

Best Evidence Summaries of Topics in Mental Healthcare

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

Question

In adults with learning disabilities and substance misuse, what is the most effective treatment in improving patient outcomes?

Clarification of question using *PICO* structure

Patients: Adults with learning disabilities and substance misuse

Intervention: Any intervention

Comparator: Any other intervention

Outcome: Improving patient outcomes

Plain language summary

There is limited evidence assessing the most effective interventions for substance abuse in individuals with learning disabilities. More high quality research in this area is needed to adequately compare treatments.

Clinical and research implications

One moderate quality, pilot trial in 34 US veterans found some evidence that cognitive training with work therapy can significantly improve verbal learning and verbal memory after three months compared to work therapy alone. However, although all participants had an alcohol use disorder, only around 50% had some form of verbal learning or memory impairment and the results were not reported separately for this group. Therefore the results of this trial cannot fully answer this question and there is a lack of evidence about the effectiveness of interventions for substance in adults with learning disabilities.

As this was a small pilot study in a specific population of US veterans, further research into cognitive training in adults with alcohol use disorders is needed. Due to the lack of results for the group with a learning impairment there is also a need for further randomised controlled trials evaluating interventions for substance abuse in adults with learning disabilities.

What does the evidence say?***Number of included studies/reviews (number of participants)***

One pilot randomised controlled trial was found (Bell et al. (2016) which compared a three month daily cognitive training plus work therapy intervention with work therapy alone. This included 34 US veterans who were mostly male (97%), aged 39 to 63 years and had undergone detoxification for an alcohol use disorder. At baseline approximately 50% had a verbal learning or memory impairment but results were only reported overall, not for the group with impairment.

Main findings

Participants receiving cognitive training with work therapy had significantly greater improvements in both verbal learning (Cohen's $d = 1.09$, $p < 0.005$) and verbal memory ($p < 0.01$, Cohen's $d = 1.01$) after 3 months compared with work therapy alone and these benefits were maintained at 6 months.

There was also a significant difference favouring cognitive training ($p < 0.01$) in the proportion of participants with a verbal memory impairment at 3 months which decreased from 46.7% to 20% in the cognitive training group but increased from 56.3% to 68.8% in the work therapy group. No significant differences between groups were seen at 6 months, or for the proportions with verbal learning impairments at 3 or 6 months.

Authors' conclusions

Bell et al. (2016) concluded that cognitive training with work therapy may be effective for remediating deficiencies in verbal learning and memory in patients with alcohol use disorder.

Reliability of conclusions/Strength of evidence

This was a small pilot trial and was of moderate quality. The method of randomisation was appropriate but it was unclear if allocation concealment was used. Due to the differences in the interventions the participants would not have been blinded, and the outcome assessors were also

not blinded which was a limitation noted by the authors. Three participants were excluded from the analysis but for reasons which were unlikely to have been affected by treatment, and both specified outcome measures were reported.

What do guidelines say?

Neither NICE nor SIGN Guidelines comment specifically on treatments for people with both learning difficulties and substance misuse.

Date question received: 16/09/2016

Date searches conducted: 20/09/2016

Date answer completed: 06/10/2016

References***Randomised controlled trials***

Bell, MD., Vissicchio, NA., Weinstein, AJ. (2016) Cognitive Training and Work Therapy for the Treatment of Verbal Learning and Memory Deficits in Veterans with Alcohol Use Disorders. *Journal of Dual Diagnosis* 12(1): pp83-89.

Results

Randomised controlled trials

Author (year)	Inclusion criteria	Number of participants	Summary of results	Risk of bias
Bell et al (2016)	<p>Participants: US Veterans 18 years of age and older receiving health services through the Department of Veterans Affairs (VA). With the presence of an alcohol use disorder and detoxification within 30 days.</p> <p>Intervention: Daily cognitive training (5 hours) plus work therapy (up to 15 hours/week) and treatment as usual for 3 months.</p> <p>Comparator: Work therapy alone (up to 20 hours/week) and treatment as usual</p> <p>Outcome: Verbal memory and learning measured by Hopkins Verbal Learning Test Revised (HVLT). Measured at baseline, 3 and 6 months.</p>	N=34 randomised, 31 analysed (I=15, C=16)	<p>Most participants were male (97%) with a mean age of 55.2 years (range 39 to 63), 77% had been married and 45% had been convicted of a felony. None were currently employed or had immediate plans to return to employment. Around half had a deficit in verbal memory (51.6%) and a similar number (58.1%) had a deficit in verbal learning. Participants received more than 41 hours of cognitive training and both groups had more than 230 hours of productive activity. The two groups were similar at baseline.</p> <p>Participants receiving cognitive training had significantly greater improvements in verbal learning ($p < 0.005$, Cohen's $d = 1.09$) and verbal memory ($p < 0.01$, Cohen's $d = 1.01$) compared to work therapy after 3 months. These differences were maintained at 6 months.</p> <p>The proportions of participants with a verbal memory impairment decreased after 3 months in the cognitive training group (from 46.7% to 20%) but increased in the work therapy group (from 56.3% to 68.8%) and the difference was statistically significant ($p < 0.01$). There</p>	<p>Moderate</p> <p>Randomisation used random blocks of 6 and was performed by an independent statistician but it was unclear if allocation concealment was used.</p> <p>Due to the nature of the interventions it was not possible to blind the participants.</p> <p>Assessments were made by a psychometrician who was not blinded to treatment.</p> <p>Although 3 participants were excluded from the analysis the reasons</p>

			there were no significant between group differences in verbal memory impairment at 3 months ($p = 0.1$) or verbal learning impairment at 3 ($p = 0.18$) or 6 months ($p = 0.59$).	were not related to treatment. All outcomes were reported
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Risk of bias***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
Bell et al (2016)						

 Low risk High risk Unclear risk

Search details

Source	Search Strategy
NICE	Substance/alcohol Misuse Learning Disabilities
MEDLINE	<ol style="list-style-type: none"> 1. Medline; exp LEARNING DISORDERS/; 20133 results. 2. Medline; ((learning OR development*) adj2 (difficult* OR disab* OR problem* OR handicap* OR impair* OR deficient*)).ti,ab; 37669 results. 3. Medline; exp DEVELOPMENTAL DISABILITIES/; 16701 results. 4. Medline; 1 OR 2 OR 3; 67541 results. 5. Medline; ((substance OR alcohol OR drug) adj3 (misuse* OR problem* OR addict* OR abuse* OR dependen* OR disorder*)).ti,ab; 112526 results. 6. Medline; exp SUBSTANCE-RELATED DISORDERS/; 242669 results. 7. Medline; exp ALCOHOL DRINKING/ OR exp ALCOHOLICS/ OR exp ALCOHOLISM/; 116601 results. 8. Medline; (alcohol*).ti,ab; 262792 results. 9. Medline; 5 OR 6 OR 7 OR 8; 456936 results. 10. Medline; 4 AND 9; 1975 results. 11. Medline; 10 [Limit to: (Document type Meta-analysis or Scientific Integrity Review)]; 2 results. 12. Medline; "randomized controlled trial".ti,ab; 45668 results. 13. Medline; "controlled clinical trial".ti,ab; 10588 results. 14. Medline; randomi\$ed.ti,ab; 2 results. 15. Medline; placebo.ti,ab; 175517 results. 16. Medline; "drug therapy".ti,ab; 30523 results. 17. Medline; randomly.ti,ab; 252798 results. 18. Medline; trial.ti,ab; 420295 results. 19. Medline; groups.ti,ab; 1588374 results. 20. Medline; exp RANDOMIZED CONTROLLED TRIAL/; 0 results. 21. Medline; exp CLINICAL TRIAL/ OR exp CONTROLLED CLINICAL TRIAL/; 0 results. 22. Medline; 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20 OR 21; 2116274 results. 23. Medline; 10 AND 22; 385 results.
EMBASE	46. EMBASE; exp LEARNING DISORDERS/; 32007 results.

	<p>47. EMBASE; ((learning OR development*) adj2 (difficult* OR disab* OR problem* OR handicap* OR impair* OR deficien*)).ti,ab; 42790 results.</p> <p>48. EMBASE; exp DEVELOPMENTAL DISABILITIES/; 35225 results.</p> <p>49. EMBASE; ((substance OR alcohol OR drug) adj3 (misuse* OR problem* OR addict* OR abuse* OR dependen* OR disorder*)).ti,ab; 147168 results.</p> <p>50. EMBASE; exp SUBSTANCE-RELATED DISORDERS/; 260831 results.</p> <p>51. EMBASE; exp ALCOHOL DRINKING/ OR exp ALCOHOLICS/ OR exp ALCOHOLISM/; 143875 results.</p> <p>52. EMBASE; (alcohol*).ti,ab; 355004 results.</p> <p>53. EMBASE; 46 OR 47 OR 48; 89174 results.</p> <p>54. EMBASE; 49 OR 50 OR 51 OR 52; 568749 results.</p> <p>55. EMBASE; 53 AND 54; 3248 results.</p> <p>56. EMBASE; 55 [Limit to: (EBM-Evidence Based Medicine Evidence Based Medicine or Meta Analysis or Systematic Review)]; 79 results.</p> <p>57. EMBASE; random*.ti,ab; 1128264 results.</p> <p>58. EMBASE; factorial*.ti,ab; 28536 results.</p> <p>59. EMBASE; ((crossover* OR cross-over*)).ti,ab; 84158 results.</p> <p>60. EMBASE; placebo*.ti,ab; 243782 results.</p> <p>60. EMBASE; placebo*.ti,ab; 243782 results.</p> <p>61. EMBASE; (doubl* ADJ blind*).ti,ab; 170728 results.</p> <p>62. EMBASE; (singl* ADJ blind*).ti,ab; 18317 results.</p> <p>63. EMBASE; assign*.ti,ab; 296714 results.</p> <p>64. EMBASE; allocat*.ti,ab; 108158 results.</p> <p>65. EMBASE; volunteer*.ti,ab; 211223 results.</p> <p>66. EMBASE; exp PROCEDURE, CROSSOVER/ OR exp PROCEDURE, SINGLE BLIND/; 75776 results.</p> <p>67. EMBASE; exp CONTROLLED TRIAL,RANDOMIZED/; 450491 results.</p> <p>68. EMBASE; 57 OR 58 OR 59 OR 60 OR 61 OR 62 OR 63 OR 64 OR 65 OR 66 OR 67; 1754020 results.</p> <p>69. EMBASE; 55 AND 68; 261 results.</p>
PsycINFO/CINAHL	<p>24. PsycInfo; exp LEARNING DISORDERS/; 31735 results.</p> <p>25. PsycInfo; ((learning OR development*) adj2 (difficult* OR disab* OR problem* OR handicap* OR impair* OR deficien*)).ti,ab; 41241 results.</p> <p>25. PsycInfo; ((learning OR development*) adj2 (difficult* OR disab* OR problem* OR handicap* OR impair* OR</p>

deficien*).ti,ab; 41241 results.

26. PsycInfo; exp DEVELOPMENTAL DISABILITIES/; 0 results.

26. PsycInfo; exp DEVELOPMENTAL DISABILITIES/; 0 results.

27. PsycInfo; 24 OR 25 OR 26; 69601 results.

27. PsycInfo; 24 OR 25 OR 26; 69601 results.

28. PsycInfo; ((substance OR alcohol OR drug) adj3 (misuse* OR problem* OR addict* OR abuse* OR dependen* OR disorder*).ti,ab; 95527 results.

29. PsycInfo; (alcohol*).ti,ab; 108046 results.

29. PsycInfo; (alcohol*).ti,ab; 108046 results.

30. PsycInfo; exp SUBSTANCE USE DISORDER/; 4523 results.

31. PsycInfo; exp ALCOHOL ABUSE/ OR exp ALCOHOLISM/ OR exp ALCOHOLS/; 57391 results.

32. PsycInfo; 28 OR 29 OR 30 OR 31; 164227 results.

33. PsycInfo; 27 AND 32; 0 results.

34. PsycInfo; 33 [Limit to: (Methodology Meta Analysis or Systematic Review)]; 5 results.

35. PsycInfo; random*.ti,ab; 153423 results.

36. PsycInfo; groups.ti,ab; 414340 results.

37. PsycInfo; ((double adj3 blind)).ti,ab; 19515 results.

38. PsycInfo; ((single adj3 blind)).ti,ab; 1738 results.

39. PsycInfo; controlled.ti,ab; 95626 results.

40. PsycInfo; ((clinical adj3 study)).ti,ab; 12796 results.

41. PsycInfo; trial.ti,ab; 81865 results.

42. PsycInfo; "treatment outcome clinical trial".ti,ab; 0 results.

43. PsycInfo; exp EXPERIMENTAL DESIGN/; 51984 results.

44. PsycInfo; 35 OR 36 OR 37 OR 38 OR 39 OR 40 OR 41 OR 42 OR 43; 669884 results.

45. PsycInfo; 33 AND 44; 343 results.

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