



**Drugs: Education, Prevention and Policy** 

ISSN: 0968-7637 (Print) 1465-3370 (Online) Journal homepage: https://www.tandfonline.com/loi/idep20

## Up in smoke: Cannabis content in alcohol and other drug qualifications

Ann Roche, Victoria Adams & Michael White

To cite this article: Ann Roche, Victoria Adams & Michael White (2014) Up in smoke: Cannabis content in alcohol and other drug qualifications, Drugs: Education, Prevention and Policy, 21:2, 140-146, DOI: 10.3109/09687637.2013.819567

To link to this article: https://doi.org/10.3109/09687637.2013.819567



Published online: 31 Jul 2013.



Submit your article to this journal 🕝

Article views: 71



View related articles



View Crossmark data 🗹

Citing articles: 1 View citing articles

# Up in smoke: Cannabis content in alcohol and other drug qualifications

### Ann Roche, Victoria Adams, & Michael White

National Centre for Education and Training on Addiction, Flinders University, Adelaide, Australia

*Aims*: Cannabis is the most common illicit drug in Australia and internationally, with correspondingly high rates of presentation within treatment settings. It is imperative that the alcohol and other drug (AOD) workforce has the skills to deal with cannabis-related issues. This study examined the extent and quality of cannabis training in AOD qualifications within the Vocational Education and Training (VET) sector.

*Methods*: A national survey of Registered Training Organisation (RTO) managers/trainers (N = 49, response rate 86%) involved in the delivery of AOD qualifications. Open-ended and categorical questions assessed views on cannabis training. Descriptive and qualitative analyses were undertaken.

*Findings*: Although most respondents (96%) considered it important for students to learn about cannabis, it was largely absent from training. Implementation was at the discretion of individual trainers and varied widely between institutions. While student interest in cannabis was perceived to be relatively low, most trainers (62%) supported more content on cannabis.

*Conclusions*: Scope exists to substantially enhance cannabis training, as there is currently significant variation in the extent to which cannabis is addressed within AOD qualifications. More cannabis training resources, professional development and an RTO network are recommended to facilitate this goal.

#### INTRODUCTION

In recent years, increased attention has been directed towards the training needs of the alcohol and other drug (AOD) workforce (Deakin & Gethin, 2007; Libretto et al., 2004; Mulvey, Hubbard, & Hayashi, 2003; Pidd, Roche, Duraisingam, & Carne, 2012; Roche & Pidd, 2010). In part, this reflects a rising demand for AOD services, recognition of the complexity of AOD issues, and greater emphasis on evidence-based practice (Roche & Pidd, 2010). A skilled AOD workforce is essential in order to respond effectively to these and other challenges. In turn, this requires a high quality training system providing comprehensive AOD qualifications.

A central issue of concern for the contemporary AOD workforce is the high prevalence of cannabis use. Cannabis is consumed by 75% of illicit drug users internationally, and is the world's most produced, trafficked and consumed illicit drug (UNDOC, 2012). Approximately 18 million Americans (SAMHSA, 2012) and 13–14 million Europeans (EMCDDA, 2008) are current cannabis users. Prevalence is similarly high in Australia. In 2010, cannabis was the most commonly used illicit drug in Australia, with approximately 1.9 million people having used it in the previous 12 months (AIHW, 2011a). Rates were higher for Indigenous Australians, who were 1.6 times as likely as non-Indigenous Australians to have recently used cannabis (AIHW, 2011a).

Cannabis has been associated with numerous potentially harmful consequences, including physical (Jacobus et al., 2012; Moore, Augustson, Moser, & Budney, 2005) and mental (Fairman & Anthony, 2012; Fergusson, Poulton, Smith, & Boden, 2006; Galvez-Buccollini et al., 2012) health problems, poor educational achievement (Fergusson, Horwood, & Beautrais, 2003), memory deficits (Solowij et al., 2011) and the associated use of other drugs (Fergusson, Boden, & Horwood, 2006; Fiellin, Tetrault, Becker, Fiellin, & Hoff, 2013; Swift et al., 2012). Despite this, it is perceived as relatively easy to obtain (O'Brien et al., 2006) and largely maintains a reputation as a 'soff' drug (McLaren, Lemon, Robins, & Mattick, 2008).

Correspondence: Ann Roche, National Centre for Education and Training on Addiction, Flinders University, Adelaide, Australia. E-mail: ann.roche@flinders.edu.au

Consistent with its prevalence and associated harms, cannabis has a high rate of presentation within AOD treatment settings. Treatment episodes for cannabis have increased in recent years (Roxburgh et al., 2010), possibly due to diversion programs or increased awareness of associated harms (Copeland & Swift, 2009). Even when not the principal presenting drug, cannabis is often part of the clinical profile of many AOD clients (McLaren et al., 2008). In Europe, cannabis was the primary reason for seeking AOD treatment in 20% of all cases and 29% of new cases, making it the most frequently reported drug after heroin (EMCDDA, 2007). Similarly, in Australia in 2010-2011 cannabis was the most common reason for seeking AOD treatment after alcohol (AIHW, 2012).

It is imperative that specialist AOD workers are equipped with the requisite skills to deal with cannabisrelated issues. As such, it would be expected that all AOD qualifications include comprehensive cannabis content and clinical skill development; i.e. information on prevalence, risks associated with use, and evidencebased interventions. However, the extent to which this occurs is currently unknown (Roche, White, Duraisingam, & Adams, 2012).

A large proportion of Australian AOD workers obtain qualifications through the Vocational Education and Training (VET) sector. The VET sector provides vocationally-based qualifications for students with few formal qualifications seeking employment in the AOD field. Those with qualifications but limited experience, or professionals wishing to update their skills or meet mandatory qualification requirements, also access VET training. Students undertaking VET training are likely to enter the specialist AOD workforce and have direct and frequent contact with cannabis-users. As such, it is important that they obtain comprehensive cannabis knowledge and skills within VET sector AOD qualifications.

All qualifications offered through the VET sector are competency-based and nationally endorsed. The competency standards and assessment criteria are stipulated within the Community Services Training Package (CHC08) (CSHISC, 2008). The Training Package outlines the skills required to perform effectively in AOD roles, and provides a framework for course delivery. However, it does not specify the coverage or focus that should be applied to cannabis training, and the units of competency do not contain any cannabis-specific knowledge requirements. Hence, AOD qualifications delivered by different institutions may offer varying levels of cannabis training.

Accurate information on the availability, delivery and quality of cannabis training is essential to plan for the professional development needs of the AOD workforce. This study sought to explore this issue and formulate recommendations for the improvement of VET sector cannabis training. A secondary aim was to canvass interest among participants in providing input into the development of cannabis-specific training and resources (Roche et al., 2012).

#### METHOD

#### **Participants**

Participants were course coordinators, trainers, CEOs/ owners and/or managers from all Australian states involved in the delivery of relevant AOD courses, i.e. the Certificate IV in Alcohol and Other Drugs Work (Cert IV AOD), Diploma of Community Services (Alcohol and Other Drugs) (Dip CS (AOD)), and the Diploma of Community Services (Alcohol, Other Drugs and Mental Health) (Dip CS (AOD/MH)).

#### Sampling and recruitment

Participants were recruited from registered training organizations (RTOs) on the Australian Government's website www.training.gov.au (Roche & White, 2011). An organization was included if it offered one or more nationally accredited alcohol and other drugs qualifications on its Scope of Registration as at 30 August 2011. Scope of Registration refers to the qualifications, units of competency and accredited courses which an RTO is registered to provide. Of the 4889 agencies listed on the government website, 69 (1.4%) met this criteria. Contacts from these organizations were approached and invited to participate.

#### Survey instrument

An interview protocol was developed to assess participants' views on cannabis content in AOD qualifications. The survey comprised both open-ended and categorical questions addressing: perceived importance of cannabis training, student interest in cannabis, extent to which courses met students' needs, units which best addressed students' needs, cannabis assessment within recognition of prior learning (RPL) processes and views on enhancing cannabis coverage. Demographic questions included years of experience, current role, qualifications, gender age, and location of organization.

#### Data collection and analysis

The survey was completed over the phone or in writing. In the latter case, copies of the survey were provided with options to return by e-mail, fax or prepaid post. Phone interview responses were initially manually recorded and subsequently transcribed onto an electronic database. Interviews took  $\sim 20$  minutes, with participants assured of confidentiality and anonymity.

Quantitative data were analysed using SPSS version 19. Descriptive statistics were performed to summarize key responses and demographic characteristics. Qualitative comments were analysed and coded according to identified themes.

Q1. In the AOD field, how	important do you persona	ally think it is	for students to	learn about can	nabis in AOD train	ing?	
	1	2	3	4	5	Mean	Ν
	Not at all important				Very important		
Number of responses (%)	0 (0%)	0 (0%)	2 (4.1%)	16 (32.7%)	31 (63.3%)	4.59	49
Q2. What is the level of inte	erest expressed in learnin	ig about canna	bis by your stu	dents?			
	1	2	3	4	5	Mean	Ν
	Very low				Very high		
Number of responses (%)	0 (0%)	7 (15.6%)	15 (33.3%)	15 (33.3%)	8 (17.8%)	3.53	45
Q3. Do you think the current	t courses meet this need	?					
	1	2	3	4	5	Mean	Ν
	Not at all				Fully		
Number of responses (%)	1 (2.2%)	3 (6.5%)	15 (32.6%)	19 (41.3%)	8 (17.4%)	3.65	46

#### Table I. Perceptions of cannabis-related content.

#### Ethics

Ethics approval was obtained from Flinders University and Southern Adelaide Health Service Social and Behavioural Research Ethics Committee.

#### RESULTS

#### Sample demographics

Of the 69 training providers invited to participate, 12 no longer offered relevant qualifications or failed to respond, and were thus deemed ineligible. An additional eight declined to participate or could not be interviewed within the timeframe. Of these eight, information was available on six: five were based in Victoria, five offered the Cert IV, four offered the Dip CS (AOD), and three offered the Dip CS (AOD/MH).

This resulted in a final sample of 49 participants and a response rate of 86%, with each participant representing a single RTO. The majority of respondents were female (63%), and aged over 50 years (53%). Respondents were predominantly based in Victoria (37%) and New South Wales (29%), with smaller percentages from Queensland (14%), South Australia (6%), Australian Capital Territory (4%), Tasmania (2%), Western Australia (4%), and Northern Territory (4%).

The sample consisted of trainers/educators (61%), course coordinators (41%), and RTO managers (31%). These roles were not mutually exclusive. Respondents held the following formal qualifications; Certificate IV (72%), non-AOD Diploma (51%), Bachelor's degree (68%), and/or postgraduate qualification (55%). Thirty-four percent held a Cert IV (AOD), 28% a Dip CS (AOD) and 9% a Dip CS (AOD/MH). In addition to their current role, respondents had previously been frontline AOD workers (82%), supervisors (56%) and/or managers (48%), and 30% had experience as an AOD volunteer.

#### Perceptions of cannabis training

The majority of respondents (96%) indicated that it was 'important' or 'very important' for students to learn about cannabis, mean score 4.59 on a 5-point scale (1 = not at all important, 5 = very important) (see Table I). Risk of harm and high prevalence were identified as key reasons to include cannabis content.

It is important that students get a good grounding in uses relating to cannabis, as it is the most commonly used drug, apart from alcohol and tobacco.

Concern was expressed that cannabis was commonly seen as a 'safe' and socially acceptable drug. Some respondents suggested that cannabis-specific training and resources should be developed which encouraged a more critical perspective and highlighted the effects of cannabis.

Cannabis is a very underestimated substance by the community...other workers in the field don't take it seriously.

In contrast to trainer priorities, respondents perceived only a moderate level of interest in cannabis amongst students; mean score 3.53 on a 5-point scale (Table I). There was a perception that students saw cannabis as a 'soft' drug, and therefore not a priority issue.

There is a certain level of interest, but students are much more interested in the more political drugs. Because cannabis has a higher level of acceptance in the community, it is not seen to be of significant concern.

Sixty percent of respondents felt that student interest in cannabis had changed over time. Of these, 73% indicated that interest had increased. Factors noted to increase interest included learning about the impact of cannabis on brain function, mental health, and the user, their family and community. Interest was further increased by training in pharmacology and neurobiology, exposure to clinical practice issues through course

Ta	b	le	II.	Perceived	need	to	improve	cannabis-re	lated	content.
----	---	----	-----	-----------	------	----	---------	-------------	-------	----------

Connabia related aurway items	$\mathbf{V}_{22}$ $(\mathcal{O}_{2})$	$N_{0}(0/2)$	N
	168 (%)	NO (%)	11
Where a student completes units of competency by RPL/RCC does this assessment specifically address knowledge and attitudes about cannabis?	45	55	42
Do you feel there is a need for more course content on cannabis?	62	38	42
Can you identify ways to enhance the coverage of cannabis in the skill set for AOD, Cert IV (AOD), Dip CS (AOD) and/or Dip CS (AOD/MH)?	80	20	46
Would you be interested in providing input into the development of cannabis-specific training and training resources that could be used to enhance training in:			
Cert IV (AOD)	87	13	47
Diploma of Community Services (AOD)	80	20	35
Diploma of Community Services (AOD/MH)	87	13	40

placements, and challenging cannabis' reputation as a 'soft' drug.

There has been a spike in interest because of the recent research which has shown a clear link between cannabis use and mental health issues and this has corresponded with an increase in student awareness and interest in cannabis.

#### **Dissatisfaction with Training Package**

A number of respondents expressed significant concern over the lack of attention directed towards cannabis in the Training Package. The current Training Package does not stipulate which drugs should be prioritized, how many should be covered, or the extent and focus of training. The underpinning knowledge and skills described in the Training Package were therefore subjectively interpreted by trainers based on their perception of what was most important. As a result, RTOs used a range of criteria to allocate training time and resources to specific drugs, including prevalence, harm severity, or student and trainer interest. This led to substantial variability in the degree of cannabis training.

Typically, it was the trainers who decided whether to include cannabis content, and this depended on their knowledge of and attitudes towards cannabis. Frequently cannabis was subsumed within more general presentations on drugs, resulting in a limited focus on it as a drug of concern. Many respondents indicated that as the Training Package did not stipulate the required content, delivery of cannabis training was seen as 'optional' and often not prioritized.

There is not enough direction in the Training Package and the requirements could be clarified by reviewing the Training Package.

#### **Dissatisfaction with RPL**

Recognition of prior learning (RPL) enables students with prior knowledge to obtain credit for that learning, obviating the need to 'repeat' it through training. Knowledge may have been gained through previous education or work experience. Students seeking RPL develop a portfolio of evidence demonstrating that they meet the requirements for a competency or qualification, which an RPL assessor then evaluates.

Responses indicated that many students gained at least part of their qualification through RPL. However, RPL was found to be highly inconsistent and subjective (Table II). The extent to which cannabis-related knowledge was assessed within RPL varied widely both between and within organizations.

In some cases, yes, we would deal with cannabis in RPL. However, it would be very dependent on a unit or element that they were seeking RPL (for), and who was conducting the RPL.

In several organizations, RPL reportedly contained no assessment of cannabis. Reasons for this included that assessment questions did not address specific drugs, or focussed on the 'harder' drugs. In some cases, cannabis was only assessed in AOD-specific units. Nearly 20% of respondents noted that whether their RPL process included cannabis was subject to the student or assessor specifically identifying it.

The performance criteria in the units are very generic, and do not direct us specifically to ask questions on cannabis.

#### Adequacy of current cannabis training

Seventeen percent of respondents stated that student needs in regard to cannabis content were fully met (see Table I). Access to good quality trainers, work placements and resources were cited as pivotal factors in meeting student needs.

... all of the trainers work or have worked in the AOD/mental health sector and have significant industry experience.

... we give all our students an opportunity for a full week of fieldwork, and I believe that this gives students enough knowledge to form the basis for understanding what they need to know to be able to work out in the field. Table III. Training units which could best address students' knowledge and skills about cannabis.

Unit number and title	Focus of unit*			
CHCAOD402B Work Effectively in the Alcohol and Other	Basic instruction in AOD-relevant knowledge, skills,			
Drugs Sector	values, services and approaches			
CHCAOD408A Assess Needs of Clients with Alcohol and/ or Other Drug Issues	Assessing client needs, developing case plans, and referring clients to other services			
CHCAOD406D Work with Clients who are Intoxicated	Working with AOD-affected clients in a range of settings			
CHCAOD411A Provide Interventions for People with Alcohol and other Drug Issues	Providing a range of interventions to address AOD issues through treatment planning			
CHCMH401A Work Effectively in Mental Health Settings	Working across of the range of settings where mental health work occurs			
CHCMH408B Provide Interventions to Meet the Needs of	Providing support and interventions for consumers with co-			
Consumers with Mental Health and AOD Issues	existing mental health and AOD issues			

\*Adapted from http://training.gov.au/Training/Details/CHC08.

However, some participants noted that the degree to which student needs were met depended on trainers' interest in, and knowledge of, cannabis.

There is room for improvement on our course. The required knowledge and information is not written into the curriculum guidelines and so it is very much left to the knowledgebase of the trainer as to what gets delivered on cannabis.

Most participants (62%) felt that there was a need for more course content on cannabis, and 80% indicated that they could identify ways to enhance the cannabis coverage within AOD qualifications. Six units were identified that could best address students' knowledge and skills about cannabis (Table III). The majority of participants expressed interest in providing input into the development of cannabis-specific training and resource development (Table II).

#### DISCUSSION

This is the first national study to examine the extent and quality of cannabis content in VET sector AOD qualifications. RTO training providers were surveyed about their views on cannabis training, with a substantial proportion reporting that student needs in this area were not fully met. Limitations in current cannabis education and scope for improvement were noted.

#### Provision of cannabis-related content

Findings from this study suggested that cannabis education in VET sector AOD qualifications was often limited. VET sector AOD qualifications are developed through a process of consultation. The Community Services and Health Industry Skills Council coordinate an Industry Reference Group which provides advice on units of competency and qualifications. Individual RTOs may also work with local industry to ensure that content meets employer needs. However, qualifications have a broad focus, and do not mandate specific content, structure or consultation on training development. Trainers have considerable discretion in regard to content; with the exception of alcohol and tobacco, there are no required knowledge outcomes for specific drugs.

As a result, this study found considerable variability in training content, and whether specific drugs such as cannabis were included. Cannabis content was found to be generally very limited, with no consistency of coverage and no units within which it had to be specifically addressed.

Over 95% of training providers felt that cannabis content was important. However, whether this translated into reality was subject to trainer discretion. Similarly, there was often no organizational policy on assessing cannabis-related knowledge within RPL. Whether cannabis was included in the RPL process was often decided by the assessor or student, frequently resulting in little or no cannabis coverage.

Thus, despite a professed need for greater cannabis content, many trainers did not provide it. This apparent anomaly may be explained by trainers' belief that there is a lack of support to cover this topic. The current Training Package does not stipulate the extent to which cannabis should be covered within AOD qualifications, nor any cannabis-specific knowledge requirements. While this does not prevent trainers from incorporating cannabis content, many were reluctant to cover it without a clear directive to do so. Without external guidance regarding required scope and knowledge outcomes, some trainers felt uncertain about how to approach the topic and were hesitant to cover it comprehensively within qualifications. This was compounded by lack of appropriate resources and clinical partners.

#### Student interest in cannabis

Numerous respondents noted an apparent disinterest in cannabis amongst students. This was attributed to not understanding its associated harms, and believing that it was a natural product and less harmful than 'hard' drugs. Many trainers believed that a substantial proportion of students used cannabis themselves, and this was perceived to influence their opinions of the topic. Despite this, student interest in cannabis was reportedly increasing, especially where they were offered evidence-based presentations by AOD practitioners, and placements in services where cannabis was an issue for presenting clients.

#### Improving the quality of cannabis training

There was a view among respondents that current cannabis education was not fully meeting students' needs (Table I). Ambiguous training guidelines regarding coverage of specific drugs meant that many students graduated having little or no exposure to cannabis content. This is a cause for concern given the prevalence of cannabis use, associated risks, and increasing number of clients seeking assistance to reduce, manage or stop use (AIHW, 2011a, 2011b). Furthermore, lack of training on cannabis was seen to facilitate the perpetuation of myths that it is minimally harmful, and inadvertently reinforced student disengagement with the topic.

AOD trainers have a key role to play in providing information regarding cannabis, including addressing common misperceptions. Doing so can help to break the cycle of misinformation and disinterest currently hindering workforce development in this area. However, this requires external support in the form of evidence-based resources. As many trainers do not have advanced AOD qualifications, ongoing professional development is also highlighted as a priority to enhance and maintain the quality of AOD qualifications. Course relevance could also be improved by increasing the level of consultation and collaboration with local AOD services. Encouragingly, most respondents reported interest in providing input into the development of cannabis-specific training and resources, and implementing any resources developed.

Participants indicated they would welcome changes to the Training Package in relation to cannabis content. Guidelines offering more direction on the amount and focus of training on specific drugs, including cannabis, would be highly beneficial. Such revised qualifications could provide trainers with the necessary support, guidance and confidence to present cannabis-related material. In turn, this would prevent inconsistency and ensure that all students are assessed on their cannabisrelated knowledge. Given that cannabis is the most commonly used illicit drug in Australia (AIHW, 2011b) and internationally (UNDOC, 2012), and is associated with significant risk of harm (Fairman & Anthony, 2012; Solowij et al., 2011; Swift et al., 2012), it is imperative that AOD workers receive sufficient training in this area.

To this end, recommendations arising from this study are as follows:

(a) Create and/or disseminate resources to provide trainers with material to teach and assess cannabisrelated content. This includes materials to support face-to-face, online and distance delivery and RPL procedures.

- (b) Increased professional development for RTO staff to support delivery of cannabis-related training.
- (c) Establish an RTO network to facilitate the sharing of research, training materials, and assessment processes (including RPL strategies) to enhance the delivery of training on drugs, especially cannabis.
- (d) Make representation to the CSHISC on the need for greater guidance on drugs covered in training, including but not limited to cannabis.

#### Limitations

Although this study had a very good response rate (86%) allowing findings to be generalized widely, some limitations are noted. Two groups not included were RTOs who only offered the AOD Skill Set or Stand Alone units (but did not deliver full qualifications). The national database which comprised the sampling frame for this project did not identify Skill Set-only providers specifically (of whom there were  $\sim$ 180). Furthermore, over 500 organizations had one or more Stand Alone Units on their scope, and including these organizations was beyond the capacity of the study.

#### CONCLUSIONS

Cannabis-related content within VET sector AOD qualifications was generally very limited, and myths that it is a 'soft' drug continue to prevail. Given its high prevalence and rate of presentation within treatment settings, it is concerning that many AOD students have little or no exposure to cannabis training. All VET sector AOD qualifications should deliver consistent and accurate information regarding cannabis, and assess students' understanding in training and RPL processes. This would ensure all future AOD workers have the skills to deal with cannabis-related issues.

#### ACKNOWLEDGEMENTS

NCETA would like to thank all respondents who gave their time to complete the survey. Dr Ken Pidd, Tania Steenson, Stacey Appleton and Paula Wilson are also thanked for their various contributions to the development of the project.

**Declaration of interest:** The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article. This study was undertaken with financial support from the Australian Government Department of Health and Ageing and the National Cannabis Prevention and Information Centre.

#### REFERENCES

AIHW (2011a). 2010 National drug strategy household survey report. Canberra: Australian Institute of Health and Welfare.

- AIHW (2011b). Alcohol and other drug treatment services in Australia 2009–2010: Report on the national minimum data set. Canberra: Australian Institute of Health and Welfare.
- AIHW (2012). Alcohol and other drug treatment services in Australia 2010–2011: Report on the national minimum data set. Canberra: Australian Institute of Health and Welfare.
- Copeland, J., & Swift, W. (2009). Cannabis use disorder: Epidemiology and management. *International Review of Psychiatry*, 21, 96–103.
- CSHISC. (2008). Community services training package. Sydney: Community Services and Health Industry Skills Council. Retrieved http://training.gov.au/Training/Details/ CHC08.
- Deakin, E., & Gethin, A. (2007). *Training needs assessment of NGO alcohol and other drug agencies in NSW*. Sydney: NSW Network of Alcohol and Other Drug Agencies.
- EMCDDA (2007). *Annual report 2007: The state of the drugs problem in Europe*. Lisbon: European Monitoring Centre for Drugs and Drug Addiction.
- EMCDDA (2008). *A cannabis reader: Global issues and local experiences*. Lisbon: European Monitoring Centre for Drugs and Drug Addiction.
- Fairman, B.J., & Anthony, J.C. (2012). Are early-onset cannabis smokers at an increased risk of depression spells? *Journal of Affective Disorders*, 138, 54–62.
- Fergusson, D.M., Boden, J.M., & Horwood, L.J. (2006). Cannabis use and other illicit drug use: Testing the cannabis gateway hypothesis. *Addiction*, 101, 556–569.
- Fergusson, D.M., Horwood, L.J., & Beautrais, A.L. (2003). Cannabis and educational achievement. *Addiction*, 98, 1681–1692.
- Fergusson, D.M., Poulton, R., Smith, P.F., & Boden, J.M. (2006). Cannabis and psychosis. *British Medical Journal*, 332, 172–175.
- Fiellin, L.E., Tetrault, J.M., Becker, W.C., Fiellin, D.A., & Hoff, R.A. (2013). Previous use of alcohol, cigarettes, and marijuana and subsequent abuse of prescription opioids in young adults. *Journal of Adolescent Health*, 52, 158–163.
- Galvez-Buccollini, J.A., Proal, A.C., Tomaselli, V., Trachtenberg, M., Coconcea, C., Chun, J.,...Delisi, L.E. (2012). Association between age at onset of psychosis and age at onset of cannabis use in non-affective psychosis. *Schizophrenia Research*, 139, 157–160.
- Jacobus, J., Goldenberg, D., Wierenga, C.E., Tolentino, N.J., Liu, T.T., & Tapert, S.F. (2012). Altered cerebral blood flow and neurocognitive correlates in adolescent cannabis users. *Psychopharmacology*, 222, 675–684.
- Libretto, S., Salvatore, V., Weil, J., Nemes, S., Linder, N.C., & Jahansson, A. (2004). Snapshot of the substance abuse treatment workforce in 2002: A synthesis of current literature. *Journal of Psychoactive Drugs*, 36, 489–497.

- McLaren, J., Lemon, J., Robins, L., & Mattick, R.P. (2008). *Cannabis and mental health: Put into context.* Sydney: National Drug and Alcohol Research Centre (NDARC), University of New South Wales.
- Moore, B.A., Augustson, E.M., Moser, R.P., & Budney, A.J. (2005). Respiratory effects of marijuana and tobacco use in a U.S. sample. *Journal of General Internal Medicine*, 20, 33–37.
- Mulvey, K.P., Hubbard, S., & Hayashi, S. (2003). A national study of the substance abuse treatment workforce. *Journal of Substance Abuse Treatment*, 24, 51–57.
- O'Brien, S., Black, E., Degenhardt, L., Roxburgh, A., Campbell, G., de Graaff, B.,... White, N. (2006). *Australian drug trends: Findings from the Illicit Drug Reporting System* (*IDRS*). Sydney: National Drug and Alcohol Research Centre, University of New South Wales.
- Pidd, K., Roche, A., Duraisingam, V., & Carne, A. (2012). Minimum qualifications in the alcohol and other drugs field: Employers' views. *Drug and Alcohol Review*, 31, 514–522.
- Roche, A.M., & Pidd, K. (2010). Alcohol and other drugs workforce development issues and imperatives: Setting the scene. Adelaide: National Centre for Education and Training on Addiction (NCETA), Flinders University.
- Roche, A.M., & White, M. (2011). Alcohol and other drug qualifications and training providers database. Adelaide: National Centre for Education and Training on Addiction (NCETA), Flinders University.
- Roche, A.M., White, M., Duraisingam, V., & Adams, V. (2012). Trainers talking training: An examination of vocational education and training for the alcohol and other drugs sector in Australia. Adelaide: National Centre for Education and Training on Addiction (NCETA), Flinders University.
- Roxburgh, A., Hall, W.D., Degenhardt, L., McLaren, J., Black, E., Copeland, J., & Mattick, R.P. (2010). The epidemiology of cannabis use and cannabis-related harm in Australia 1993–2007. *Addiction*, 105, 1071–1079.
- SAMHSA (2012). Results from the 2011 national survey on drug use and health: Summary of national findings. Rockville, MD: Substance Abuse and Mental Health Services Administration.
- Solowij, N., Jones, K.A., Rozman, M.E., Davis, S.M., Ciarrochi, J., Heaven, P.C.,...Yucel, M. (2011). Verbal learning and memory in adolescent cannabis users, alcohol users and non-users. *Psychopharmacology*, 216, 131–144.
- Swift, W., Coffey, C., Degenhardt, L., Carlin, J.B., Romaniuk, H., & Patton, G.C. (2012). Cannabis and progression to other substance use in young adults: Findings from a 13-year prospective population-based study. *Journal of Epidemiology and Community Health*, 66, 26–32.
- UNDOC (2012). 2012 World drug report. Vienna: United Nations.