

A Systematic Review of Polysubstance Abuse Interventions



Darcy Alemany
Natalie Chan
Zana Dukadzinac
Tammy Kung

Students at the University of Waterloo created this product while being trained in the systematic review methods of Knowledge Impact Strategies. Authors are listed in alphabetical order.

Knowledge  Impact
strategies

A Systematic Review of Polysubstance Abuse Interventions

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Take Home Message

- Research on polysubstance abuse more frequently focuses on the effects of use rather than interventions for the addiction itself
- No research was reported on interventions specifically promoting harm reduction as opposed to abstinence
- Interventions should be tailored to individuals' needs to allow for a more effective and comprehensive treatment
- Websites of other organizations that work with polysubstance users could be surveyed to determine if there are effective interventions currently being used that have not been studied and reported in scholarly journals

Overview

This project was completed during the Winter 2013 term by students in an upper-level Psychology course, *Community-Based Research*, at the University of Waterloo. The students were: Darcy Alemany (Social Development Studies), Natalie Chan (Knowledge Integration), Zana Dukadzinac (Health Studies), and Tammy Kung (Psychology). They were assisted by the course instructor Dr. Kathleen Bloom and teaching assistant Jess Voll. The community partner organization for this project was Wesley Urban Ministries (WUM). Its partnership with the University was coordinated by Jack Maga, member of the Board of Directors at WUM. Jack Maga identified topics of interest and worked with the instructor to clarify and determine the feasibility of the review prior to the start of the course. Throughout the course, she answered questions online and also offered comments and insights during a classroom presentation of the final results.

WUM is a community service organization located in downtown Hamilton that offers an integrated housing and alcohol management program to homeless men in the region. By providing this program through the Claremont House Special Care Unit (CHSCU), WUM aims to break the cycle of incarceration, emergency room visitation, and hospitalizations surrounding these men.

CHSCU aims to provide accessible and coordinated care to homeless individuals, trusting that it will decrease their use of other facilities in the long term. Their objective is to provide cohesive care to these individuals by focusing on interventions that make use of harm reduction. Harm reduction involves decreasing the negative effects and risks of substance use on users' quality of life rather than eliminating substance use completely through abstinence. This is

accomplished at the CHSCU by integrating multiple different interventions and presenting them as a continuum of care ranging from short term assessments and advice to long term stays and palliative care.

As WUM has observed, homeless individuals who abuse substances tend to use a disproportionate amount of the limited health and social services available to the general population. These services include hospitals, emergency rooms, jails, and detoxification centres. High service utilizers place a strain on the ability of the healthcare system to support the needs of the general population. Therefore, the need to integrate health, law enforcement, and social services to better serve the polysubstance-using homeless population was declared by Hamilton's Steering Committee in 2003. This resulted in the creation of the Claremont House Special Care Unit managed alcohol program.

What Was Studied?

A systematic research review was conducted to inform WUM's evidence-based treatment program for alcohol management. WUM recognized that many of their homeless alcoholic patients fell into the category of polysubstance users: those that consumed other substances in addition to alcohol. As a result, WUM required information that provided evidence of adaptable and effective interventions to serve the needs of polysubstance users.

Therefore, the precise questions that were agreed upon by the community partners and researchers were: "What is the scope of the recent research on treatment programs for polysubstance users? What are the characteristics and needs of polysubstance users?" This information will be used to increase WUM's understanding of polysubstance use and subsequently their ability to tailor their program to better suit the needs of polysubstance users. Additionally, the review can be used to support funding proposals and as a means of detecting existing gaps in the research.

Three clarifications must be stated about the content of this review:

1. Only articles that included the presence of alcohol as a component of polysubstance abuse were included.
2. All interventions were included in the review regardless of whether their goals were harm reduction or abstinence.
3. All articles concerning methadone were examined; a distinction was made between whether that use was therapeutic or abusive.

How Was It Studied?

A literature search was performed using the Scopus database for articles published from 2010 to present (January 21, 2013) containing the keywords “polysubstance” and “alcohol.” Seventy-two articles were found, and 20 of those were excluded on the basis of several criteria.

Criteria for exclusion:

- Not published in English
- Based on non-human participants
- Focused solely on biological outcomes
- Did not mention alcohol abuse
- Focused solely on alcohol
- Focused solely on participants who were pregnant women or infants prenatally exposed to alcohol

Each article was re-assessed by a second reviewer to confirm the decision to include or exclude it from the review. A spreadsheet of article characteristics was then created by extracting information from the remaining 52 articles. This spreadsheet included information on:

- What was studied
- Who was studied
- Substance use categories
- Study designs
- Interventions
- Study settings
- What was measured
- What was found

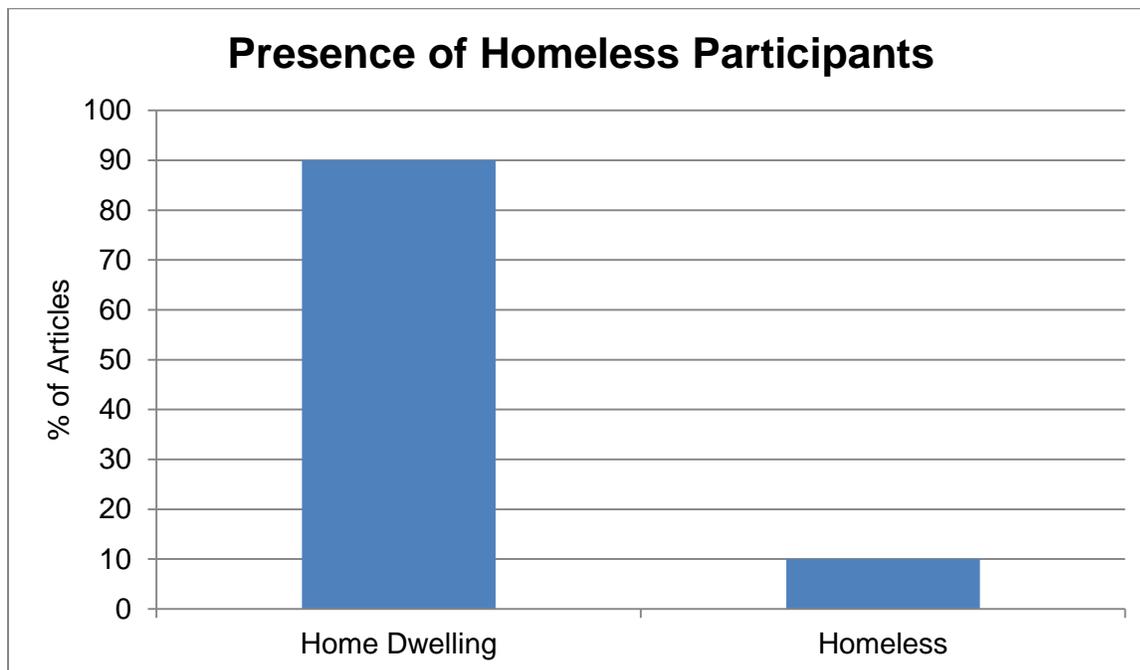
During this process one additional article was found to meet exclusion criteria, leaving a total of 51 articles to be included in the review. Coding categories and decisions were discussed on an ongoing basis throughout the process, and any discrepancies were resolved through discussion and consensus.

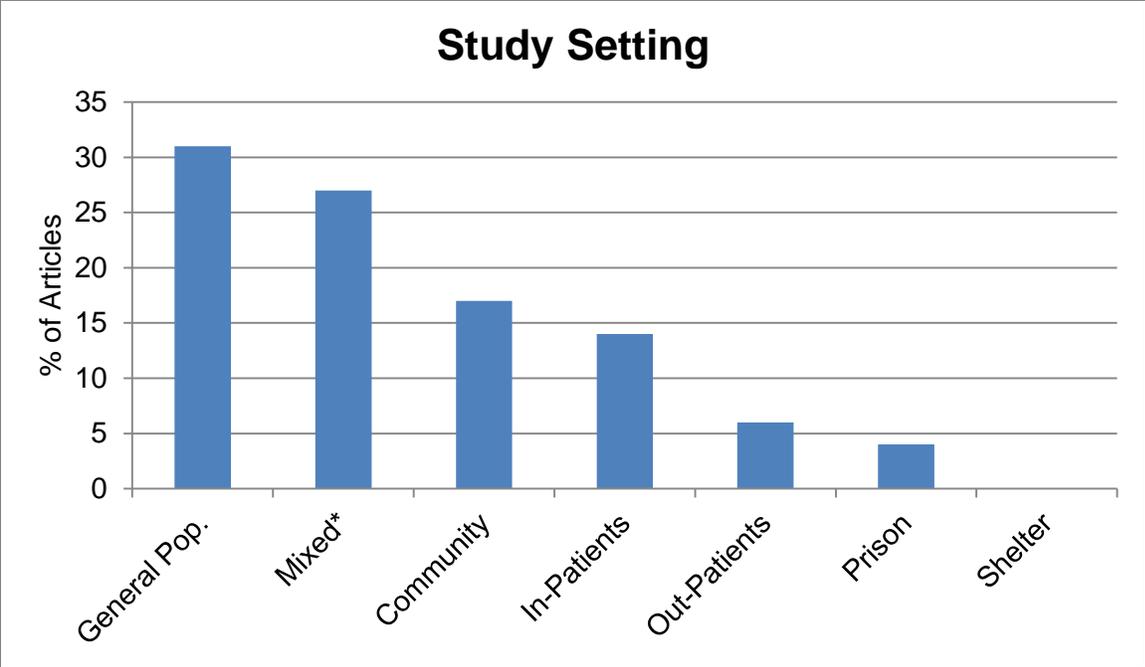
Highlights of Results

- Polysubstance use is a young field of research
- Most articles addressed characteristics of polysubstance users and the effects of their use: only 4 articles reported the efficacy of specific interventions
- Compared to non-drug and single-drug users, polysubstance users:
 - Showed higher rates of impaired cognitive and executive functioning
 - Were more likely to experience distressing psychological symptoms
 - Were more likely to reoffend after committing criminal offences

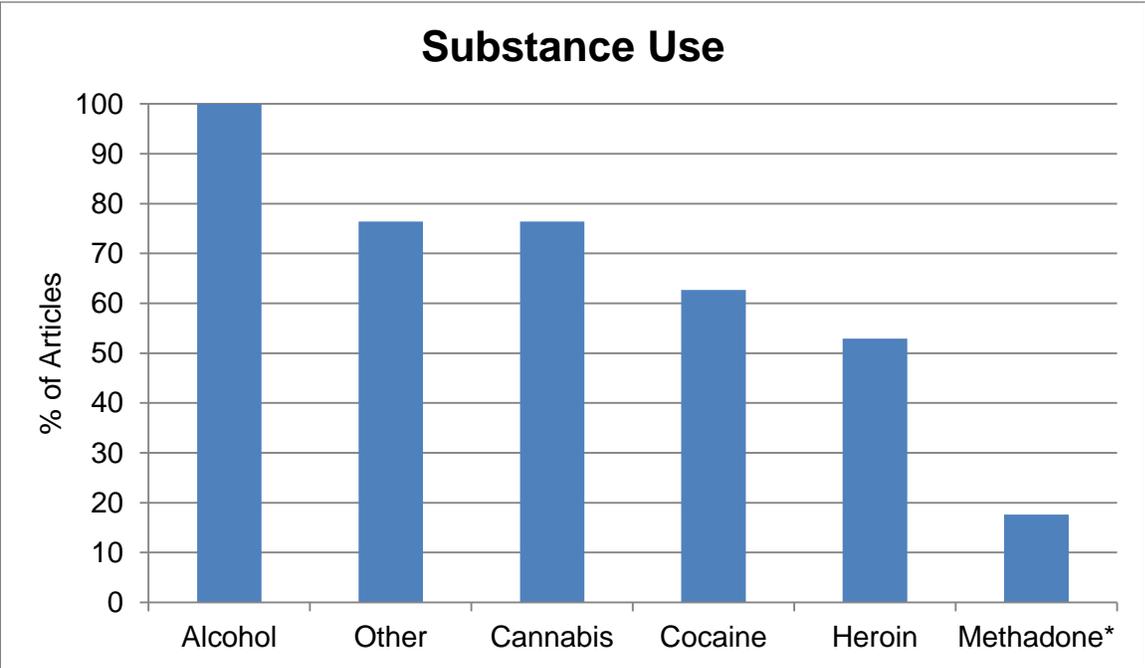
- Severity of substance use did not predict the likelihood of unemployment
 - However, typical barriers to employment such as poor mental and/or physical health frequently co-occurred with substance use
- Interventions frequently focused on addressing specific aspects of polysubstance use such as side effects or negative behavioural outcomes (harm reduction) rather than eliminating the polysubstance use itself (abstinence)
- Interventions studied include:
 - Goal Management Training: teaching individuals to set and work towards achieving specific goals
 - Mindfulness: teaching individuals to be aware of emotions, both in themselves and in others
 - Twelve Step Program: a set of guiding principles outlining a course of action for addiction recovery
 - Contingency Management: a behavioural intervention that involves tangible reinforcements to reward positive behaviours
 - Negative Mood Induction: creating a negative mood using different methods such as exposing participants to negative imagery and emphasizing how their addiction behaviours hinder their goals for a better life

Landscapes of Research Articles



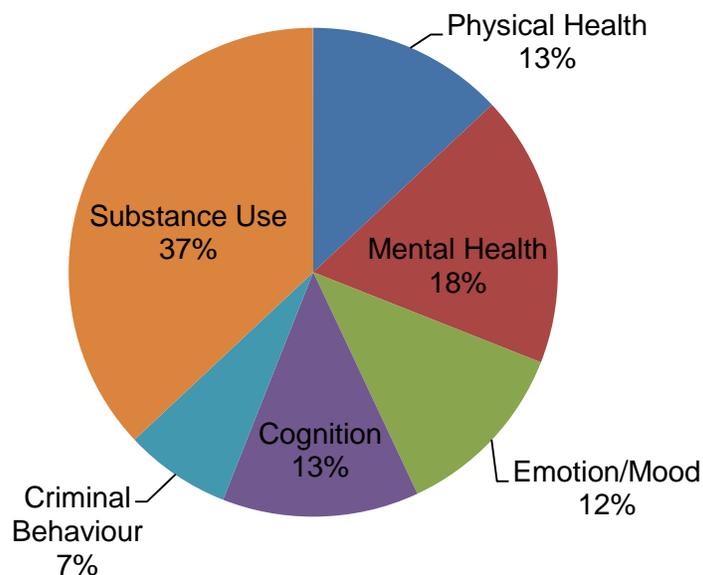


* Studies in which more than one setting was included



* Represents abuse and not use as a sanctioned treatment for opiate withdrawal

What was Measured?



Survey of Research Articles

Two main questions were asked of each of the 51 articles:

- What was studied?
- What was found?

Information on the following factors was extracted from each of the articles:

- Country of study population
- Who was studied
 - Men
 - Women
 - Youth (under 18)
 - Homeless
- Substances used
 - Alcohol
 - Methadone (when abused)
 - Heroin
 - Cocaine
 - Cannabis
 - Other (e.g. MDMA, crystal meth, etc.)
- Study design
 - Descriptive
 - Observational
 - Longitudinal

- Comparison of interventions
 - Review
- Intervention studied
- Study setting (from where the study participants were recruited)
 - In-patients
 - Out-patients
 - Shelter
 - Prison
 - General population
 - Community service organization
- What was measured
 - Physical health
 - Mental health
 - Cognition
 - Emotion/mood
 - Criminal behaviour
 - Substance Use

Citation	Country	What Was Studied?	Who Was Studied?				Substance Use						Study Design				
			Men	Women	Youth (under 18)	Homeless	Alcohol	Methadone	Cocaine	Heroin	Cannabis	Other	Descriptive	Observational	Longitudinal	Comparison	Review
Alfonso, J. P., Caracuel, A., Delgado-Pastor, L. C., & Verdejo-García, A. (2011). Combined goal management training and mindfulness meditation improve executive functions and decision-making performance in abstinent polysubstance abusers. <i>Drug and Alcohol Dependence</i> , 117(1), 78-81.	Spain	• Efficacy of a 7 week program including Goal Management Training (GMT) and mindfulness as opposed to standard intervention alone for reducing executive and decision-making deficits in alcohol and polysubstance abusers	X	X			X		X		X					X	
Back, S. E., Payne, R. L., Simpson, A. N., & Brady, K. T. (2010). Gender and prescription opioids: Findings from the national survey on drug use and health. <i>Addictive Behaviors</i> , 35(11), 1001-1007.	USA	• Correlations, sources, and predictors of prescription opioid non-medical use as well as abuse or dependence	X	X	X		X		X	X	X	X	X				
Balodis, I. M., Potenza, M. N., & Olmstead, M. C. (2010). Recreational drug use and impulsivity in a population of Canadian undergraduate drinkers. <i>Frontiers in Psychiatry</i> , 1(OCT)	Canada	• Relationship between alcohol use, other substance use, and impulsivity in young adults	X	X			X		X	X	X	X	X				
Beaulieu, S., Saury, S., Sareen, J., Tremblay, J., Schütz, C. G., McIntyre, R. S., & Schaffer, A. (2012). The Canadian network for mood and anxiety treatments (CANMAT) task force recommendations for the management of patients with mood disorders and comorbid substance use disorders. <i>Annals of Clinical Psychiatry</i> , 24(1), 38-55.	NR	• Intervention of patients with comorbid mood disorders and substance use disorders					X		X	X	X	X					X

Citation	Intervention(s) Studied	Study Setting						What Was Measured?					What Was Found?	
		In-Patients	Out-Patients	Shelter	Prison	Gen. Pop.	Community	Physical Health	Mental Health	Cognition	Emotion/ Mood	Criminal Behaviour		Substance Use
Alfonso, J. P., Caracuel, A., Delgado-Pastor, L. C., & Verdejo-García, A. (2011). Combined goal management training and mindfulness meditation improve executive functions and decision-making performance in abstinent polysubstance abusers. <i>Drug and Alcohol Dependence</i> , 117(1), 78-81.	Goal Management Training, Mindfulness						X			X				<ul style="list-style-type: none"> • GMT and mindfulness training improved working memory, response inhibition, and decision making • GMT and mindfulness intervention may be effective in reducing executive and decision making deficits in polysubstance abusers
Back, S. E., Payne, R. L., Simpson, A. N., & Brady, K. T. (2010). Gender and prescription opioids: Findings from the national survey on drug use and health. <i>Addictive Behaviors</i> , 35(11), 1001-1007.	None					X					X	X	X	<ul style="list-style-type: none"> • More men than women endorsed lifetime and past-year use of prescription opioids • Men more likely than women to obtain prescription opioids for free from family or friends and more likely to purchase from a dealer • Gender specific predictors of use (as opposed to abuse/dependence) were observed
Balodis, I. M., Potenza, M. N., & Olmstead, M. C. (2010). Recreational drug use and impulsivity in a population of Canadian undergraduate drinkers. <i>Frontiers in Psychiatry</i> , 1(OCT)	None					X			X				X	<ul style="list-style-type: none"> • Higher impulsivity was positively related to the reported level of drug use and was associated with regular drug use • Recreational drug users more likely to report binge drinking • Polysubstance users reported more frequent drinking occasions
Beaulieu, S., Saury, S., Sareen, J., Tremblay, J., Schütz, C. G., McIntyre, R. S., & Schaffer, A. (2012). The Canadian network for mood and anxiety treatments (CANMAT) task force recommendations for the management of patients with mood disorders and comorbid substance use disorders. <i>Annals of Clinical Psychiatry</i> , 24(1), 38-55.	None		X						X				X	<ul style="list-style-type: none"> • Superiority of CBT over alternative interventions could not be demonstrated on substance use disorder outcomes • Motivational therapy appeared to show small short-term benefits, but had no effect over long-term periods or on global substance use disorder outcomes • Contingency management combined with group motivational therapy increased the length of abstinence and proportion of negative drug screens when compared with group supportive therapy • Contingency management significantly increased the percentage of drug-free urine samples, especially for patients with depression

Citation	Country	What Was Studied?	Who Was Studied?				Substance Use						Study Design				
			Men	Women	Youth (under 18)	Homeless	Alcohol	Methodone	Cocaine	Heroin	Cannabis	Other	Descriptive	Observational	Longitudinal	Comparison	Review
Brache, K., Stockwell, T., & MacDonald, S. (2012). Functions and harms associated with simultaneous polysubstance use involving alcohol and cocaine. <i>Journal of Substance use</i> , 17(5-6), 399-416.	Canada	<ul style="list-style-type: none"> • Functions and motivational factors underlying simultaneous use of alcohol and cocaine • Associated consequences with simultaneous alcohol and cocaine use 	X	X			X		X					X			
Brier, F. N., Fallu, J. -, Descheneaux, A., & Janosz, M. (2011). Predictors and consequences of simultaneous alcohol and cannabis use in adolescents. <i>Addictive Behaviors</i> , 36(7), 785-788.	Canada	<ul style="list-style-type: none"> • Predictors and consequences of simultaneous alcohol and cannabis use 			X		X				X						
Byrne, S. A., & Petry, N. M. (2011). Concurrent alcohol dependence among methadone-maintained cocaine abusers is associated with greater abstinence. <i>Experimental and Clinical Psychopharmacology</i> , 19(2), 116-122.	USA	<ul style="list-style-type: none"> • Relationship between concurrent alcohol dependence and abstinence in methadone-maintained cocaine abusers 	X	X			X		X	X	X					X	
Carmona-Perera, M., Verdejo-García, A., Young, L., Molina-Fernández, A., & Pérez-García, M. (2012). Moral decision-making in polysubstance dependent individuals. <i>Drug and Alcohol Dependence</i> , 126(3), 389-392.	Spain	<ul style="list-style-type: none"> • Moral decision making patterns in polysubstance users 	X				X		X	X	X	X				X	
Ciesla, J. R. (2010). Evaluating the risk of relapse for adolescents treated for substance abuse. <i>Addictive Disorders and their Treatment</i> , 9(2), 87-92.	USA	<ul style="list-style-type: none"> • Probability of relapse after intervention for substance abuse 			X		X					NR	X				

Citation	Intervention(s) Studied	Study Setting						What Was Measured?						What Was Found?
		In-Patients	Out-Patients	Shelter	Prison	Gen. Pop.	Community	Physical Health	Mental Health	Cognition	Emotion/ Mood	Criminal Behaviour	Substance Use	
Brache, K., Stockwell, T., & MacDonald, S. (2012). Functions and harms associated with simultaneous polysubstance use involving alcohol and cocaine. <i>Journal of Substance use</i> , 17(5-6), 399-416.	None						X	X	X	X	X	X	X	<ul style="list-style-type: none"> Cocaine and alcohol were used simultaneously to control cravings, alter state of consciousness, manage emotions, enhance sexual, physical, and social functioning, and minimize financial costs
Brier, F. N., Fallu, J. -, Descheneaux, A., & Janosz, M. (2011). Predictors and consequences of simultaneous alcohol and cannabis use in adolescents. <i>Addictive Behaviors</i> , 36(7), 785-788.	None					X					X	X	X	<ul style="list-style-type: none"> Simultaneous alcohol and cannabis use was predicted by multiple psychosocial risk factors including individual and peer substance use in early high school Simultaneous alcohol and cannabis use was associated with increased risk of subsequent substance-related problems
Byrne, S. A., & Petry, N. M. (2011). Concurrent alcohol dependence among methadone-maintained cocaine abusers is associated with greater abstinence. <i>Experimental and Clinical Psychopharmacology</i> , 19(2), 116-122.	Methadone Maintenance, Contingency Management						X	X	X				X	<ul style="list-style-type: none"> Patients with concurrent alcohol dependence achieved similar outcomes regardless of intervention conditions Patients randomized to contingency management achieved better outcomes than those in standard care Cocaine-abusing methadone patients with concurrent alcohol dependency achieved longer durations of cocaine abstinence and better maintained their abstinence throughout a long term follow-up than their non-alcohol dependent counterparts
Carmona-Perera, M., Verdejo-García, A., Young, L., Molina-Fernández, A., & Pérez-García, M. (2012). Moral decision-making in polysubstance dependent individuals. <i>Drug and Alcohol Dependence</i> , 126(3), 389-392.	None					X	X			X				<ul style="list-style-type: none"> Polysubstance dependent individuals delivered more utilitarian moral judgments in response to personal moral scenarios that are high in emotional content Decisions perceived as less difficult for polysubstance dependent individuals
Ciesla, J. R. (2010). Evaluating the risk of relapse for adolescents treated for substance abuse. <i>Addictive Disorders and their Treatment</i> , 9(2), 87-92.	None	X												<ul style="list-style-type: none"> Associating with friends that use drugs/alcohol related to increased likelihood of relapse Participation in intervention multiple times associated with decreased likelihood of relapse Patients who were addicted to multiple substances at once (polysubstance addiction) were more likely to relapse Males were more likely to relapse than females

Citation	Country	What Was Studied?	Who Was Studied?				Substance Use						Study Design					
			Men	Women	Youth (under 18)	Homeless	Alcohol	Methodone	Cocaine	Heroin	Cannabis	Other	Descriptive	Observational	Longitudinal	Comparison	Review	
Connell, C. M., Gilreath, T. D., Aklin, W. M., & Brex, R. A. (2010). Social-ecological influences on patterns of substance use among non-metropolitan high school students. <i>American Journal of Community Psychology, 45</i> (1), 36-48.	USA	• Social-ecological influences on patterns of substance use in non-metropolitan high school students			X		X		X	X	X	X	X					
De Wilde, B., Verdejo-García, A., Sabbe, B., Hulstijn, W., & Dom, G. (2012). Affective decision-making is predictive of three-month relapse in polysubstance-dependent alcoholics. <i>European Addiction Research, 19</i> (1), 21-28.	Belgium	• Ability of the Delay Discounting Task (DDT) and Iowa Gambling Task (IGT) to identify 3 month abstinence in polysubstance abusing alcoholics	X	X			X		X		X	X					X	
Edokpolo, O., James, P., Kearns, C., Campbell, A., & Smyth, B. P. (2010). Gender differences in psychiatric symptomatology in adolescents attending a community drug and alcohol treatment program. <i>Journal of Psychoactive Drugs, 42</i> (1), 31-36.	Ireland	• Gender differences pertaining to mental health in substance dependent youth			X		X		X	X	X		X					
Engstrom, M., Shibusawa, T., El-Bassel, N., & Gilbert, L. (2011). Age and HIV sexual risk among women in methadone treatment. <i>AIDS and Behavior, 15</i> (1), 103-113.	USA	• Relationship between age and HIV sexual risk behaviours		X			X	X	X	X	X	X		X				
Fernández-Calderón, F., Lozano, O., Vidal, C., Ortega, J., Vergara, E., González-Sáiz, F., & Bilbao, I. (2011). Polysubstance use patterns in underground rave attenders: A cluster analysis. <i>Journal of Drug Education, 41</i> (2), 183-202.	Spain	• Polysubstance use patterns occurring in underground raves • Sociodemographic profile of individuals attending raves	X	X			X		X	X	X	X	X					

Citation	Intervention(s) Studied	Study Setting					What Was Measured?						What Was Found?
		In-Patients	Out-Patients	Shelter	Prison	Gen. Pop.	Community	Physical Health	Mental Health	Cognition	Emotion/ Mood	Criminal Behaviour	
Connell, C. M., Gilreath, T. D., Aklın, W. M., & Brex, R. A. (2010). Social-ecological influences on patterns of substance use among non-metropolitan high school students. <i>American Journal of Community Psychology</i> , 45(1), 36-48.	None					X		X		X	X	X	<ul style="list-style-type: none"> • Four classes of substance use were identified: non-users, alcohol experimenters, occasional polysubstance users, and frequent polysubstance users • Males were significantly over represented among non-users • Females were at particular risk of engaging in alcohol experimentation
De Wilde, B., Verdejo-García, A., Sabbe, B., Hulstijn, W., & Dom, G. (2012). Affective decision-making is predictive of three-month relapse in polysubstance-dependent alcoholics. <i>European Addiction Research</i> , 19(1), 21-28.	None		X						X			X	<ul style="list-style-type: none"> • Strong decision making abilities were associated with 3 month abstinence in polysubstance abusing alcoholics • Neurocognitive scores effectively identified patients who were at a high risk of relapse • IGT was ecologically more valid in assessing and identifying abstinence compared to the DDT
Edokpolo, O., James, P., Kearns, C., Campbell, A., & Smyth, B. P. (2010). Gender differences in psychiatric symptomatology in adolescents attending a community drug and alcohol treatment program. <i>Journal of Psychoactive Drugs</i> , 42(1), 31-36.	None					X		X				X	<ul style="list-style-type: none"> • Substance use dependent youth had higher rates of psychological problems • Female youth had more psychological problems than male youth • One size fits all intervention approaches should be avoided • Need to match interventions with psychological profiles of patients
Engstrom, M., Shibusawa, T., El-Bassel, N., & Gilbert, L. (2011). Age and HIV sexual risk among women in methadone treatment. <i>AIDS and Behavior</i> , 15(1), 103-113.	None		X				X					X	<ul style="list-style-type: none"> • Women of all ages were at increased risk of HIV • Women exposed to violence were more likely to use drugs • Need for age specific HIV prevention interventions
Fernández-Calderón, F., Lozano, O., Vidal, C., Ortega, J., Vergara, E., González-Sáiz, F., & Bilbao, I. (2011). Polysubstance use patterns in underground rave attendees: A cluster analysis. <i>Journal of Drug Education</i> , 41(2), 183-202.	None					X						X	<ul style="list-style-type: none"> • Alcohol, tobacco, cannabis, and amphetamine were most common substances used at raves • Drug use at underground raves was higher than use at mainstream raves • Sociodemographic profile of rave attendees identifies them as standard individuals who function well in society

Citation	Country	What Was Studied?	Who Was Studied?				Substance Use						Study Design				
			Men	Women	Youth (under 18)	Homeless	Alcohol	Methadone	Cocaine	Heroin	Cannabis	Other	Descriptive	Observational	Longitudinal	Comparison	Review
Fernández-Serrano, M. J., Lozano, T., Pérez-García, M., & Verdejo-García, A. (2010). Impact of severity of drug use on discrete emotions recognition in polysubstance abusers. <i>Drug and Alcohol Dependence</i> , 109(1-3), 57-64.	Spain	<ul style="list-style-type: none"> • Facial emotion recognition abilities of polysubstance users • Association between quantity and duration of drug use and the ability to recognise discrete facial expression 	X	X			X		X	X	X	X				X	
Fernández-Serrano, M. J., Moreno-López, L., Pérez-García, M., Viedma-Del Jesús, M. I., Sánchez-Barrera, M. B., & Verdejo-García, A. (2011). Negative mood induction normalizes decision making in male cocaine dependent individuals. <i>Psychopharmacology</i> , 217(3), 331-339.	Spain	<ul style="list-style-type: none"> • Induction of different emotional states on decision-making performance in cocaine polysubstance users 	X				X		X		X	X				X	
Fernández-Serrano, M. J., Pérez-García, M., Perales, J. C., & Verdejo-García, A. (2010). Prevalence of executive dysfunction in cocaine, heroin and alcohol users enrolled in therapeutic communities. <i>European Journal of Pharmacology</i> , 626(1), 104-112.	Spain	<ul style="list-style-type: none"> • Prevalence of neuropsychological impairments in different components of executive functioning in polysubstance users • Assessments for alterations in executive functioning 	X	X			X		X	X						X	
Fernández-Serrano, M. J., Pérez-García, M., Schmidt Río-Valle, J., & Verdejo-García, A. (2010). Neuropsychological consequences of alcohol and drug abuse on different components of executive functions. <i>Journal of Psychopharmacology</i> , 24(9), 1317-1332.	Spain	<ul style="list-style-type: none"> • Contributions of alcohol, cocaine, heroin, and cannabis use on executive functioning performance 	X	X			X		X	X	X	X				X	

Citation	Intervention(s) Studied	Study Setting						What Was Measured?					What Was Found?	
		In-Patients	Out-Patients	Shelter	Prison	Gen. Pop.	Community	Physical Health	Mental Health	Cognition	Emotion/ Mood	Criminal Behaviour		Substance Use
Fernández-Serrano, M. J., Lozano, T., Pérez-García, M., & Verdejo-García, A. (2010). Impact of severity of drug use on discrete emotions recognition in polysubstance abusers. <i>Drug and Alcohol Dependence</i> , 109(1-3), 57-64.	None						X			X			X	<ul style="list-style-type: none"> Polysubstance users showed significantly poorer recognition of negative emotions: anger, fear, disgust, sadness Quantity and duration of cocaine use predicted poor recognition of anger and fear
Fernández-Serrano, M. J., Moreno-López, L., Pérez-García, M., Viedma-Del Jesús, M. I., Sánchez-Barrera, M. B., & Verdejo-García, A. (2011). Negative mood induction normalizes decision making in male cocaine dependent individuals. <i>Psychopharmacology</i> , 217(3), 331-339.	Negative Mood Induction						X			X	X		X	<ul style="list-style-type: none"> Negative mood induction improved decision-making performance in male cocaine polysubstance users
Fernández-Serrano, M. J., Pérez-García, M., Perales, J. C., & Verdejo-García, A. (2010). Prevalence of executive dysfunction in cocaine, heroin and alcohol users enrolled in therapeutic communities. <i>European Journal of Pharmacology</i> , 626(1), 104-112.	None						X			X			X	<ul style="list-style-type: none"> High prevalence of executive function impairment observed in polysubstance users Working memory most affected; fluency, planning, multi-tasking, and shifting also impaired Mild, less specific, criteria identified 70% of impairments present in polysubstance users Moderate-severe, very specific, criteria identified only 30% of the same impairments
Fernández-Serrano, M. J., Pérez-García, M., Schmidt Río-Valle, J., & Verdejo-García, A. (2010). Neuropsychological consequences of alcohol and drug abuse on different components of executive functions. <i>Journal of Psychopharmacology</i> , 24(9), 1317-1332.	None						X			X			X	<ul style="list-style-type: none"> Substance dependent individuals had extensive range of executive functioning impairments Quantity of cocaine use had the highest predictive value on working memory and reasoning Total alcohol consumption and quantity of cocaine use had highest predictive values on decision making Quantity of heroine was most predictive of interference and shifting Impairments were present even after 8 months of abstinence and should be viewed as long term effects

Citation	Country	What Was Studied?	Who Was Studied?				Substance Use						Study Design					
			Men	Women	Youth (under 18)	Homeless	Alcohol	Methodone	Cocaine	Heroin	Cannabis	Other	Descriptive	Observational	Longitudinal	Comparison	Review	
Fernández-Serrano, M. J., Pérez-García, M., & Verdejo-García, A. (2011). What are the specific vs. generalized effects of drugs of abuse on neuropsychological performance? <i>Neuroscience and Biobehavioural Reviews</i> , 35(3), 377-406.	NR	<ul style="list-style-type: none"> Effects of different drugs on neuropsychological performance: generalized versus specific impairments Long term drug effects experienced after abstinence 	X	X			X	X	X	X	X	X						X
Håkansson, A., & Berglund, M. (2012). Risk factors for criminal recidivism - a prospective follow-up study in prisoners with substance abuse. <i>BMC Psychiatry</i> , 12	Sweden	<ul style="list-style-type: none"> Substance use as a possible predictor or indicator of criminal recidivism 	X	X		X	X	X	X	X	X	X						
Hakansson, A., Schlyter, F., & Berglund, M. (2011). Associations between polysubstance use and psychiatric problems in a criminal justice population in Sweden. <i>Drug and Alcohol Dependence</i> , 118(1), 5-11.	Sweden	<ul style="list-style-type: none"> Relationship between number of substances used and rate of psychiatric symptoms within a month before criminal incarceration 	X	X			X	X		X	X	X	X					
Hewitt, L. N., Bhavsar, P., & Phelan, H. A. (2011). The secrets women keep: Intimate partner violence screening in the female trauma patient. <i>Journal of Trauma - Injury, Infection and Critical Care</i> , 70(2), 320-323.	USA	<ul style="list-style-type: none"> Effectiveness in detecting intimate partner violence (IPV) when screening for alcohol abuse versus screening for IPV directly 		X			X					NR		X				
Hyucksun Shin, S. (2012). A longitudinal examination of the relationships between childhood maltreatment and patterns of adolescent substance use among high-risk adolescents. <i>American Journal on Addictions</i> , 21(5), 453-461.	USA	<ul style="list-style-type: none"> Influence of childhood maltreatment on substance abuse patterns in adolescents 			X		X		X		X	X			X			
Jhanjee, S., & Sethi, H. (2010). The fagerström test for nicotine dependence in an Indian sample of daily smokers with poly drug use. <i>Nicotine and Tobacco Research</i> , 12(11), 1162-1166.	India	<ul style="list-style-type: none"> Reliability of Fagerström Test for Nicotine Dependence in Indian smokers with history of polysubstance use 	X				X			X	X			X				

Citation	Intervention(s) Studied	Study Setting						What Was Measured?					What Was Found?	
		In-Patients	Out-Patients	Shelter	Prison	Gen. Pop.	Community	Physical Health	Mental Health	Cognition	Emotion/ Mood	Criminal Behaviour		Substance Use
Fernández-Serrano, M. J., Pérez-García, M., & Verdejo-García, A. (2011). What are the specific vs. generalized effects of drugs of abuse on neuropsychological performance? <i>Neuroscience and Biobehavioural Reviews</i> , 35(3), 377-406.	None	X	X			X	X	X		X	X			<ul style="list-style-type: none"> • Memory, decision making, updating, and emotional processing were the most generalized impairments across all substances • Size of impairment was reduced over time if individuals remained abstinent • Hard to neatly determine generalized versus specific effects due to large variability in results • Evidence suggested strong differences in neuropsychological effects between genders
Håkansson, A., & Berglund, M. (2012). Risk factors for criminal recidivism - a prospective follow-up study in prisoners with substance abuse. <i>BMC Psychiatry</i> , 12	None			X	X							X	X	<ul style="list-style-type: none"> • Recidivism associated with heroin and amphetamine use, injection drug use, polysubstance abuse • No association with alcohol, opioid analgesics, hallucinogenic drugs
Hakansson, A., Schlyter, F., & Berglund, M. (2011). Associations between polysubstance use and psychiatric problems in a criminal justice population in Sweden. <i>Drug and Alcohol Dependence</i> , 118(1), 5-11.	None				X				X	X	X		X	<ul style="list-style-type: none"> • Rates of particular psychological symptoms (depression, cognition problems, etc.) increased with number of substances used • High symptom severity associated with high number of substances used
Hewitt, L. N., Bhavsar, P., & Phelan, H. A. (2011). The secrets women keep: Intimate partner violence screening in the female trauma patient. <i>Journal of Trauma - Injury, Infection and Critical Care</i> , 70(2), 320-323.	None	X						X	X		X		X	<ul style="list-style-type: none"> • Method of screening via alcohol-abuse method was significantly better at detecting IPV • No connection between the giving of false or incorrect answers during screen and alcohol/polysubstance use • No evidence that the background of participants can be linked to the results of this study
Hyucksun Shin, S. (2012). A longitudinal examination of the relationships between childhood maltreatment and patterns of adolescent substance use among high-risk adolescents. <i>American Journal on Addictions</i> , 21(5), 453-461.	None	X	X			x		X	X	X	X		X	<ul style="list-style-type: none"> • Adolescents that experienced abuse or neglect more likely to become heavy substance users and less likely to transition out drug use • Identified three different classes of substance abuse patterns, increasing in severity: Class 1 - moderate alcohol, low cannabis, and no hard drugs; Class 2 - alcohol/cannabis and moderate hard drug users; Class 3 - heavy polysubstance users • Children with maltreatment were more likely to transition from less to more severe classes
Jhanjee, S., & Sethi, H. (2010). The fagerström test for nicotine dependence in an Indian sample of daily smokers with poly drug use. <i>Nicotine and Tobacco Research</i> , 12(11), 1162-1166.	None					X							X	<ul style="list-style-type: none"> • FTND had low internal consistency reliability • Reliability increased when questions focused on two separate facets of nicotine addiction: the urgency to restore nicotine levels after sleep and the need to maintain nicotine levels throughout daylight hours

Citation	Country	What Was Studied?	Who Was Studied?				Substance Use						Study Design					
			Men	Women	Youth (under 18)	Homeless	Alcohol	Methadone	Cocaine	Heroin	Cannabis	Other	Descriptive	Observational	Longitudinal	Comparison	Review	
Laudet, A. B. (2012). Rate and predictors of employment among formerly polysubstance dependent urban individuals in recovery. <i>Journal of Addictive Diseases</i> , 31(3), 288-302.	USA	• Predictive factors for employment for individuals recovering from substance use	X	X		X	X		X	X	X	X		X				
Laudet, A. B., & Stanick, V. (2010). Predictors of motivation for abstinence at the end of outpatient substance abuse treatment. <i>Journal of Substance Abuse Treatment</i> , 38(4), 317-327.	USA	• Identification of predictors to various motivation constructs to inform future therapeutic approaches and intervention methods	X	X			X		X	X	X	X			X			
Licht, C. L., Christoffersen, M., Okholm, M., Damgaard, L., Fink-Jensen, A., Knudsen, G. M., & Erritzoe, D. (2012). Simultaneous polysubstance use among Danish 3,4-methylenedioxymethamphetamine and hallucinogen users: Combination patterns and proposed biological bases. <i>Human Psychopharmacology</i> , 27(4), 352-363.	Denmark	• Patterns of simultaneous polysubstance use among MDMA and hallucinogen users	X	X			X	X	X	X	X	X	X					
MacLaren, V. V., & Best, L. A. (2010). Multiple addictive behaviors in young adults: Student norms for the shorter PROMIS questionnaire. <i>Addictive Behaviors</i> , 35(3), 252-255.	Canada	• Psychometric properties of the shorter Patient-Reported Outcomes Measurement Information System (PROMIS) questionnaire among university students	X	X			X					NR		X				
Mayet, A., Legleye, S., Chau, N., & Falissard, B. (2010). The mediation role of licit drugs in the influence of socializing on cannabis use among adolescents: A quantitative approach. <i>Addictive Behaviors</i> , 35(10), 890-895.	France	• Role of alcohol and tobacco use as socialization into cannabis use in a sequential pattern based on peer socialization among teenagers			X		X				X	X		X				

Citation	Intervention(s) Studied	Study Setting						What Was Measured?						What Was Found?
		In-Patients	Out-Patients	Shelter	Prison	Gen. Pop.	Community	Physical Health	Mental Health	Cognition	Emotion/ Mood	Criminal Behaviour	Substance Use	
Laudet, A. B. (2012). Rate and predictors of employment among formerly polysubstance dependent urban individuals in recovery. <i>Journal of Addictive Diseases</i> , 31(3), 288-302.	None					X		X	X				X	<ul style="list-style-type: none"> No index of substance use predicted employment Being male and Caucasian were twice as likely to be employed Chronic physical conditions and psychiatric problems lessen the chances of being employed by half
Laudet, A. B., & Stanick, V. (2010). Predictors of motivation for abstinence at the end of outpatient substance abuse treatment. <i>Journal of Substance Abuse Treatment</i> , 38(4), 317-327.	None		X				X	X			X		X	<ul style="list-style-type: none"> The following four predictive factors were significant in explaining patterns of polysubstance use with MDMA: Perceived harm of future drug use, abstinence self-efficacy, quality of life satisfaction, and number of network members in 12-step recovery Women reported more positive intervention experiences, higher levels of commitment to abstinence over men
Licht, C. L., Christoffersen, M., Okholm, M., Damgaard, L., Fink-Jensen, A., Knudsen, G. M., & Erritzoe, D. (2012). Simultaneous polysubstance use among Danish 3,4-methylenedioxymethamphetamine and hallucinogen users: Combination patterns and proposed biological bases. <i>Human Psychopharmacology</i> , 27(4), 352-363.	None					X							X	<ul style="list-style-type: none"> Polysubstance users used an average of 12.6 different substances over their lifetime Evident patterns of substances used together, and patterns of substances avoided together, as a direct result of interactive effects In participants' last use, MDMA was used with 2.1 +/- 1.2 other substances simultaneously
MacLaren, V. V., & Best, L. A. (2010). Multiple addictive behaviors in young adults: Student norms for the shorter PROMIS questionnaire. <i>Addictive Behaviors</i> , 35(3), 252-255.	None					X		X	X				X	<ul style="list-style-type: none"> Identification of two categories of addictive behaviour: hedonistic (gambling, illegal drugs, alcohol, etc.) and nurturant (compulsive helping, disordered eating, exercise etc.) Men scored higher than women on dominant relationships, exercise, gambling, illegal drugs, alcohol, tobacco, and sex Women scored higher on compulsive shopping, food bingeing, and starving Shorter PROMIS Questionnaire demonstrated to be highly reliable
Mayet, A., Legleye, S., Chau, N., & Falissard, B. (2010). The mediation role of licit drugs in the influence of socializing on cannabis use among adolescents: A quantitative approach. <i>Addictive Behaviors</i> , 35(10), 890-895.	None					X							X	<ul style="list-style-type: none"> Tobacco and alcohol use were influenced by time spent with friends Tobacco played much more significant role leading to cannabis use than alcohol Intervention and prevention practices in areas related to adolescence should focus on tobacco prevention Evidence of more complexities in how substance use interacts, i.e., the existence of backward gateways from cannabis to licit drugs such as alcohol

Citation	Country	What Was Studied?	Who Was Studied?				Substance Use						Study Design					
			Men	Women	Youth (under 18)	Homeless	Alcohol	Methadone	Cocaine	Heroin	Cannabis	Other	Descriptive	Observational	Longitudinal	Comparison	Review	
McLean, D., Gladman, B., & Mowry, B. (2012). Significant relationship between lifetime alcohol use disorders and suicide attempts in an Australian schizophrenia sample. The Australian and New Zealand Journal of Psychiatry, 46(2), 132-140.	USA / Australia	• Link between substance use disorders and suicide attempts, with a focus on alcohol, in schizophrenia	X	X			X					X	X				X	
Mukku, V. K., Benson, T. G., Alam, F., Richie, W. D., & Bailey, R. K. (2012). Overview of substance use disorders and incarceration of African American males. Frontiers in Psychiatry, 3(NOV)	USA	• Substance use and its correlation to crime and imprisonment	X		X	X	X		X			X	X	X				
Nakawaki, B., & Crano, W. D. (2012). Predicting adolescents' persistence, non-persistence, and recent onset of nonmedical use of opioids and stimulants. Addictive Behaviors, 37(6), 716-721.	USA	• Common illicit substance use in adolescence and its association with opioids and stimulants use			X		X					X					X	
Odden, H. L. (2012). Alcohol, tobacco, marijuana and hallucinogen use in Samoan adolescents. Drug and Alcohol Review, 31(1), 47-55.	Samoa	• Patterns of substance and polysubstance use in Samoan adolescents			X		X					X	X					X
Olthuis, J. V., Darredeau, C., & Barrett, S. P. (2012). Substance use initiation: The role of simultaneous polysubstance use. Drug and Alcohol Review,	Canada	• Substance use for the first time and whether polysubstance use was present	X	X			X	X	X	X	X	X	X				X	
Recupero, P. R., Stuart, G. L., Bidadi, N., & Harms, S. E. (2010). Effectiveness of a polysubstance dependence detoxification protocol for patients with co-occurring disorders. Journal of Dual Diagnosis, 6(2), 74-93.	USA	• Utility of Butler Instrument for Withdrawal Assessment Protocol in treating patients undergoing detoxification from substance or polysubstance dependence	X	X			X			X		X	X	X				

Citation	Intervention(s) Studied	Study Setting						What Was Measured?					What Was Found?
		In-Patients	Out-Patients	Shelter	Prison	Gen. Pop.	Community	Physical Health	Mental Health	Cognition	Emotion/ Mood	Criminal Behaviour	
McLean, D., Gladman, B., & Mowry, B. (2012). Significant relationship between lifetime alcohol use disorders and suicide attempts in an Australian schizophrenia sample. <i>The Australian and New Zealand Journal of Psychiatry</i> , 46(2), 132-140.	None	X	X				X	X				X	<ul style="list-style-type: none"> • Significant link between alcohol abuse disorders and suicide attempt rates • No significant link between cannabis or other substance abuse disorders and suicide attempt rates • No significant link between suicide attempt rates and polysubstance use without alcohol
Mukku, V. K., Benson, T. G., Alam, F., Richie, W. D., & Bailey, R. K. (2012). Overview of substance use disorders and incarceration of African American males. <i>Frontiers in Psychiatry</i> , 3(NOV)	None				X		X	X	X		X	X	<ul style="list-style-type: none"> • Majority of inmates were African Americans • Drug and alcohol use were correlated with crime
Nakawaki, B., & Crano, W. D. (2012). Predicting adolescents' persistence, non-persistence, and recent onset of nonmedical use of opioids and stimulants. <i>Addictive Behaviors</i> , 37(6), 716-721.	None					X						X	<ul style="list-style-type: none"> • Females were more likely than males to be lifetime non-medical users of prescription drugs • Persistent use of any common illicit substance was strong predictor of opioid and stimulant use
Odden, H. L. (2012). Alcohol, tobacco, marijuana and hallucinogen use in Samoan adolescents. <i>Drug and Alcohol Review</i> , 31(1), 47-55.	None					X						X	<ul style="list-style-type: none"> • Boys reported significantly more drug use than girls • Significant differences in prevalence of use across every category of substance, in any use over the past 30 days, polysubstance use and substance use problems
Olthuis, J. V., Darredeau, C., & Barrett, S. P. (2012). Substance use initiation: The role of simultaneous polysubstance use. <i>Drug and Alcohol Review</i> ,	None					X						X	<ul style="list-style-type: none"> • Initial use of alcohol, tobacco, and/or marijuana use were not simultaneous with other substances use • Polysubstance use tended to occur with 'harder drugs' • Use of soft substances (alcohol, tobacco, marijuana) may be an appropriate target for intervention or prevention
Recupero, P. R., Stuart, G. L., Bidadi, N., & Harms, S. E. (2010). Effectiveness of a polysubstance dependence detoxification protocol for patients with co-occurring disorders. <i>Journal of Dual Diagnosis</i> , 6(2), 74-93.	None	X					X					X	<ul style="list-style-type: none"> • BIWA protocol may aid clinicians in making objective decisions in the appropriate administration of medicines in the intervention of substance and polysubstance withdrawal • Detoxification needs to address comorbid disorders, otherwise it may lead to discharge against medical advice

Citation	Country	What Was Studied?	Who Was Studied?				Substance Use						Study Design				
			Men	Women	Youth (under 18)	Homeless	Alcohol	Methadone	Cocaine	Heroin	Cannabis	Other	Descriptive	Observational	Longitudinal	Comparison	Review
Redonnet, B., Chollet, A., Fombonne, E., Bowes, L., & Melchior, M. (2012). Tobacco, alcohol, cannabis and other illegal drug use among young adults: The socioeconomic context. <i>Drug and Alcohol Dependence</i> , 121(3), 231-239.	France	• Ability of low socioeconomic status to predict risk of substance abuse	X	X			X					X					X
Root, T. L., Pisetsky, E. M., Thornton, L., Lichtenstein, P., Pedersen, N. L., & Bulik, C. M. (2010). Patterns of co-morbidity of eating disorders and substance use in Swedish females. <i>Psychological Medicine</i> , 40(1), 105-115.	Sweden	• Association between eating disorders and substance use in women		X			X					X	X				X
Rukskul, I. (2010). The prevalence of common mental disorders among inpatient Thai army personnel. <i>Journal of the Medical Association of Thailand = Chotmaihet Thangphaet</i> , 93 Suppl 6, S6-12.	Thailand	• Prevalence of mental disorders among inpatient army personnel	X	X			X					X	X				
Schwartz, B., Wetzler, S., Swanson, A., & Sung, S. C. (2010). Subtyping of substance use disorders in a high-risk welfare-to-work sample: A latent class analysis. <i>Journal of Substance Abuse Treatment</i> , 38(4), 366-374.	USA	• Patterns of co-occurring drug abuse/ dependence diagnoses in clients attending local welfare centers	X	X			X					X	X			X	
Schweitzer, V. G., Darrat, I., Stach, B. A., & Gray, E. (2011). Sudden bilateral sensorineural hearing loss following polysubstance narcotic overdose. <i>Journal of the American Academy of Audiology</i> , 22(4), 208-214.	USA	• 18 year old female suffering hearing loss after polysubstance bingeing		X			X		X	X		X				X	

Citation	Intervention(s) Studied	Study Setting					What Was Measured?						What Was Found?	
		In-Patients	Out-Patients	Shelter	Prison	Gen. Pop.	Community	Physical Health	Mental Health	Cognition	Emotion/ Mood	Criminal Behaviour		Substance Use
Redonnet, B., Chollet, A., Fombonne, E., Bowes, L., & Melchior, M. (2012). Tobacco, alcohol, cannabis and other illegal drug use among young adults: The socioeconomic context. <i>Drug and Alcohol Dependence</i> , 121(3), 231-239.	None					X							X	<ul style="list-style-type: none"> Substance use common among young adults, particularly those with low socioeconomic status Interventions should aim to decrease substance abuse and reduce socioeconomic inequalities Intervention should be implemented early in life
Root, T. L., Pisetsky, E. M., Thornton, L., Lichtenstein, P., Pedersen, N. L., & Bulik, C. M. (2010). Patterns of co-morbidity of eating disorders and substance use in Swedish females. <i>Psychological Medicine</i> , 40(1), 105-115.	None					X	X	X					X	<ul style="list-style-type: none"> Eating disorders were associated with greater substance use Anorexia nervosa group were significantly more likely to use all types of illicit drugs Prevalence of substance use was higher in all types of eating disorder groups compared to control group
Rukskul, I. (2010). The prevalence of common mental disorders among inpatient Thai army personnel. <i>Journal of the Medical Association of Thailand = Chotmaihet Thangphaet</i> , 93 Suppl 6, S6-12.	None	X						X					X	<ul style="list-style-type: none"> Most prevalent mental disorders in the inpatient Thai army were alcohol dependence, schizophrenia, and bipolar disorder
Schwartz, B., Wetzler, S., Swanson, A., & Sung, S. C. (2010). Subtyping of substance use disorders in a high-risk welfare-to-work sample: A latent class analysis. <i>Journal of Substance Abuse Treatment</i> , 38(4), 366-374.	None					X	X	X					X	<ul style="list-style-type: none"> Abuse or dependence of multiple substances was typical in substance use disorder (SUD) intervention programs often focused on detoxification or maintenance for a specific substance (e.g., alcohol detoxification, methadone maintenance) rather than multiple substances Few programs were designed to treat co-occurring medical or psychiatric problems Successful programs need to address overall problems and help patients transition from welfare to workfare
Schweitzer, V. G., Darrat, I., Stach, B. A., & Gray, E. (2011). Sudden bilateral sensorineural hearing loss following polysubstance narcotic overdose. <i>Journal of the American Academy of Audiology</i> , 22(4), 208-214.	None	X	X				X							<ul style="list-style-type: none"> Two days of polysubstance abuse resulted in moderately severe bilateral hearing loss Hearing loss was treated with 1 month of a high dose prednisone and 10 subsequent months of pentoxifylline and resulted in significant hearing improvement

Citation	Country	What Was Studied?	Who Was Studied?				Substance Use						Study Design					
			Men	Women	Youth (under 18)	Homeless	Alcohol	Methadone	Cocaine	Heroin	Cannabis	Other	Descriptive	Observational	Longitudinal	Comparison	Review	
Shin, S. H., Hong, H. G., & Hazen, A. L. (2010). Childhood sexual abuse and adolescent substance use: A latent class analysis. <i>Drug and Alcohol Dependence</i> , 109(1-3), 226-235.	USA	• Patterns of adolescent substance abuse and associations with childhood sexual abuse			X		X		X		X	X	X					
Takagi, M., Lubman, D. I., Cotton, S., Fornito, A., Baliz, Y., Tucker, A., & Yücel, M. (2011). Executive control among adolescent inhalant and cannabis users. <i>Drug and Alcohol Review</i> , 30(6), 629-637.	Australia	• Executive functioning among three groups: inhalant, cannabis, and control	X	X	X		X					X	X				X	
Thekiso, T. B., & Farren, C. (2010). Over the counter' (OTC) opiate abuse treatment. <i>Irish Journal of Psychological Medicine</i> , 27(4), 189-191.	Ireland	• Clinical profiles, intervention, and prevalence of over the counter (OTC) opiate abuse in patients	X	X			X					X	X					
Tolfreya, M., Fox, S., & Jeffcotec, N. (2011). Beliefs about substance use and the attribution of blame for criminal offence. <i>Journal of Forensic Psychiatry and Psychology</i> , 22(2), 266-277.	UK	• Relationship between attitudes towards substance use and attribution of blame for criminal offence	X				X		X	X	X	X					X	
Tonigan, J. S., & Beatty, G. K. (2011). Twelve-step program attendance and polysubstance use: Interplay of alcohol and illicit drug use. <i>Journal of Studies on Alcohol and Drugs</i> , 72(5), 864-871.	USA	• Temporal relationship between alcohol and illicit drug use • 12 step program attendance and drug use	X	X			X		X			X				X		
Torchalla, I., Strehlau, V., Li, K., & Krausz, M. (2011). Substance use and predictors of substance dependence in homeless women. <i>Drug and Alcohol Dependence</i> , 118(2-3), 173-179.	Canada	• Prevalence of substance use disorders and predictors among homeless women		X		X	X	X	X	X	X	X		X				

Citation	Intervention(s) Studied	Study Setting						What Was Measured?						What Was Found?
		In-Patients	Out-Patients	Shelter	Prison	Gen. Pop.	Community	Physical Health	Mental Health	Cognition	Emotion/ Mood	Criminal Behaviour	Substance Use	
Shin, S. H., Hong, H. G., & Hazen, A. L. (2010). Childhood sexual abuse and adolescent substance use: A latent class analysis. <i>Drug and Alcohol Dependence</i> , 109(1-3), 226-235.	None						X	X	X		X	X	X	<ul style="list-style-type: none"> Girls: abstainers/low users (24.5%); moderate alcohol and cannabis users (33.8%); high alcohol/cannabis and moderate amphetamine/cocaine users (24%); and heavy poly-substance users (17.7%) Boys: abstainers/low users (20.5%); high alcohol/cannabis and low amphetamine users (50.5%); and heavy polysubstance users (29%) Childhood sexual abuse associated with higher risk of being heavy polysubstance user in females
Takagi, M., Lubman, D. I., Cotton, S., Fornito, A., Baliz, Y., Tucker, A., & Yücel, M. (2011). Executive control among adolescent inhalant and cannabis users. <i>Drug and Alcohol Review</i> , 30(6), 629-637.	None					X			X				X	<ul style="list-style-type: none"> No significant difference in executive functioning was found between the inhalant, cannabis, and control group Inhalant group scored poorer on three measures (reaction time errors, congruent errors, omission errors), suggesting inhalant use was associated with poorer performance Regular inhalant use was positively correlated with negative mood and greater conduct problems
Thekiso, T. B., & Farren, C. (2010). Over the counter' (OTC) opiate abuse treatment. <i>Irish Journal of Psychological Medicine</i> , 27(4), 189-191.	None	X					X	X		X			X	<ul style="list-style-type: none"> Typical abusers were middle-aged females with comorbid psychiatric illnesses OTC opiate abuse was largely comorbid with mental health problems Frequent complications included withdrawal symptoms
Tolfreya, M., Fox, S., & Jeffcotec, N. (2011). Beliefs about substance use and the attribution of blame for offending. <i>Journal of Forensic Psychiatry and Psychology</i> , 22(2), 266-277.	None	X							X				X	<ul style="list-style-type: none"> Alcohol and cannabis were the most popular substances abused, many were polysubstance users 14.9 years was the average age of initiating use Maladaptive substance related beliefs (e.g. 'I will feel better if I use') strongly correlated with higher externalization of blame for criminal offence
Tonigan, J. S., & Beatty, G. K. (2011). Twelve-step program attendance and polysubstance use: Interplay of alcohol and illicit drug use. <i>Journal of Studies on Alcohol and Drugs</i> , 72(5), 864-871.	12 Step					X							X	<ul style="list-style-type: none"> 12 step program participation may prevent future alcohol and drug use Illicit drug use predicted alcohol use Illicit drug use led to increased alcohol use for non affiliates, but not 12 step program affiliates
Torchalla, I., Strehlau, V., Li, K., & Krausz, M. (2011). Substance use and predictors of substance dependence in homeless women. <i>Drug and Alcohol Dependence</i> , 118(2-3), 173-179.	None					X	X	X	X			X	X	<ul style="list-style-type: none"> Crack cocaine most commonly used substance (58%), followed by alcohol (53%), cannabis (41%), and heroin (30%) 82.4% had at least one type of substance use disorder 76.7% of those with current alcohol dependence had concurrent drug dependence 58.3% had concurrent substance use and mental health disorders Predictors of current drug dependence: being younger, living on the street, suicide attempts, engaging in sex work

Citation	Country	What Was Studied?	Who Was Studied?				Substance Use						Study Design				
			Men	Women	Youth (under 18)	Homeless	Alcohol	Methadone	Cocaine	Heroin	Cannabis	Other	Descriptive	Observational	Longitudinal	Comparison	Review
Torchalla, I., Strehlau, V., Okoli, C. T., Li, K., Schuetz, C., & Krausz, M. (2011). Smoking and predictors of nicotine dependence in a homeless population. <i>Nicotine and Tobacco Research</i> , 13(10), 934-942.	Canada	• Prevalence and trends in tobacco use and dependence in homeless people	X	X		X	X	X	X	X	X		X				
Trenz, R. C., Scherer, M., Harrell, P., Zur, J., Sinha, A., & Latimer, W. (2012). Early onset of drug and polysubstance use as predictors of injection drug use among adult drug users. <i>Addictive Behaviors</i> , 37(4), 367-372.	USA	• Association between early onset drug and polysubstance use with injection drug use as adults	X	X	X		X		X	X	X	X	X				
Verdejo-García, A., Del Mar Sánchez-Fernández, M., Alonso-Maroto, L. M., Fernández-Calderón, F., Perales, J. C., Lozano, O., & Pérez-García, M. (2010). Impulsivity and executive functions in polysubstance-using rave attenders. <i>Psychopharmacology</i> , 210(3), 377-392.	Spain	• Impulsivity and executive functioning among polysubstance using rave attenders	X	X			X		X		X	X				X	
Weimer, M. B., Korthuis, P. T., Behonick, G. S., & Wunsch, M. J. (2011). The source of methadone in overdose deaths in western Virginia in 2004. <i>Journal of Addiction Medicine</i> , 5(3), 188-202.	USA	• Source of methadone related overdose deaths • Participation in opioid intervention program	X	X			X	X		X			X				
Woods, M. R., & Drake, R. E. (2011). Treatment of a young man with psychosis and polysubstance abuse. <i>Journal of Dual Diagnosis</i> , 7(3), 175-185.	USA	• Young man with mental health and substance use problems attending dual-diagnosis services and recovery program	X				X				X	X		X			

Citation	Intervention(s) Studied	Study Setting						What Was Measured?						What Was Found?
		In-Patients	Out-Patients	Shelter	Prison	Gen. Pop.	Community	Physical Health	Mental Health	Cognition	Emotion/ Mood	Criminal Behaviour	Substance Use	
Torchalla, I., Strehlau, V., Okoli, C. T., Li, K., Schuetz, C., & Krausz, M. (2011). Smoking and predictors of nicotine dependence in a homeless population. <i>Nicotine and Tobacco Research</i> , 13(10), 934-942.	None					X	X		X		X	X	X	<ul style="list-style-type: none"> Smokers with high nicotine dependence were half as likely as non-smokers to be Aboriginal Smokers were 2.39 times more likely to be incarcerated Smokers were 2.44 times more likely to have current drug dependence Highly dependent smokers also used more cocaine, opioids, and alcohol
Trenz, R. C., Scherer, M., Harrell, P., Zur, J., Sinha, A., & Latimer, W. (2012). Early onset of drug and polysubstance use as predictors of injection drug use among adult drug users. <i>Addictive Behaviors</i> , 37(4), 367-372.	None					X	X						X	<ul style="list-style-type: none"> Injection drug users initiated cigarette, marijuana, and alcohol use significantly earlier on in life than non users Early onset polysubstance users more likely to have injection drug use status than those with later onset Polysubstance use only a significant predictor of injection drug use status for Caucasian people
Verdejo-García, A., Del Mar Sánchez-Fernández, M., Alonso-Maroto, L. M., Fernández-Calderón, F., Perales, J. C., Lozano, O., & Pérez-García, M. (2010). Impulsivity and executive functions in polysubstance-using rave attenders. <i>Psychopharmacology</i> , 210(3), 377-392.	None						X		X	X			X	<ul style="list-style-type: none"> Polysubstance users scored significantly higher on lack of perseverance and positive and negative urgency No differences were found in premeditation or sensation seeking Significantly poorer performance on analogical reasoning, processing speed, working memory, inhibition/switching errors and decision making but were similar on self-regulation, reversal learning, and emotion processing Not different than non-users on premeditation or sensation seeking
Weimer, M. B., Korthuis, P. T., Behonick, G. S., & Wunsch, M. J. (2011). The source of methadone in overdose deaths in western Virginia in 2004. <i>Journal of Addiction Medicine</i> , 5(3), 188-202.	None					X							X	<ul style="list-style-type: none"> Rise in methadone prescribing as well as methadone related deaths Most deaths did not result from over prescribing but from non prescription use (especially when mixed with other substances) Opioid intervention programs did not increase the risk of methadone related overdose Interventions to decrease overdose should focus on non prescription usage
Woods, M. R., & Drake, R. E. (2011). Treatment of a young man with psychosis and polysubstance abuse. <i>Journal of Dual Diagnosis</i> , 7(3), 175-185.	12 Step, Cognitive Behavioural Therapy, Group Program, Exercise, Sleep Hygiene, Family Education, Self Help, Art					X		X	X				x	<ul style="list-style-type: none"> One year after enrollment, client returned to school, maintained a part-time job, and managed mental illness, addiction, and sleep apnea

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For more information:
Kathleen Bloom, PhD
kbloom@kimpact.ca