

**CADTH RAPID RESPONSE REPORT:
SUMMARY WITH CRITICAL APPRAISAL**

Withdrawal Management and Treatment of Crystal Methamphetamine Addiction in Pregnancy: A Review of Clinical Effectiveness and Guidelines

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Context and Policy Issues

Amphetamines and methamphetamines (including crystal methamphetamine) are a class of drugs that provide stimulant-like effects for the user, including euphoria and alertness.¹ Long term effects of use include tooth decay, skin picking and sores, weight loss, insomnia, and increased risk of conditions such as Parkinson's disease or stroke.¹ The prevalence of use of methamphetamine is about 0.2% in Canada, and appears to be increasing.²

Substance use in pregnancy, both licit and illicit, can have negative consequences for both the parent and baby. Amphetamine-type substances can cross the placental barrier to affect the fetus during gestation, and may also be present in breast milk post-birth.^{3,4} Infants who were exposed to methamphetamine prior to birth may have trouble feeding, insomnia, and muscle tone abnormalities, which may sometimes resolve without medical intervention.⁵ Discontinuation and abstinence are generally the main goals of treatment for pregnant persons addicted to methamphetamines, but immediate discontinuation can cause depression, fatigue, and psychosis.⁵

General recommendations for pregnant persons using illicit substances (which may include crystal meth) include comprehensive assessment and individualized care.³ Withdrawal management for pregnant persons with stimulant-type dependence can include psychopharmacological medications for psychiatric symptoms, but this is not always necessary.³ Pharmacological therapies are not routinely recommended for the management of amphetamine-related dependence in pregnant persons.³ Also recommended for care is assistance with prenatal care, cognitive behavioral therapy, parenting support, and a 12-step programs with regular drug testing.⁵ However, these recommendations are not specific for the use of crystal methamphetamine, which, despite being classified as a stimulant, is a drug with different properties than other available amphetamines.

The purpose of this report is to examine recent literature regarding interventions for the withdrawal management or treatment of persons who are pregnant and addicted to crystal methamphetamine.

Research Questions

1. What is the clinical effectiveness of interventions for the withdrawal management or treatment of persons who are pregnant and addicted to crystal methamphetamine?
2. What are the evidence-based guidelines regarding withdrawal management or treatment of persons who are pregnant and addicted to crystal methamphetamine?
3. What are the evidence-based guidelines regarding long term treatment for persons who are pregnant and addicted to crystal methamphetamine?

Key Findings

No relevant literature was identified regarding clinical effectiveness of interventions for the withdrawal management or treatment of persons who are pregnant and addicted to crystal methamphetamine. Additionally, no evidence based guidelines were identified regarding withdrawal management or long term treatment for persons who are pregnant and addicted to crystal methamphetamine.

Methods

Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE and PsycINFO via OVID, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine’s MeSH (Medical Subject Headings), and keywords. The main search concepts were methamphetamine and pregnancy. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2014 and May 22, 2019

Selection Criteria and Methods

One reviewer screened citations and selected studies. In the first level of screening, titles and abstracts were reviewed and potentially relevant articles were retrieved and assessed for inclusion. The final selection of full-text articles was based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Persons who are pregnant and addicted to crystal methamphetamine
Intervention	Any treatments, either pharmacological or non-pharmacological
Comparator	Any comparator; abstinence
Outcomes	Q1: Clinical effectiveness (e.g., mortality, abstinence symptoms, adverse events) Q2-3: Guidelines regarding withdrawal management or long term treatment
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines

Exclusion Criteria

Articles were excluded if they did not meet the selection criteria outlined in Table 1, they were duplicate publications, or were published prior to 2014. Guidelines with unclear methodology were also excluded.

Summary of Evidence

Quantity of Research Available

A total of 469 citations were identified in the literature search. Following screening of titles and abstracts, 467 citations were excluded and 2 potentially relevant reports from the electronic search were retrieved for full-text review. 2 potentially relevant publications were retrieved from the grey literature search for full-text review. Of these potentially relevant articles, all 4 publications were excluded for various reasons, and no publications met the inclusion criteria and were included in this report. Appendix 1 presents the PRISMA⁶ flowchart of the study selection. Additional references of potential interest are provided in Appendix 2.

Summary of Findings

No relevant literature was identified regarding clinical effectiveness of interventions for the withdrawal management or treatment of persons who are pregnant and addicted to crystal methamphetamine; therefore, no summary can be provided. Additionally, no evidence based guidelines were identified regarding withdrawal management or long term treatment for persons who are pregnant and addicted to crystal methamphetamine.

Limitations

No relevant literature was identified regarding clinical effectiveness of interventions for the withdrawal management or treatment of persons who are pregnant and addicted to crystal methamphetamine; therefore, no summary can be provided. Additionally, no evidence based guidelines were identified regarding withdrawal management or long term treatment for persons who are pregnant and addicted to crystal methamphetamine.

One limitation of the present report is the limited search dates (2014 to 2019). It is possible that relevant literature exists that was published more than five years ago and was excluded by the current date-limited search.

Conclusions and Implications for Decision or Policy Making

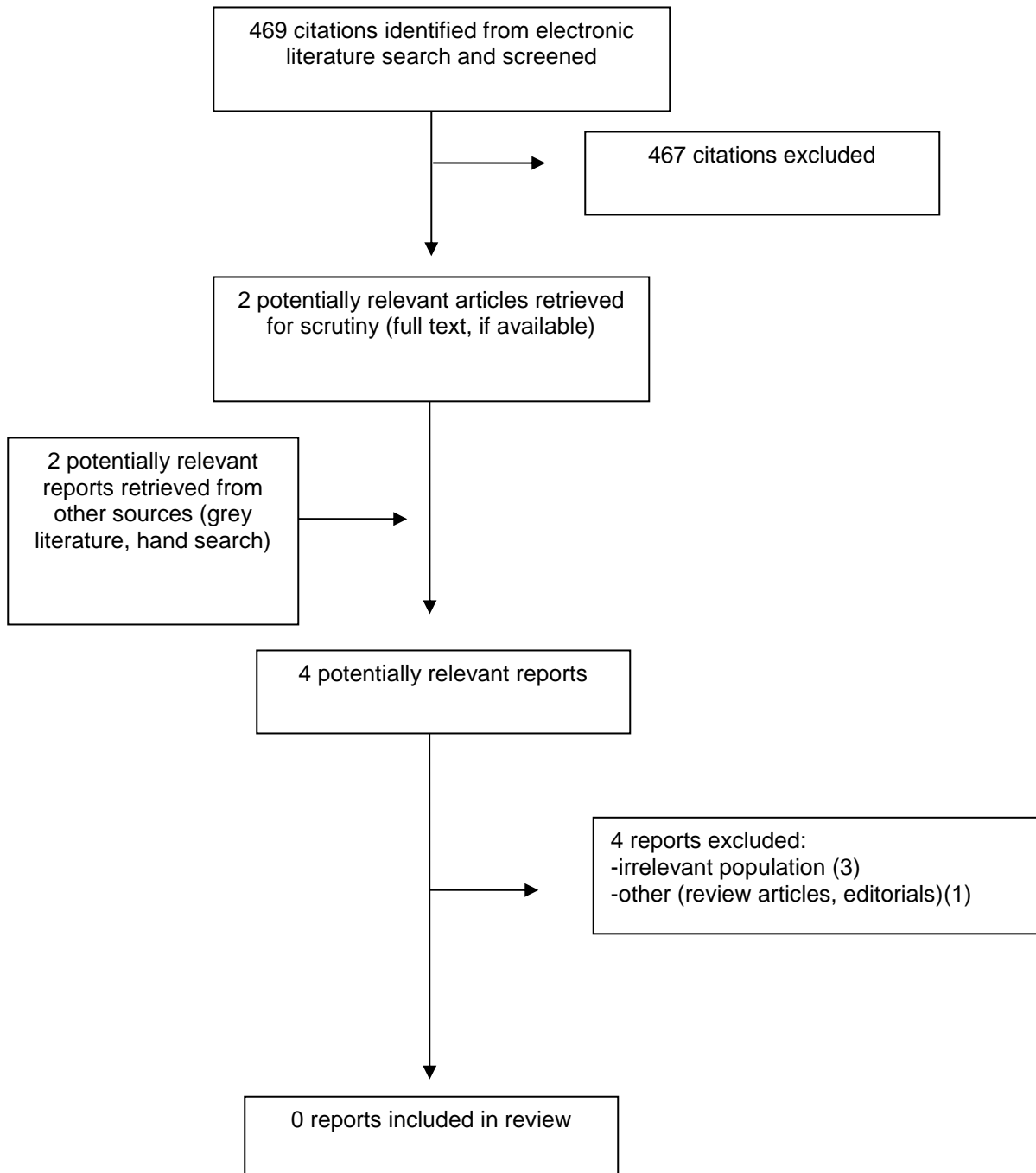
No relevant literature or evidence-based guidelines were identified regarding clinical effectiveness of interventions for the withdrawal management or long-term treatment of persons who are pregnant and addicted to crystal methamphetamine; therefore, no conclusions can be made.

There is a distinct lack of specific studies regarding crystal methamphetamine addiction in pregnant persons. The lack of published studies regarding this population group may reflect the stigma associated with substance use during pregnancy and other factors (e.g., homelessness, domestic violence, lack of research in most fields involving pregnant participants) that may make recruitment and retention of participants difficult. Additionally, the relatively low use of methamphetamines, compared with other substances, may also impede the conduct of research in this area. This gap in the literature precludes the creation of appropriate guidelines for health care providers who treat these patients. Future studies addressing this condition may help reduce uncertainty regarding management and treatment.

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5. McLafferty LP, Becker M, Dresner N, et al. Guidelines for the management of pregnant women with substance use disorders *Psychosomatics*. 2016;57(2):115-130.
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Appendix 1: Selection of Included Studies



Appendix 2: Additional References of Potential Interest

CADTH Reports

Treatment of neonatal abstinence syndrome due to crystal methamphetamine: a review of clinical effectiveness and guidelines. (*CADTH Rapid response report: summary with critical appraisal*). Ottawa (ON): CADTH; 2019: <https://cadth.ca/treatment-neonatal-abstinence-syndrome-due-crystal-methamphetamine-review-clinical-effectiveness-and>. Accessed 2019 Jun 14.

Management of acute withdrawal and detoxification for adults who misuse methamphetamine: a review of the clinical evidence and guidelines. (*CADTH Rapid response report: summary with critical appraisal*). Ottawa (ON): CADTH; 2019: <https://cadth.ca/management-acute-withdrawal-and-detoxification-adults-who-misuse-methamphetamine-review-clinical>. Accessed 2019 Jun 14.

Other Reports – Crystal methamphetamine not specified

Wouldes TA, Lester BM. Stimulants: how big is the problem and what are the effects of prenatal exposure? *Semin Fetal Neonatal Med.* 2019;24(2):155-160.

Farr SL, Hutchings YL, Ondersma SJ, Creanga AA. Brief interventions for illicit drug use among peripartum women. *Am J Obstet Gynecol.* 2014;211(4):336-43.