

CADTH Reference List

Substance and Nicotine Cessation Interventions for People With Problematic Substance Use

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Key Message

- Two systematic reviews (1 with meta-analysis), 3 randomized controlled trials, and 1 non-randomized study were identified regarding the clinical effectiveness of interventions for substance use cessation used in combination with interventions for nicotine cessation for people with problematic substance use.

Research Question

What is the clinical effectiveness of interventions for substance use cessation used in combination with interventions for nicotine cessation for people with problematic substance use?

Methods

Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, the Cochrane Database of Systematic Reviews, the international HTA database, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were smoking cessation and substance use disorder. Search filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses or network meta-analyses, randomized controlled trials, controlled clinical trials, or any other type of clinical trial. Where possible, retrieval was limited to the human population. Comments, newspaper articles, editorials, and letters were excluded. The search was also limited to English-language documents published between January 1, 2016 and March 24, 2021. Internet links were provided, where available.

Selection Criteria and Summary Methods

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in Table 1. Full texts of study publications were not reviewed. The Overall Summary of Findings section was based on information available in the abstracts of selected publications.

Results

Six relevant references were identified for this report.¹⁻⁶ Two systematic reviews^{1,2} (1 with meta-analysis),¹ 3 randomized controlled trials,³⁻⁵ and 1 non-randomized study⁶ were identified regarding the clinical effectiveness of interventions for substance use cessation used in

Table 1: Selection Criteria

Criteria	Description
Population	People (of any age) with problematic substance use (e.g., alcohol, opioids, other drugs)
Intervention	Interventions for substance use cessation (e.g., pharmacotherapies, cognitive behavioural therapy, motivational interviewing, methadone, suboxone, trauma-informed care) used in combination with interventions for nicotine cessation (e.g., nicotine replacement therapy, cytisine, varenicline, cognitive behavioural therapy)
Comparator	Interventions for substance use cessation used alone
Outcomes	Clinical effectiveness (e.g., substance use, nicotine use, quality of life, relapse, safety [e.g., adverse events, hospitalizations])
Study designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies

combination with interventions for nicotine cessation for people with problematic substance use. No health technology assessments were identified.

Additional references of potential interest that did not meet the inclusion criteria are provided in Appendix 1.

Overall Summary of Findings

The 2 systematic reviews^{1,2} (1 with meta-analysis)¹ had mixed results regarding the clinical effectiveness of interventions for substance use cessation used in combination with interventions for nicotine cessation for people with problematic substance use. The authors of the first systematic review and meta-analysis¹ concluded that interventions for cannabis cessation used in combination with interventions for nicotine cessation did not show a clear effect on cessation of either substances among co-users.¹ The authors of the second systematic review² concluded that among smokers in treatment and recovery for alcohol and other drug dependencies, a tobacco cessation intervention increased tobacco abstinence but no evidence was found regarding the effect on alcohol and other drug cessation.² The 3 identified randomized controlled trials³⁻⁵ and 1 non-randomized study⁶ had supportive results regarding the clinical effectiveness of interventions for substance use cessation used in combination with interventions for nicotine cessation for people with problematic substance use. The identified studies investigated the effects of nicotine cessation interventions used in combination with an opioid cessation intervention,³ an alcohol cessation intervention,⁴ a general substance use intervention,⁵ and either an alcohol or other substance-dependence treatment.⁶ All 4 studies³⁻⁶ concluded that a reduction in nicotine use was seen in the intervention groups receiving the combination of interventions, with 1 of the randomized controlled trials⁴ adding that a decrease in heavy drinking days was also seen among their male participants.

References

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

1. Walsh H, McNeill A, Purssell E, Duaso M. A systematic review and Bayesian meta-analysis of interventions which target or assess co-use of tobacco and cannabis in single- or multi-substance interventions. *Addiction*. 2020 10;115(10):1800-1814. [PubMed](#)
2. Apollonio D, Philipps R, Bero L. Interventions for tobacco use cessation in people in treatment for or recovery from substance use disorders. *Cochrane Database Syst Rev*. 2016 11 23;11:CD010274. Randomized Controlled Trials. [PubMed](#)
3. Cooperman NA, Lu SE, Richter KP, Bernstein SL, Williams JM. Pilot study of a tailored smoking cessation intervention for individuals in treatment for opioid dependence. *Nicotine Tob Res*. 2018 08 14;20(9):1152-1156. [PubMed](#)
4. O'Malley SS, Zweben A, Fucito LM, et al. effect of varenicline combined with medical management on alcohol use disorder with comorbid cigarette smoking: a randomized clinical trial. *JAMA Psychiatry*. 2018 02 01;75(2):129-138. [PubMed](#)
5. Ruther T, Ruderer A, Wirth C, et al. Smoking cessation program for inpatients with substance use disorder: a quasi-randomized controlled trial of feasibility and efficacy. *Eur Addict Res*. 2016;22(5):268-276. [PubMed](#)

Non-Randomized Studies

6. Kelly PJ, Baker AL, Townsend CJ, et al. healthy recovery: a pilot study of a smoking and other health behavior change intervention for people attending residential alcohol and other substance dependence treatment. *J Dual Diagn*. 2019 Jul-Sep;15(3):207-216. [PubMed](#)

Appendix 1: References of Potential Interest

Previous CADTH Reports

7. Clark M, Seal K, Visintini S, Jones S. Integrated cessation programs for adults who smoke cannabis and tobacco: clinical effectiveness and guidelines. (CADTH reference list). Ottawa: CADTH; 2017. <https://www.cadth.ca/sites/default/files/pdf/htis/2017/RA0934%20Interventions%20for%20Cannabis%20Use%20Disorder%20and%20Co-smokers%20Final.pdf> Accessed 2021 Apr 6.
8. [Smoking cessation aids for patients in treatment for substance abuse: clinical effectiveness, cost-effectiveness and guidelines](#) (CADTH reference list: summary of abstracts). Ottawa: CADTH; 2015. <https://www.cadth.ca/sites/default/files/pdf/htis/aug-2015/RB0902%20Smoking%20Cessation%20During%20Detox%20Final.pdf> Accessed 2021 Apr 6.

Systematic Review and Meta-Analyses

Alternative Comparator

9. Yee A, Hoong MC, Joyce YC, Loh HS. Smoking Cessation Among Methadone-Maintained Patients: A Meta-Analysis. *Subst Use Misuse*. 2018 01 28;53(2):276-285. [PubMed](#)

Randomized Controlled Trials

Alternative Comparator

10. Nahvi S, Adams TR, Ning Y, Zhang C, Arnsten JH. Effect of varenicline directly observed therapy versus varenicline self-administered therapy on varenicline adherence and smoking cessation in methadone-maintained smokers: a randomized controlled trial. *Addiction*. 2021 Apr;116(4):902-913. [PubMed](#)
11. Hindson J, Hanstock T, Dunlop A, Kay-Lambkin F. Internet-delivered tobacco treatment for people using cannabis: a randomized trial in two australian cannabis clinics. *JMIR Form Res*. 2020 Dec 07;4(12):e14344. [PubMed](#)
12. Zawertailo L, Ivanova A, Ng G, Le Foll B, Selby P. Safety and efficacy of varenicline for smoking cessation in alcohol-dependent smokers in concurrent treatment for alcohol use disorder: a pilot, randomized placebo-controlled trial. *J Clin Psychopharmacol*. 2020 Mar/Apr;40(2):130-136. [PubMed](#)
13. Anthenelli RM, Heffner JL, Wong E, et al. A randomized trial evaluating whether topiramate aids smoking cessation and prevents alcohol relapse in recovering alcohol-dependent men. *Alcohol Clin Exp Res*. 2017 01;41(1):197-206. [PubMed](#)
14. Cooney JL, Cooper S, Grant C, et al. A randomized trial of contingency management for smoking cessation during intensive outpatient alcohol treatment. *J Subst Abuse Treat*. 2017 01;72:89-96. [PubMed](#)
15. Correa-Fernandez V, Diaz-Toro EC, Reitzel LR, et al. Combined treatment for at-risk drinking and smoking cessation among Puerto Ricans: A randomized clinical trial. *Addict Behav*. 2017 Feb;65:185-192. [PubMed](#)

Unclear Comparator

16. Hovhannisyan K, Rasmussen M, Adami J, Wikström M, Tønnesen H. Evaluation of Very Integrated Program: health promotion for patients with alcohol and drug addiction-a randomized trial. *Alcohol Clin Exp Res*. 2020 Jul;44(7):1456-1467. [PubMed](#)

Non-Randomized Studies

Alternative Comparator

17. Cooperman NA, Rizvi SL, Hughes CD, Williams JM. field test of a dialectical behavior therapy skills training-based intervention for smoking cessation and opioid relapse prevention in methadone treatment. *J Dual Diagn*. 2019 Jan-Mar;15(1):67-73. [PubMed](#)
18. Lee DC, Walker DD, Hughes JR, et al. Sequential and simultaneous treatment approaches to cannabis use disorder and tobacco use. *J Subst Abuse Treat*. 2019 03;98:39-46. [PubMed](#)
19. Murphy CM, Martin RA, Tidey JW, Colby SM, Rohsenow DJ. Smoking outcome expectancies predict smoking during voucher-based treatment for smokers with substance use disorders. *J Subst Abuse Treat*. 2018 07;90:73-78. [PubMed](#)
20. Rohsenow DJ, Tidey JW, Martin RA, et al. Varenicline versus nicotine patch with brief advice for smokers with substance use disorders with or without depression: effects on smoking, substance use and depressive symptoms. *Addiction*. 2017 Oct;112(10):1808-1820. [PubMed](#)

No Comparator

21. Kelly PJ, Townsend CJ, Osborne BA, et al. Predicting intention to use nicotine replacement therapy in people attending residential treatment for substance dependence. *J Dual Diagn.* 2018 Apr-Jun;14(2):120-129. [PubMed](#)
22. Raich A, Pinet C, Ballbe M, et al. Multimodal treatment for smoking cessation with varenicline in alcoholic, methadone-maintained, and psychotic patients: A one-year follow-up. *Tob Induc Dis.* 2018;16:58. [PubMed](#)

Review Articles

23. Higgins ST, Kurti AN, Davis DR. Voucher-based contingency management is efficacious but underutilized in treating addictions. *Perspect Behav Sci.* 2019 Sep;42(3):501-524. [PubMed](#)
24. Plotnikoff RC, Costigan SA, Kennedy SG, Robards SL, Germov J, Wild C. Efficacy of interventions targeting alcohol, drug and smoking behaviors in university and college students: A review of randomized controlled trials. *J Am Coll Health.* 2019 01;67(1):68-84. [PubMed](#)
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