

**A Systematic Review of Psychological Treatment for Methamphetamine Use and  
Associated Mental Health Symptom Outcomes**

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Empirical thesis submitted in partial fulfillment of the requirements for the degree of  
Master of Clinical Psychology

University of Newcastle

December 2017

## **Declaration**

### **Statement of Originality**

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library\*, being made available for loan and photocopying subjects to the provisions of the Copyright Act 1968.

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### **Acknowledgement of Authorship and Collaboration**

I hereby certify that the work embodied in this thesis contains a published paper of which I am first author (48). I have included as part of this thesis a statement clearly outlining the extent of collaboration, with whom and under what auspices.

I hereby certify that the work embodied in this thesis has been done in collaboration with other researchers. Alexandra Stuart (AS) is the guarantor of the review. AS, Amanda Baker (AB), Alexandra Denham (AMJD), Kristen McCarter (KM), Jenny Bowman (JB) and Adrian Dunlop (AD) assisted in writing the protocol. AS performed the preliminary searches, and performed data extraction, conducted quality assessments and drafted the systematic review paper. AMJD screened references and cross-checked data extraction and performed independent quality ratings. AS developed the search strategy with the assistance of a research librarian. AB provided expertise on psychological treatment for MA use. Adrian Dunlop (AD) provided expertise on pharmacotherapy. JB provided expertise on the process of systematic reviews. All other authors contributed to the conception and design of this systematic review and assisted AS and AMJD to resolve any discrepancies in relation to data

extraction, study inclusion and quality ratings. Christopher Oldmeadow (CO) and Alix Hall (AH) assisted in conducting the meta-analysis. AS, AB, AD, AMJD, JB, and Nicole Lee (NL) read, provided feedback and approved the protocol manuscript and offered critical revisions for the review manuscript.

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### **Acknowledgements**

Thank you to my wonderful family, friends and partner Jamie for their endless support, patience, and love throughout a challenging time. A special thank you to Jamie for being my consistent motivator and biggest support.

Thank you to my supervisors Professor Amanda Baker, Professor Jenny Bowman, and Conjoint Professor Adrian Dunlop. A special thank you to my primary supervisor Amanda. I cannot thank you enough for your incredible support throughout the entirety of my Master's thesis. Your positive reinforcement and encouragement really pushed me to keep going, so thank you! You have been a pillar of strength for me throughout the course and alleviated my stress through your brilliant sense of humour.

Thank you Jenny for your guidance in the rigorous methodology for my thesis and your useful feedback. Thank you Adrian for your wealth of knowledge and expertise and helpful guidance and feedback.

A huge thank you to the other review team members – Professor Nicole Lee, Alexandra Denham and Dr Kristen McCarter. Your assistance and skills were extremely helpful. I could not have done this without you!

A special acknowledgement for Debbie Booth, who assisted me many times with my search strategy and had all the patience in the world! I could not have created such a fine tuned strategy without you. Also, a big thank you to the statisticians Dr Chris Oldmeadow and Dr Alix Hall who assisted me to conduct my meta-analysis. Thank you for answering all my statistical questions!

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### Structured Abstract

**Scope.** Methamphetamine (MA) use is an increasing public health concern. Globally and particularly in Australia there has been a recent shift in the form of MA used to the more potent crystalline form. Methamphetamine use is associated with specific symptoms of mental ill-health, including symptoms of anxiety, depression, hostility and psychosis. Systematic reviews conducted thus far have assessed pharmacological and psychological treatment for MA use, however none have focused specifically on MA use and associated mental health symptom outcomes. Thus, this review addressed a gap in the literature and may assist in tailoring clinical interventions for MA use and co-occurring mental health symptoms.

**Purpose.** The purpose of this research was to conduct a systematic review on the effectiveness of psychological treatment for MA use and associated mental health symptom outcomes. This review aimed to assess the quality of the literature in order to inform clinical intervention and alleviate the public health burden of MA use.

**Methodology.** A systematic review was conducted using the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines (Moher, Liberati, Tetzlaff, Altman, & Prisma Group, 2009). Types of studies included reported (1) MA use, (2) mental health symptom outcomes and/or disorders at baseline and post-treatment. Controlled trials were included and cohort studies, cross-sectional studies and one-arm trials were excluded. Participants included in the review were adults (over the age of 18) using MA alone or combined with other substance use. Psychological interventions included were Cognitive Behaviour Therapy (CBT), Contingency Management (CM), Motivational Interviewing (MI), and Acceptance and Commitment Therapy (ACT). Interventions were compared with active-controls and/or inactive controls and could be of any duration, frequency and intensity. The search strategy followed the Cochrane Handbook for Systematic

Reviews of Interventions (Higgins & Green, 2011), and searched MEDLINE, CINAHL, EMBASE, PsychINFO, Scopus and clinical trial registration databases. Titles and abstracts were screened against review inclusion and exclusion criteria and full texts were screened by two reviewers. Data was extracted by two reviewers and risk of bias assessment was conducted using the Cochrane Risk of Bias tool (Higgins et al. 2011). Quality assessment was completed using the GRADE tool (Higgins & Green, 2011). Where possible, meta-analyses were completed for primary outcomes and narrative syntheses were devised for secondary outcomes.

**Results.** Twelve studies met inclusion criteria. Meta-analyses found no significant differences in change in level of MA use or change in mental health symptom scores when comparing CBT to treatment as usual (TAU). However, when assessed separately by the intensity of the control group, there was a significant difference between CBT and minimal treatment on abstinence rates. Narrative syntheses suggested variable results across seven studies for changes in other drug use. There were high rates of treatment engagement for brief CBT interventions. A small number of studies reported changes in physical health, functioning, and Blood Borne Virus (BBV) risk reduction.

**General Conclusions and Implications.** The search identified a small number of interventions which assessed MA use and associated mental ill-health. Level of MA use and symptoms of mental ill-health tended to reduce among samples as a whole, regardless of intervention type. However, CBT may offer significant treatment benefits in terms of MA abstinence compared to minimal treatment conditions. Brief CBT interventions were associated with high rates of retention. Contingency Management appears promising and should be tested outside of the United States of America (USA) as findings may not be generalisable to other countries with different welfare options. There was an overall issue of heterogeneity and some risk of bias across studies, therefore an assumption was made about

the methodology of interventions as being consistent across studies. Future research with stronger methodological quality should be conducted with this client population to guide development of psychological interventions.

*Keywords:* Methamphetamine, Mental Health, Psychological Treatment,  
Psychological Interventions