (N =22).As a group, the patients had been intermittently or chronically depressed with a mean period of 8.8 years since the onset of their first episode of depression, and 75%were suicidal. For the cognitive therapy patients, the treatment protocol specified a maximum of 20 interviews over a period of 12 weeks. The pharmacotherapy patients received up to 250 mg/day of imipramine for a maximum of 12 weeks. Patients who completed cognitive therapy averaged 10.90 weeks in treatment; those in pharmacotherapy averaged 10.86 weeks. Both treatment groups showed statistically significant decreases in depressive symptomatology. Cognitive therapy resulted in significantly greater improvement than did pharmacotherapy on both a self-administered measure of depression (Beck Depression Inventory)and clinical ratings (Hamilton Rating Scale for Depression and Raskin Scale).Moreover, 78.9%of the patients in cognitive therapy showed marked improvement or complete remission of symptoms as compared to 22.7%of the pharmacotherapy patients. In addition, both treatment groups showed substantial decrease in anxiety ratings. The dropout rate was significantly higher with pharmacotherapy (8 Ss)than with cognitive therapy (1 S).Even when these dropouts were excluded from data analysis, the cognitive therapy patients showed a significantly greater improvement than the pharmacotherapy patients. Follow-up contacts at three and six months indicate that treatment gains evident at termination were maintained over time. Moreover, while 68%of the pharmacotherapy group re-entered treatment for depression, only 16%of the psychotherapy patients did so.

Key points:

- Randomized control trial of 41 depressed patients (15 males, 26 females) ages 18-65.
- 19 patients assigned to cognitive therapy group and 22 to treatment with imipramine (TCA).
- 12 week period of treatment (max of 20 cognitive therapy sessions, max of 12 pharmacotherapy session)
- Methods of evaluation included self-rating scales, BDI, and HRSD
- Results indicated that treatment groups did not differ in initial levels of depression, both treatment options resulted in a significant decrease in depressive symptoms, cognitive therapy is significantly more effective than pharmacotherapy at reducing depressive symptomatology.

Why I chose it:

I chose this article because it was a study that was conducted in the USA that looked directly at what I was looking to examine (CBT vs pharmacotherapy treatment in adults with depression, evaluating symptoms and patient satisfaction). It is a RCT which eliminates bias and allows us to examine a well-controlled organized study with two interventions. The study was easy to assess, and evaluate the results. I also wanted to include this article as the pharmacotherapy drug was a tri-cyclic antidepressant which was different then the medication class in the previous articles I used. This allowed me to assess another drug class and see if that potentially had any affect on the results. This study helped me futher develop my clincal bottom line regarding my PICO question.

What is the clinical "bottom line" derived from these articles in answer to your question?
After conducting my research regarding the comparison of cognitive behavioral therapy vs pharmacotherapy in adults with depression, I found the results to be inconclusive. It was clear that both treatment options greatly improved depressive symptoms, but the results comparing the two methods of treatment were misleading. The 4th article that I examined stated that 15 of the 19 patients undergoing cognitive therapy markedly improved whereas 5 of 22 pharmacotherapy patients markedly improved at the end of treatment, showing that cognitive therapy was way more effective at reducing symptoms. The 3rd article that I examined showed that pharmacotherapy was significantly greater at improving 5 of the 17 evaluated symptoms when compared to cognitive therapy, showing that pharmacotherapy was the more effective treatment. The 1st article I used showed no significant difference between the two treatment methods. The results were mixed, and I also think that there are many variables that play a role in the study for example as mentioned above the expertise and experience of the therapist performing the cognitive therapy. More studies should be examined to reach a conclusive answer.

ARTICLE PDF LINKS

1) Article 1 Depression.pdf
2) Article 2 Depression.pdf
3) Article 3 Depression.pdf
4) Article 4 Depression.pdf