2

A brief intervention for help-seeking young adult and adolescent cannabis users with psychiatric comorbidity

findings and treatment manual

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table of contents

Executive summary

The aim of this study was to evaluate the efficacy of brief cognitive behavioural therapy (CBT) emphasising motivational interviewing in reducing cannabis use and cannabis-related problems in young adults experiencing a range of comorbid mental health difficulties. In a randomized controlled trial, 33 young people (aged 15-30 years) were randomly assigned following baseline assessment to either immediate treatment or a 3-month delayed-treatment control (DTC) condition. The intervention consisted of three sessions of motivational enhanced CBT. The primary outcome variables were grams of cannabis use per month, and severity of cannabis-related problems. There were no significant differences in the outcome measures between participants in the immediate treatment group and those in the DTC group at 3-month follow-up; however, both groups showed a small but statistically significant decrease in cannabis use and cannabis-related problems. These results suggest that cannabis-dependent individuals with comorbid mental illness may require more sophisticated interventions than brief CBT.

Introduction

Background

This study was funded by the Australian Government Department of Health and Ageing. The project was a collaboration between the National Cannabis Prevention and Information Centre within the University of New South Wales, and the Brain and Mind Research Institute within the University of Sydney. It arose from earlier work conducted by the investigators on brief cognitive-behavioural and motivational interviewing-based interventions for cannabis use. The function of the project was to address the need for treatment services for young individuals who use cannabis and also have a co-existing mental health diagnosis. The project involved the development and preliminary evaluation of a brief intervention specifically designed for such a population. The primary aim of the study was to determine the suitability of a brief intervention with cannabis users when another mental illness is present. This technical report presents data regarding the feasibility of conducting research in this population, as well as cannabis-related outcome data associated with brief intervention. In addition, the treatment manual that was developed and tested during the course of this study is included.

Epidemiology of use and current treatment options

Cannabis is the most widely used illicit substance in the world. Approximately 9.1 per cent of Australians aged 14 years or older were estimated to have used cannabis in 2007, with 25.8 per cent of these individuals reporting their use to be problematic (AIHW 2008a). Chronic cannabis use is associated with a range of cognitive deficits including attention, memory, learning, executive functioning and psychomotor speed impairments (Pope & Yurgelun-Todd 2006; Solowij et al. 2002). There is emerging neuropsychological evidence that individuals with chronic cannabis use may have impaired ability to resolve conflict, which may result in decreased ability to refrain from future substance misuse (Battisti et al. 2010; Kalivas & Volkow 2005). In addition, research indicates that adolescents and young adults may have a greater vulnerability to the adverse impacts of cannabis, as brain maturation continues throughout early and possibly middle adulthood (Jager, Block, Luijten, & Ramsey 2010; Spear 2000).

Relatively few people who experience cannabis-related problems seek treatment. Within Australia, approximately 21 per cent of cannabis-dependent individuals seek treatment for cannabis use (Copeland 2004). While these rates are comparable to treatment seeking by users of other drugs of abuse (Compton, Thomas, Stinson, & Grant 2007), they are well below the estimated treatment-seeking rates for other psychiatric disorders (e.g., depression 60%, generalised anxiety disorder 50%) (Compton et al. 2007). In particular, treatment engagement among young people has been suggested to be quite low, despite reported increases in treatment uptake among adults (see Copeland 2004). Even when in treatment, young people may be reluctant to acknowledge that they have a problem with cannabis. Diamond, Leckrone, Dennis, and Godley (2006) found that only 20 per cent of their treatment sample believed they had a problem, despite almost all youth meeting criteria for cannabis abuse or dependence. Such research suggests that there is a clear need for designing efficacious interventions for cannabis dependence that are engaging and likely to be taken up and adhered to, particularly by young people.

Time-limited, brief interventions may be efficacious in engaging young people resistant to long-term treatment (Martin & Copeland 2008). Brief treatments have shown promise among both adult and adolescent cannabis users with research to date finding it effective in reducing the quantity and frequency of use and a number of cannabis-associated problems

(Carroll et al. 2006; Copeland, Swift, Roffman, & Stephens 2001; Dennis et al. 2004; Kamon, Budney, & Stanger 2005; Marijuana Treatment Project Research Group 2004; Martin & Copeland 2008; Martin, Copeland & Swift 2005; Stephens, Roffman & Curtin 2000; Stephens et al. 2004). These studies have typically compared a brief intervention (usually ranging from one to six sessions) to a delayed treatment control (DTC) condition and are largely based upon CBT and motivational enhancement therapy (MET). For example, a study by Martin and Copeland (2008) found that individuals who received a single assessment session combined with a MET-based feedback session had greater reductions in cannabis use and the number of DSM-IV criteria endorsed for cannabis dependence in comparison to those in a DTC condition. Unfortunately, brief intervention studies have not thoroughly assessed participants' psychiatric profiles, and thus, it remains unknown whether brief cannabis interventions are effective for individuals with concurrent mental health issues. The dearth of research in this area suggests that brief cannabis interventions may be efficacious for reducing cannabis use in those with comorbid externalising disorders. Dennis et al. (2004) found a brief intervention to be effective in reducing frequency of cannabis use and symptoms of dependence and/or abuse in young people with self-reported psychiatric comorbidity. The majority of this comorbidity was confined to externalising disorders, such as conduct disorder, attention deficit-hyperactivity disorder, and alcohol use disorders. Thus, it remains unknown if brief interventions are effective when comorbid internalising disorders are present.

Research suggests that more than half of young adults with cannabis dependence or abuse present with at least one comorbid psychiatric diagnosis, particularly internalising disorders such as depressive and anxiety disorders (Dorard, Bethoz, Phan, Corcos, & Bungener 2008; Troisi, Pasini, Saracco, & Spalletta 1998). There is consequently an urgent need for methods of engaging young people with co-occurring cannabis dependence and mental health problems, particularly internalising disorders. The current study sought to develop and deliver a brief intervention for young people with cannabis dependence and comorbid mental illness based on MET and CBT. Participants were either treatment-seekers for cannabis-related difficulties and/or currently receiving treatment for their co-occurring mental illness and referred by their mental health professional.

The brief intervention approach

Prior to the intervention, a comprehensive assessment was conducted that included self-reports and semi-structured clinical interviews. Specifically, substance use patterns and problems, co-occurring mental health problems, support networks, and client values were determined. This information was collated for the preparation of a Personalised Feedback Report (PFR) that was reviewed during the first of three, weekly Motivational Interviewing (MI) enhanced CBT sessions. Sessions were delivered in a non-judgemental environment in which the participant was considered the expert in their own life and encouraged to make their own informed choices about their cannabis use. Sessions focused on psychoeducation, increasing insight into cannabis-related problems and high risk situations, and challenging maladaptive cognitions.

During the first therapy session, the PFR was reviewed in a feedback style whilst incorporating MI strategies. A specific focus was placed on examining whether the individuals' current substance use behaviours were consistent with their personally held values. If value-inconsistent behaviours were identified, MI strategies were incorporated to explore ambivalence around changing behaviours. Participant behaviours that were consistent with change behaviours were reinforced and inconsistent behaviours were examined for their workability whilst avoiding argumentation and resistance. Suitable strategies for successful change also were explored. A discussion of current prominent mental health symptoms and how these symptoms may interact with cannabis use were subsequently discussed.

Sessions two and three focused predominantly on skill building. Session two focused on goal setting and understanding the concept of how situations, thoughts, feelings, physical sensations, emotions and behaviours interact. MI continued to be used, when applicable; however, the focus was predominantly on discrete skill-building that would aid the participant in controlling their cannabis use. Homework was set for examining how situations, thoughts, feelings, and behaviours interact and trialling discrete goal-setting related to cannabis cessation, reduction, and/or control. Session three primarily aimed to review prior skills learnt, examine homework outcomes, maintain/build motivation to change cannabis use behaviours, and train in additional coping skills (e.g., managing cravings). Specific focus was placed on managing cannabis use within the context of the ongoing mental illness comorbidity and how to approach change in cannabis use behaviours without deleteriously impacting upon this.

Study aims and hypotheses

The study aimed to develop and deliver a brief intervention for a young population of cannabis users with comorbid Axis I disorders. It was intended that this would serve as an adjunct to treatment-as-usual for the Axis I disorder, with the goal to reduce cannabis use behaviour and disability associated with cannabis use.

Consistent with our aims and research design, we predicted that:

- the immediate treatment group would have a comparatively greater reduction in their cannabis use and cannabis-related problems than the delayed treatment control group at 1 and 3 months post-baseline

Recruitment

Inclusion criteria

(i) aged 14-30 years;
(ii) at least weekly cannabis use in the month prior to assessment;
(iii) diagnosis of cannabis dependence;
(iv) comorbid Axis I diagnosis (other than substance dependence);
(v) fluency in English.

Exclusion criteria

(i) more than weekly use (on average) of an illicit drug (other than cannabis) in the last 90 days;
(ii) more than 28 standard alcoholic drinks (on average) per week in the past 90 days, alcohol dependency greater than mild, or engaging in drinking levels that were deemed unsafe at time of baseline assessment;
(iii) substance use treatment in the past 90 days;
(iv) evidence of cognitive impairment that would indicate an inability to participate in assessment and/or treatment sessions;
(v) inability to attend appointments due to physical distance from treatment centre;

Recruitment sources

The majority of potentially eligible participants were referrals from clinicians (i.e., general practitioners [GPs], psychiatrists, social workers, occupational therapists, psychologists, and counsellors) located within the Brain and Mind Research Institute, a specialised referral and treatment service where the intervention was conducted. Additional participants that were recruited via advertisements were integrated into the treatment service.

Methods

Design

Participants were recruited via referral from a specialised service for the assessment and early intervention of mental health problems in young people, as well as via advertisements placed within local media. Based upon a screening interview (either face-to-face or via telephone), 55 individuals were deemed potentially eligible and were booked for a baseline assessment. At baseline assessment, participants were taken through an informed consent form which detailed their rights as participants, the voluntary nature of their participation, and the limits of confidentiality. Participants subsequently provided written informed consent to take part in the study and those participants identified as eligible by the conclusion of the baseline assessment were randomly allocated to an immediate treatment group (IT) commencing the following week (immediate treatment; IT), or a delayed treatment control group (DTC). The DTC group was offered the treatment after the completion of the three month follow-up assessment. Treatment consisted of three weekly sessions and follow-up assessments were conducted at one- and three- months post-baseline. Participants were telephoned one week prior to and the night before each of the scheduled appointment times as a reminder. Participants were reimbursed with gift vouchers (to the value of one hundred dollars in total) for their time and travel related to the three assessments.

The baseline assessment session

During the baseline assessment, the therapist spent time building rapport with the individual, explaining the details of the project, and responding to any concerns raised. A detailed clinical interview was conducted to determine DSM-IV Axis I diagnoses using the Structured Clinical Interview for the DSM-IV-TR Axis I Disorders Research Version (SCID-RV) (First, Gibbon, Spitzer, & Williams 2002) and the Structured Clinical Interview for the DSM-IV-TR Childhood Disorders (KID-SCID) (Hein et al. 2004). Only the relevant sections of the SCIDs were administered based on participants' responses to the SCID screener. The five-item Severity of Dependence Scale (Gossop et al. 1995), which has been found to be a useful indicator of cannabis dependence among young cannabis users (Martin, Copeland, Gates, & Gilmour 2006), provided an additional measure of cannabis severity. Detailed information on cannabis use in the past three months was obtained using the Timeline Follow-Back (TLFB) method (Sobell & Sobell 1996). The

TLFB is a semi-structured calendar-based interview which uses memory aids (e.g., birthdays and special events) to increase the accuracy of self-report. A variation on this method was used that included the identification of quantity of use utilising a cannabis substitute (marijuanilla). Additional measures of cannabis-associated impacts included the Cannabis Problems Questionnaire (CPQ) (Martin, Copeland, Gilmour, Gates, & Swift 2006), the Sheehan Disability Scale (ShDS) (Sheehan 1986), and the Drug-Taking Confidence Questionnaire (DTCQ) (Sklar & Turner 1999). Severity of concurrent psychological distress was assessed by the Depression, Anxiety, and Stress Scales (DASS; Lovibond & Lovibond 1995).

For purposes of the Personalised Feedback Report (PFR), additional clinical instruments were administered (see Appendix B for list of measures). It should be noted that inadvertently only the first 21 items of the 32-item University of Rhode Island Change Assessment (URICA) (McConnaughy, Prochaska & Velicer 1983) were administered for the PFR. Scores were adjusted to adequately reflect clients' stages of change.

The intervention sessions

The content of the sessions is briefly described below. For a more detailed account of the session content and assessment materials, please refer to the treatment manual (included in Appendix A).

Session one: The feedback session

The feedback session was held approximately one week after the initial assessment session. Leading up to session one, the clinician prepared the PFR based on the information obtained during the baseline assessment (the PFR and scoring manual are included in Appendices B and C respectively). The PFR was used to provide the individual with feedback regarding the amount of cannabis they used; their cannabis use in comparison to age-specific normative data; and the interactions between their cannabis use and individual goals. This feedback was delivered in a motivational interviewing style which aimed to explore ambivalence and promote problem recognition and enhanced motivation to change. The use of an educational booklet, "*What's the deal? Cannabis facts for young people*," was included within the session and was developed by the National Cannabis Prevention and Information Centre at the University of New South Wales, Australia. The clinician discussed the key points in the booklet that were most pertinent to a participant's situation. Participants also were provided with opportunity for further questions and given a copy of the booklet to take home and read.

Session two: Skill-building

This session was held approximately one week after session one and provided participants with pragmatic strategies for controlling their cannabis use. The session focused on CBT skill training including increasing non-cannabis use behaviours and recognising the interaction between situations, thoughts, feelings, physical sensations, and behaviours. The session included a discussion of cannabis dependence, recognition of personal triggers/cues for use, goal setting, planning for change, and behavioural self-monitoring. In addition, the way in which cannabis use can interact with mental illness comorbidity was explored. Homework was set to practice skills in recognising the relationship between situations, thoughts and feelings.

Session three: Skill-building and review

The final session was held approximately one week later and reiterated the information and skills learnt in previous sessions, reviewed homework and provided additional skills in improving control over cannabis use. Values were revisited and MI skills were implemented when necessary to increase motivation levels. Skills in managing cravings and relapse prevention were also discussed, along with any changes in comorbid symptomatology. When necessary, appropriate referral pathways were made available to other health service providers. Participant feedback was also sought, both face-to-face and via anonymous questionnaire, on the structure, flow, content and nature of sessions.

Data analysis

The data presented below provides a description of the sample, followed by an analysis of outcome. Means and confidence intervals are reported for continuous variables, while categorical data is reported in terms of frequencies and percentages.

For outcome analyses, the effectiveness of the randomisation on possible confounding variables (gender, age, number of years of education and DTCQ) was assessed using independent samples *t*-test. With the exception of the DTCQ, these variables were not statistically significant across treatment groups (p› .05 in each case). Outcome variables were assessed for normality using QQ plots. Variables relating to the amount of cannabis use exhibited positive skewness. As positively skewed data often benefits from logarithmic transformation (Oliver, Johnson & Marshall 2008), these variables were log transformed and rechecked for normality. Frequency of cannabis use

variables remained negatively skewed. This variable was then recalculated to represent the frequency of non-cannabis use (resulting in positively skewed data) and then log transformed. The normality assumption was reasonable after this procedure. All summary data represented in the report have been back transformed to their original scales.

The association between treatment groups and each outcome variable over the study's three time points (baseline, 1 month follow-up, 3 month follow-up) was assessed using a mixed-effects model. Longitudinal studies often suffer from loss to follow-up and a mixed model approach allows for the most efficient use of available data. The covariance structures considered for within-subjects effects were unstructured, compound symmetry or autoregressive with lag 1. The covariance structure resulting in the smallest Akaike Information Criterion was chosen as the best model (Ngo & Brand 2002). In addition to main effects, each model included the interaction between time points and group, and the covariate DTCQ to account for imbalance in the randomisation.

Results

Participant demographics and clinical characteristics

Of the 55 potentially eligible individuals, 36 presented for the baseline assessment and 33 enrolled in the study (n = 1 lost interest in the study; n =2 did not have a co-occurring mental health diagnosis). Seventeen participants were male and 16 were female. Table 1 shows the overall participant demographics, as well as participants' self-reported distress. At baseline, participants reported on average severe levels of depression, anxiety, and stress.

Table 1 Demographic information and self-reported distress (N = 33)

Variable	Mean (CI)	n (%)
Australian born		28(84.8%)
ATSI		1 (3.0%)
Living situation Alone Family Friends		 4 (12.1%) 20 (60.6%) 9 (27.3%)
Current legal problems		3 (9.1%)
Employed/Studying		22 (66.7%)
Dating/Married		14 (42.4%)
Age	22.82 (21.62-24.01)	
Education (years; Kindergarten +)	13.29 (12.66-13.92)	
DASS-Depression	24.54 (21.36-27.73)	
DASS-Anxiety	19.21 (15.34-22.89)	
DASS-Stress	26.97 (23.46-30.48)	

Note. ATSI = Aboriginal or Torres Strait Islander; DASS = Depression Anxiety Stress Scale.

All participants met criteria for cannabis dependence. Two participants in the study met cannabis dependence criteria for mild severity, 18 met criteria for moderate severity, and 15 met criteria for severe dependence, as determined by the SCID-RV (First et al. 2002). In most cases a diagnosis of cannabis dependency was secondary to another diagnosis. All participants had at least two Axis I disorders (in accordance with inclusion criteria) with twenty-six having at least three (78.8%) and six having at least four (18.2%). Table 2 shows co-occurring diagnostic information as determined by SCID-RV interview (First et al. 2002). As can been seen, approximately four-fifths of the sample had at least one anxiety disorder, over half had a mood disorder, and a quarter had a psychotic disorder.

Table 2 Distribution of Axis I Disorders determined by SCID-I clinical interview (*N* = 33)

Disorder	Count (%)
Cannabis dependence	33 (100.0%)
Other substance use disorders	8 (24.2%)
Attention Deficit Hyperactivity Disorder	1 (3.0%)
Anxiety disorders	27 (81.8%)
Mood disorders	20 (60.6%)
Psychotic disorders	9 (27.3%)

Note. Data for diagnostic categories reflect the total number of disorders of that type.

Table 3 shows medications at time of assessment. Although participants were not excluded on the basis of current pharmacotherapy, entry to the study was delayed until 1 month after commencing any new medications.

Table 3 Medication use (*N* = 33)

Variable	n (%)
Anti-depressant	
SSRI	5 (15.2%)
Tricyclic	1 (5.9%)
Tetracyclic	1 (5.9%)
Atypical Anti-psychotic	0 (0.0%)
Benzodiazepine	0 (0.0%)
CNS stimulant	0 (0.0%)

Note. SSRI = Selective Serotonin Reuptake Inhibitor; CNS = Central Nervous System.

Non-cannabis drug use

Table 4 depicts non-cannabis drug use. Current substance use pertained to the 90 days prior to the baseline assessment. Polydrug use was frequent for alcohol, tobacco, and ecstasy.

Table 4 Non-cannabis drug use (*N* = 33)

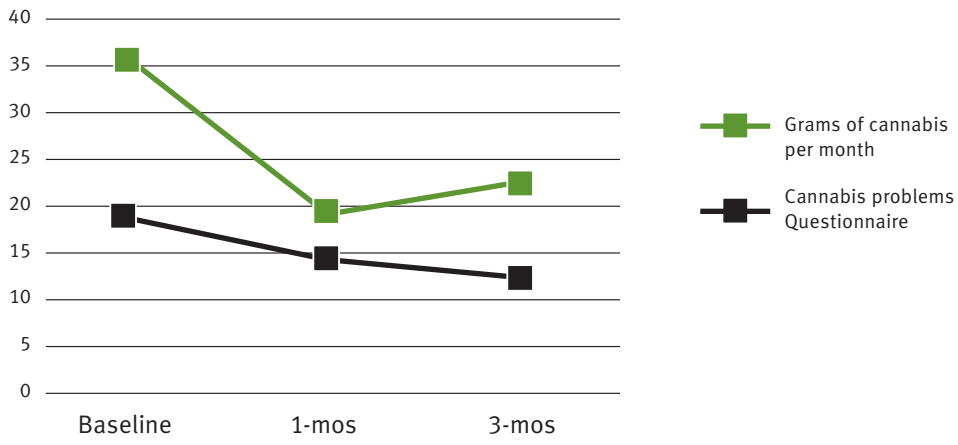
Variable	Mean (CI)	n (%)
Current tobacco cigarette smokers		27 (81.8%)
Days per week	6.06 (5.26-6.85)	
Number of cigarettes per day	9.33 (6.40-12.27)	
Current alcohol drinkers		30 (90.9%)
Days per week	2.39 (1.63-3.15)	
Standard drinks per day	6.17 (4.79-7.56)	
Current ecstasy users		12 (36.4%)
Current hallucinogens users		8 (24.2%)
Current amphetamines users		7 (21.2%)
Current cocaine users		2 (6.1%)
Current Benzodiazepine users		2 (6.1%)

Results: Randomised controlled trial

Of the 33 participants that entered into the study, 18 were randomised into IT. Seventy-eight per cent (n=14) of IT participants completed the one-month follow-up assessment and 67 per cent (n=12) completed the three-month assessment. Seventy-three per cent (n=11) of the DTC participants completed the one-month follow-up assessment and 60 per cent (n=9) completed the three-month assessment.

There were no significant interactions of Group and Time, indicating no gains of treatment over assessment alone (p› .20 in each case). In other words, there were no significant improvements in the treatment group in comparison to the DTC group on any of the outcome measures. However, there was a main effect of Time across all three time-points for grams of use per month ($F(2,41) = 3.9$, $p = .03$) and for the CPQ ($F(2,30) = 9.9$, $p = .0005$). Figure 1 depicts these differences in cannabis quantity and cannabis problems from baseline to follow-up.

Figure 1 Quantity of cannabis use was assessed by a cannabis substitute (marijuanilla).



Discussion and Conclusion

In 2007 it was reported that more than 9 per cent of Australians aged 14 years or older had recently used cannabis with approximately a quarter of these experiencing problematic use (AIHW 2008a). Despite apparent widespread cannabis use and associated problems, there are few available treatment options that specifically target young cannabis users, and fewer that accommodate for comorbid psychiatric symptomatology. This study represents an attempt to develop a protocol that may be amenable to such a high risk group and to test its efficacy. To be effective, an intervention must be able to attract participants, retain them in treatment, provide significant improvements on outcome variables, and be acceptable to the intervention participants. While it appears that the intervention was successfully able to recruit participants and engage them in treatment (all but one of the 18 IT participants completed the three sessions [94.4%]), it was unsuccessful in producing changes in outcome measures over and above the changes noted within the DTC condition. Anecdotal reports from IT participants suggest that treatment was helpful but that many more sessions were required and desired.

The study was designed to be flexible with regard to recruitment and referral. Young people could refer themselves, or they could be referred by a clinician (e.g. psychiatrist, psychologist, GP), family member or friend. This made the intervention accessible to treatment and non-treatment seekers alike. The recruitment process was mindful of the mental illness comorbidity and possible impacts of only brief therapeutic contact upon this. Consequently, referrals, when appropriate, were made to other mental health services and participants were encouraged to make use of such support as determined via assessment with the trial coordinator; a clinician experienced in working with individuals with substance use and comorbid mental illness.

Findings from the study indicate that assessment alone may be beneficial in reducing cannabis use among cannabis dependent young people with a comorbid non-substance use disorder. An impact of assessment alone on the level of substance use has been observed within other check-up-based studies (e.g., Copeland et al. 2001; Martin & Copeland 2008; Miller & Sovereign 1989). The change in quantity of use observed within the present study (from approximately 35 to 20 grams per month as measured by the cannabis substitute), while statistically significant, shows that use continued to be high. Therefore, the clinical impact of this change is modest at best.

A caveat of the lack of significant outcomes however, is the high missing data from follow-up assessments. Inability to make contact with participants was the primary cause of missing data. Despite the use of statistical measures that allow for missing data, conclusions drawn from this study must be treated with caution.

Despite a lack of change in cannabis use and associated impact, there were apparent benefits from administration of the brief intervention. These relate to recruitment and treatment adherence, engagement in mental health services, and working with other health/mental health clinicians. As previously stated, individuals were willing to participate in the intervention. This suggests that there is a desire for treatment services that can address both cannabis use and comorbid mental health difficulties. The high retention rates further support this notion, with positive experiences of the treatment process, irrespective of outcomes, possibly increasing the likelihood for future engagement with services as needed. Lastly, the establishing of good relationships with other health and mental health clinicians indicates a willingness of these third parties to refer patients into cannabis treatment interventions.

The primary positive aspects of this study relate to participant engagement in a treatment service and willingness to examine the impact of cannabis use. Given the previously mentioned deleterious effects upon mental health amongst individuals with comorbid diagnoses, the results of this study are a clear sign that more extensive treatments are necessary for this population. It does not appear to be effective to apply an intervention that has some utility for non-psychiatric substance-using populations to those with comorbid mental health disorders. The brief intervention described in this report indicates that there is a strong need for treatment services for young people with a cannabis use disorder and coexisting mental illness.

Products

The brief cannabis intervention clinical treatment manual was the primary product from this research study (Appendix A). Detailed instructions are provided as to how to implement the intervention, including appropriate language to use, examples, metaphors, clinically-appropriate psychometrics, and information on the application of discrete psychotherapeutic skills.

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Appendix A – The brief cannabis intervention for young adults treatment manual

Overview of the brief cannabis intervention for young adults

This manual provides a guide for implementing the brief cannabis intervention for young adults and includes both the clinical content of the treatment and the processes involved.

Aims and objectives

The specific objectives of the brief cannabis intervention for young adults are:

(i) to enhance motivation and to reduce/cease cannabis use among young adults with a range of concurrent mental health difficulties
(ii) to evaluate the effectiveness of a three-session motivational interviewing (MI)-enhanced cognitive behavioural therapy (CBT) in comparison to a three month delayed treatment control (DTC) in reducing cannabis use and cannabis-related problems

Participants

Inclusion criteria

(i) aged 14-30 years;
(ii) at least weekly cannabis use in the month prior to assessment;
(iii) diagnosis of cannabis dependence;
(iv) comorbid Axis I diagnosis (other than substance dependence);
(v) fluency in English.

Exclusion criteria

(i) more than weekly use (on average) of an illicit drug (other than cannabis) in the last 90 days;
(ii) more than 28 standard alcoholic drinks (on average) per week in the past 90 days, alcohol dependency greater than mild; or engaging in drinking levels that were deemed unsafe at time of baseline assessment;
(iii) substance use treatment in the past 90 days;
(iv) Evidence of medical impairment, cognitive impairments (e.g., intellectual disability), or acute psychotic conditions that would indicate an inability to participate in assessment and/or treatment sessions.

Recruitment

Young adults were recruited for the study via the Brain and Mind Research Institute (BMRI), which provides clinical services for young people with mental health difficulties. These young adults arrived at the BMRI via 'Headspace' services in Sydney or via direct referral from external agencies. Headspace is Australia's national youth mental health foundation, for which BMRI is the lead agency in NSW. Additional participants that were recruited via advertisements within local media were integrated into the treatment service.

Methodology

The general treatment approach is that of a series of individual, in-person sessions that provide education about cannabis-related harms and encourage participants to make informed choices about their cannabis use. These sessions are conducted in a non-judgmental atmosphere and there is no overt attempt to get participants to alter their cannabis use.

Procedure

Young adults who arrived at BMRI's services were routinely assessed via clinical, psychosocial and neuropsychological measures. If more than one month had passed since BMRI assessment, young adults were re-assessed on measures relevant to the study.

From these assessments, individuals who appeared eligible were contacted and informed of the study. Interested individuals were further screened (either face-to-face or via telephone), by a NCPIC-employed Independent Evaluator (IE; see Appendix B for the remaining screening measures) and, if deemed eligible, offered a place in the study.

At baseline assessment, participants were guided through an information and consent form that detailed their rights as participants, the voluntary nature of their participation, and the limits to confidentiality. Participant queries were addressed and written informed consent obtained. For young people aged 14 and 15 years, whose parents were involved in and aware of their BMRI treatment, parental (or guardian) consent was obtained via a consent form.

Following the receipt of consent, the IE assessed the young adult using the baseline assessment measures. After confirmation of eligibility, the IE booked appointments to re-assess the young person four weeks and three months thereafter. Randomisation subsequently took place with the aid of a random number generator and those in the treatment group

commenced the brief intervention within one week of the assessment. Participants in the control condition were wait-listed for three months, during which they were assessed at four weeks, and after which they were re-assessed and offered the brief intervention. They received treatment as usual from BMRI during wait-listing and were assessed at four weeks and three months following their initial three-month follow-up.

The brief Intervention: The intervention involved three weekly individual sessions. Leading up to session one, the clinician prepared the Personalised Feedback Report (PFR) based on the information obtained at the baseline assessment. Session one involved rapport building, a brief description of the intervention, and a review of the PRF. Session two focused on identifying young adults' high risk situations, in terms of their external cues and their internal thoughts, emotions and physical feelings. During session three, participants were encouraged to set a change date and utilise self-monitoring to increase their likelihood of successfully meeting their change goal. Additional coping strategies (e.g., managing cravings) were taught and there was a review of prior skills learnt.

Four-week follow-up assessment: Participants in both groups were re-assessed by the IE four weeks following their initial assessment.

Three-month follow-up assessment: The participants in both groups were re-assessed by the IE three months after their initial assessment. Following this, participants in the control group were offered the brief intervention. They were then similarly assessed four weeks and three months after treatment.

The IE telephoned the young adults one week prior to and the night before each of the scheduled appointments above as a reminder. Participants were reimbursed with gift vouchers for their time and travel related to the three assessments: $50 for baseline, $20 for four-week follow-up, and $30 for three-month follow-up.

Session One

Approximate length. 60 minutes

Rapport building (approximately 5 minutes). Welcome the young adult and spend a short time establishing rapport. Engage the client in discussion about their background and interests (e.g., "Tell me a little bit about what you do every day," or "What kinds of things do you like doing?") and, when appropriate, use self-disclosure to assist the client get to know you a little.

Ask the client to tell you about their cannabis use and mental health difficulties. A detailed and comprehensive assessment of their specific symptoms is not necessary; rather, the aim is to provide an opportunity for the clients to open-up about themselves. Follow by asking whether cannabis has had an impact on their life. Questions such as, "To what extent has cannabis affected your social life? Your family life? Your work?" may be helpful in prompting this information. In addition, explore sources of life stress beyond the clients' cannabis use and mental health difficulties. Commence with a general introductory question such as, "Besides the cannabis and problems associated with its use, are there any other things going on that are affecting your quality of life?" This can be followed-up with more specific questions about key areas of likely stress including family, work, friends, and money. When stressful topics are discussed, express empathy and legitimise client concerns (e.g., "I can imagine how difficult that must be for you").

Explanation of the therapy (approximately 5 minutes). Describe the intervention process and address client questions or concerns. Encourage the young adults to reflect on the treatment process (e.g., "Do you have any feelings about doing this?") and briefly explore any arising feelings. The following statement outlines an example treatment introduction. It is not necessary to read it, or any other, statement verbatim. Therapist's language can be flexible, ensuring that the key meaning of the information is retained.

"This is a three-session program for young people who smoke cannabis and have mental health difficulties who might want a chance to talk about their cannabis use without worrying about feeling any pressure to change. Your cannabis use will be discussed in an informative and educational way that will allow you to make your own decisions about whether you want to make any changes. We will also provide you with some strategies for managing your use. You may choose to use these strategies or not. We are also interested in hearing your feedback about what you found more or less helpful in this program.

"In the remainder of this session, we will go through a feedback report that was prepared specifically for you, based on the responses you gave during assessment. This will give you a chance to see how you compare with other young people, and it will summarise a lot of what you think and feel about your cannabis use and mental health difficulties. You get to take a copy of this with you.

"In the second session, you will learn about how triggers in the world around you, as well as in the world of your inner thoughts, emotions and physical feelings, can lead you to use cannabis. You will then begin to identify your own inside and outside world influences on your cannabis use.

"In the third and final session, we will look at the good and not so good things about your cannabis use, and go through some strategies for changing your use. Again, it's your choice whether you use these strategies. These strategies will involve helping you to identify and control or avoid situations that may lead to cannabis use. To help you with this, you will be introduced to self-monitoring, which will involve you tracking your cannabis use and your reasons for using."

Psychoeducation (approximately 15 minutes). Present the "*What's the deal? Cannabis facts for young people*" booklet, summarise the bullet points in bold and ask the participant to read the booklet before the next session. During the PFR, relate back to the relevant sections of the booklet in greater detail.

Personalised feedback report (approximately 25 minutes). Have two copies of the PFR ready (one for the young person and one for you) and briefly outline each section prior to a more detailed discussion. During this process, seek elaboration from the participant (e.g., "Tell me more about this"). Paraphrasing reflections can be utilised to demonstrate your attention and interest. Listen for expressions of motivation to change and, when these are noticed, feed them back to the young person as reinforcement.

The young person may not have a complete understanding of the terms used in the PFR, and thus, the therapist can utilise direct questions (e.g., "Do you know what I mean by tolerance/dependence/withdrawal?") to clarify their understanding. When relaying the young person's scores, once again be sure to query their understanding. For example, if the young person gets an 8/15 for the *Severity of Dependence* item, it could be asked, "What do you think a score of 8 out of 15 means?"

It is possible that the young adult may express some change talk during discussion of the PFR. In this case, clinical judgement should be used to decide whether to explore the change talk at that point in time or return to it later. Incorporation of an empathy statement will likely aid the latter option. For example, "I'm hearing that this [their use] isn't working for you right now and isn't consistent with how you want to be. Is it okay if we return to that in a couple of minutes?" Refer to the PFR manual (Appendix C) for more details.

Evoking change talk (use throughout the session). Utilize motivational interviewing strategies to evoke change talk. Clinical judgement should be utilised to decide which strategies are best suited for the young adult, given the information they previously provided. Strategies for evoking change talk are highlighted below.

Strategies for evoking change talk

1. Ask evocative questions

Ask open questions which allow for answers involving change talk. For example, "Why do you want to cut down?"

2. Ask for elaboration

When a change talk theme arises, ask for more details. For example, "In what ways?" or "Talk about that."

3. Ask for examples

When a change talk theme arises, ask for specific examples. For instance, "When was the last time that happened?", "Give me an example" or "What else?"

4. Look back

Ask about a time before the current concern emerged and how things were better or different at that time.

5. Look forward

Ask what may happen if things continue as they are. It may be helpful to utilise the miracle question: "If you were 100% successful in making the changes you want, what would be different?" or "How would you like your life to be five years from now?"

6. Query extremes

Employ questions such as "What are the worst things that might happen if you don't make this change?" or "What are the best things that might happen if you do make this change?"

7. Use change rulers

Ask, "On a scale from zero to ten, how important is it to you to [target change] – where zero is not at all important, and ten is extremely important?" To follow-up, it can be asked, "and why are you at ____ and not zero? What might happen that could move you from ____ to [higher score]?" Instead of using the words "how important" (which highlights a need), you could also ask how much the young person wants (desire), how confident they are they could (ability), or how committed they are (commitment) to ____. Try to avoid asking "how ready are you?" as this tends to be confusing combining competing components of desire, ability, reasons and need.

8. Explore goals and values

Inquire about the person's guiding values (e.g., what they want in life). The Valued Living Questionnaire II (VLQ-II) (Wilson, Sandoz, Kitchens, & Roberts 2010), administered during the baseline assessment, may be utilised for this purpose. To draw on the questionnaire, select the values that are rated as very important but less consistent with their current life. You may also select values that appear to be inconsistent with the young adult's cannabis use. Explore how their cannabis use fits in with their goals. Does it help realise a goal or value, interfere with it, or is it irrelevant?

9. Come alongside

Explicitly side with the negative side of ambivalence. For example, "Perhaps _____ is so important to you that you won't give it up, no matter what the cost."

Summing up (approximately 5 minutes). Summarise the session by reflecting on the information covered in the PFR and the client's readiness to change. Schedule the next session and remind the participant to read the *"Cannabis facts for young people"* booklet. Ask the young adult to attend their next session ten minutes early to complete questionnaires that will help track their progress.

Session Two

Approximate length. 60 minutes

Pre-session measures. Provide the URICA (McConnaughy et al. 1983), the DTCQ-8 (Sklar & Turner 1999) and the VLQ-II (Wilson et al. 2010) for the young adult to complete.

Rapport building/Check-in (approximately 5 minutes). Take a few minutes to ask the young adult how they have been during the past week. Ask about their thoughts and reactions to the information learnt last session and in the "*Cannabis facts for young people*" booklet.

Note to clinician: The implementation of this session will be dependent upon the participant's stage of change. For instance, if the young person is in the precontemplative or contemplative stage, there would be a greater focus on increasing motivation. If they are in the preparation or action stage, there would be greater focus on functional analysis. At least part of this session should be dedicated to functional analysis to provide the young person with an understanding of how their cannabis use is activated.

Identifying high risk situations: Developing self-awareness (approximately 40 minutes). The goal of session two is to conduct a functional analysis of the triggers and consequences of the young person's cannabis use. It may be helpful to convey key information from this session using a dry erase board and you may wish to ask the young person to write on the board. The following provides an example of how to introduce the session:

"Should you decide to change your cannabis use, it can be helpful to learn how to *"win out"* every time you face situations in which you would usually use. To keep this up, you must learn how to control your own behaviour – in other words, how to manage yourself. Self-management skills are tools you can use to control your own behaviour and the high-risk situations you run into. In this session, you will learn how to spot all the things that lead you to use cannabis; in the next session, you will learn how to stop or change them. As with any other tool, learning to use self-awareness tools requires practice. Like learning to ride a bike, at first it is hard and you have to think a lot about it, but with regular use it becomes automatic and effortless."

Self-awareness model

Explain that what we do (our behaviour) is influenced by what is around us (different situations, events or people), what is inside us (thoughts, sensations and emotions), and what follows our behaviour (the result or outcome). Illustrate, using the 'Hot cross bun example sheet' (see page 18) that this interaction between factors can lead to a pattern of smoking cannabis.

Explain that feeling a certain way (e.g., sad, lonely or bored), thinking certain things (e.g., "I can't handle this"), having certain physical sensations (e.g., tightness or even cravings), or seeing certain people (e.g., friends who smoke), can trigger or cue cannabis use behaviours. At this point, a practical example may be useful to clarify the young adult's understanding of 'cue' or 'trigger.' For instance, "Can you think of a particular song that brings back certain memories for you? If so, that song is a *cue* for those memories or feelings because you *associate* them together. In other words, the cue *reminds* you of the memory, maybe because you first heard the song when those events you were remembering happened."

Explore the young adult's thought triggers. This can be done in the following way: "Tell me about a time when you were not planning to smoke and you ended up doing so. What were the thoughts that went through your head that led you to smoke? For example, you might have had the thought 'just one won't hurt' or, 'I'll have a better day if I smoke.'"

Subsequently, emphasise the distinction between thoughts and facts. Explain that cannabis-use thoughts can be addressed by treating them as an evaluation, instead of fact, and not reacting to them. You can discuss this as following: "Thoughts are your mind *guessing* or *evaluating* the current situation. When we treat our thoughts as facts and as something that we *have* to act on, then we are buying into them and can risk using cannabis even when we have desired not to. Emotions and physical sensations act similarly. If we believe that we *have* to do something about feeling sad or uncomfortable, and that cannabis use is the only, or easiest, way to fix that, then we have bought into these. Again, they are just emotions and sensations and are not toxic for our bodies. Their hold over us lies in the degree to which we believe that they are something that we have to act on."

Highlight that physical feelings can also act as strong triggers that lead to cannabis use. If the young person has physical feelings associated with urges or cravings to smoke, you can ask, "When you start to get an urge or craving, what is that like? How would you describe how it feels?" Encourage the young person to think back to the times when he/she had a craving and how it led to cannabis use.

Inside world

Explain that people often think that by changing something in the outside world (e.g., their job or the way other people act) they would behave differently; however, as much as we wish the outside world were different, it is largely outside our control. Sometimes the only thing we have direct influence over is our own behaviour.

Highlight that our thoughts, emotions and physical sensations can act like outside cues, leading to cannabis use and triggering urges. Acknowledge that we can't directly change our emotions or physical sensations (e.g., you can't make yourself 'just feel better' or 'not have physical tension') but we can change our behaviours and how we manage our thoughts. State that the first step towards addressing one's thoughts, emotions or physical sensations is being aware of them.

The link between our internal world and behaviours (refer back to the 'hot cross bun example worksheet') means that changing either of these will have a flow-on effect. Illustrate this with an example, such as, "If we feel hungry (physical sensation), we can eat (behaviour) which will cause us to no longer feel hungry." Using a personal example, preferably a behaviour that others consider a weakness (e.g., cigarettes, food, alcohol, or purchasing), may also be helpful. For example, "When I've had a difficult day at work I go home feeling stressed, I have thoughts that I don't like this job and feel tense in my body. When I get too caught up in these thoughts, feelings and sensations, I eat too much bad food. But this isn't how I value my health. What could I do instead that would still satisfy my value?"

Externalise the source of the young adult's uncomfortable thoughts, feelings, and physical sensations using the following metaphor: "It's like there is this other person, related to cannabis use that sends these different thoughts, feelings and sensations. Let's call him 'Bud', for example. Even though he isn't really us and he can't really hurt us, it is very easy to mistake the information that he sends as something that we absolutely have to do something about, make it go away, or avoid. Once we become aware that these thoughts, feelings and sensations aren't really our own, it becomes easier to decide if we really *need* to do something about them." When the young adult notices that they are having thoughts or

feelings related to cannabis use, they could simply say to themselves "Bud." The young person could use a name other than Bud that is more personally suitable.

Identifying high risk situations: Self-awareness example

The aim of the following exercise is to help young adults identify their own high-risk situations that lead to cannabis use. Ask the young adult to think about the last time he/she had used cannabis despite having decided not to. Specifically request that they think about their internal and external worlds leading up to and while using cannabis. Briefly recap that thoughts, feelings, physical sensations and behaviours are all connected in any given situation.

Spend time working through the 'Identifying high risk situations worksheet' (see page 19), and ask the young person to list the thoughts, feelings, physical sensations and situations linked to their cannabis use. Once completed, select one of their cues and use it to complete the 'Blank hot cross bun worksheet' (see page 20). Afterward, ask the young person to select another cue and work through another copy of the worksheet. Encourage the young person to complete as much of the worksheet as possible using supportive statements (e.g., "Wow. It seems you have a pretty good idea of how that collection of thoughts, feelings, sensations and situations trigger your cannabis use"). It is common for individuals to get confused between physical sensations, emotions and thoughts. If, for example, the young person lists "sad" as a thought, you could say something like, "Okay that's an emotion so we can fill that in over here. When you are feeling sad, can you think of the type of thoughts that are going through your head? What is your mind (e.g. 'Bud') saying to you?"

Introduce the concept of an 'exit clause': "We can't change our feelings or physical sensations, but we can influence them by performing a different behaviour, having a different thought or by treating our thoughts differently." Ask the young adult to list possible behaviours that they could conduct instead of smoking cannabis. Ideally, these behaviours would be ones that the young person has previously engaged in, are known to produce a positive outcome and are easily achievable. For example, if the individual goes home to smoke a cone immediately after school as they feel stressed and tired, a possible exit clause could be to have a warm bath. It is important, however, to use an example that is appropriate for and enjoyable to the individual.

Suggest that the young adult could treat their thoughts differently. Reiterate the distinction between a thought and fact and highlight that the young adult does not have to act on their thoughts. For instance the young adult could say to themself, 'Bud' [my mind] is trying to make me smoke a cone by telling me that cannabis is the only way to cope with feelings of tiredness and stress. I don't have to do what he says." Use Visual Metaphors 1 and 2 (see page 23) to further illustrate this notion.

Collaboratively complete the 'Hot cross bun exit clause worksheet' (see page 21) which addresses the thoughts, feelings, physical sensations and behaviours that arise when the young adult activates an exit clause. In this exercise, a new set of emotions and thoughts may arise (e.g., "I'm not going to give in to my urges to use cannabis as I don't want it to control me. That's not what is important to me"). This type of response may take time to develop and will more likely appear once the individual has a strong desire and commitment to change their cannabis-related behaviours. Initially, it may be helpful for the young adult to try to avoid situations in which cannabis use triggers are present.

Afterward, provide the young adult with the 'Foldable 4-part hot cross bun worksheet' (see page 22) to complete at home (i.e., twice during the week when they either used cannabis or felt the urge to use). Suggest that they keep the worksheet in the same location they keep their cannabis, to act as a reminder to complete it.

Summing up (approximately 5 minutes). Have the young person summarise what he/she has learnt in the session and ask whether they believe this information would be helpful for reducing cannabis use. Ask them to attend their next session ten minutes early to complete questionnaires that will help track their progress. Finally, remind them to complete the 'Foldable 4-part hot cross bun worksheet' provided.

Hot Cross Bun Example Worksheet

Situation At home by yourself

I have no friends

I'm all alone

Thoughts

Physical Sensations

Feelings/ Emotions

Tension in chest

Loneliness

Sadness

Behaviours

Smoke some cones

Feel good
Tension goes away
Thoughts are quiet

More likely to use again

Identifying High Risk Situations Worksheet

a. **Situations:** In what kind of situations are you more likely to use cannabis?

1. _____

2. _____

3. _____

4. _____

b. **Thoughts:** What kind of thoughts tend to lead you to use cannabis?

1. _____

2. _____

3. _____

4. _____

c. **Emotions:** What are some of the emotions that tend to lead you to use cannabis?

1. _____

2. _____

3. _____

4. _____

Blank Hot Cross Bun Worksheet

Situation _____

_____

_____

Thoughts

Physical Sensations

Feelings/ Emotions

_____ _____

_____ _____

Behaviours

_____

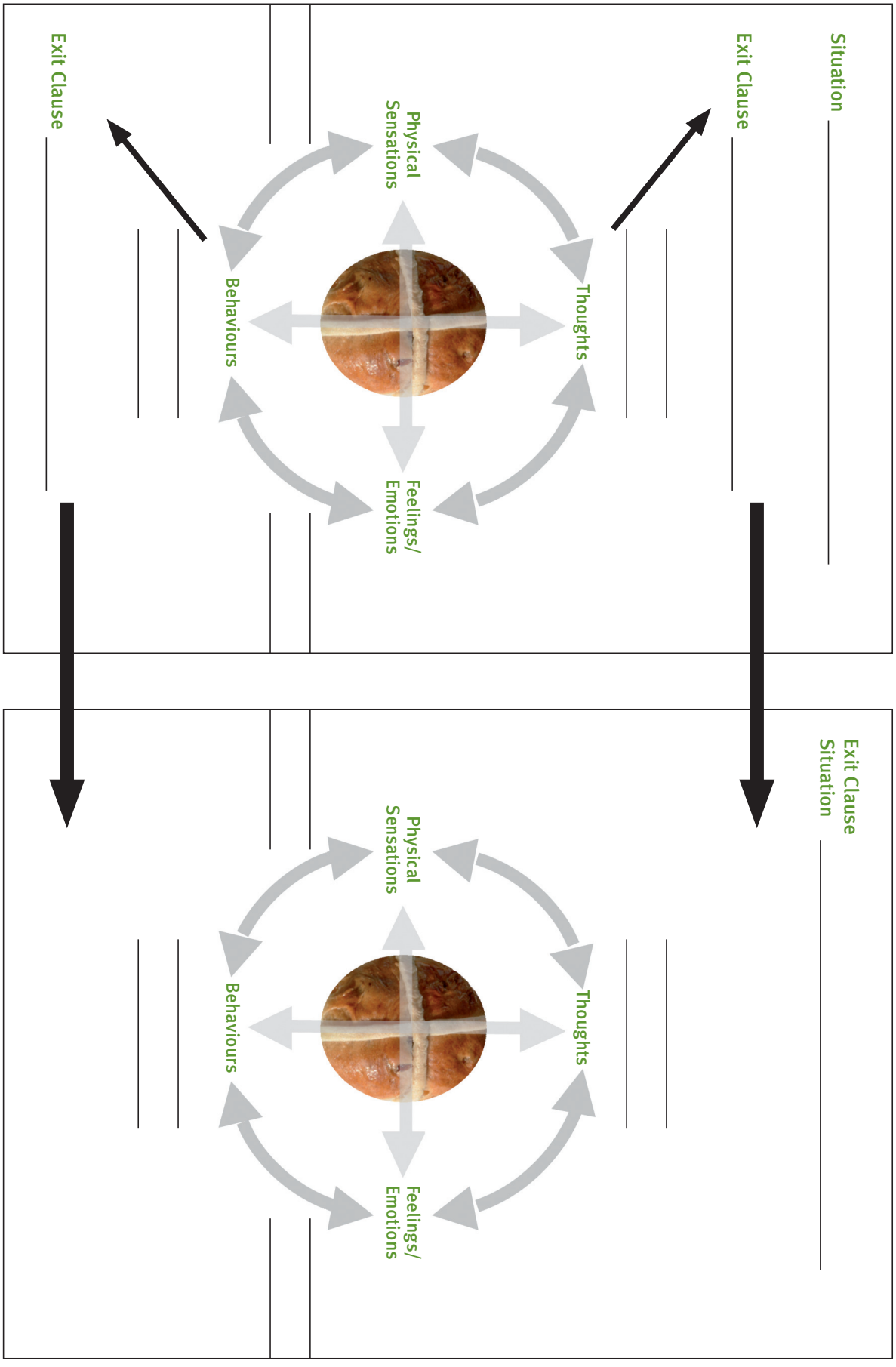
_____

More likely to use

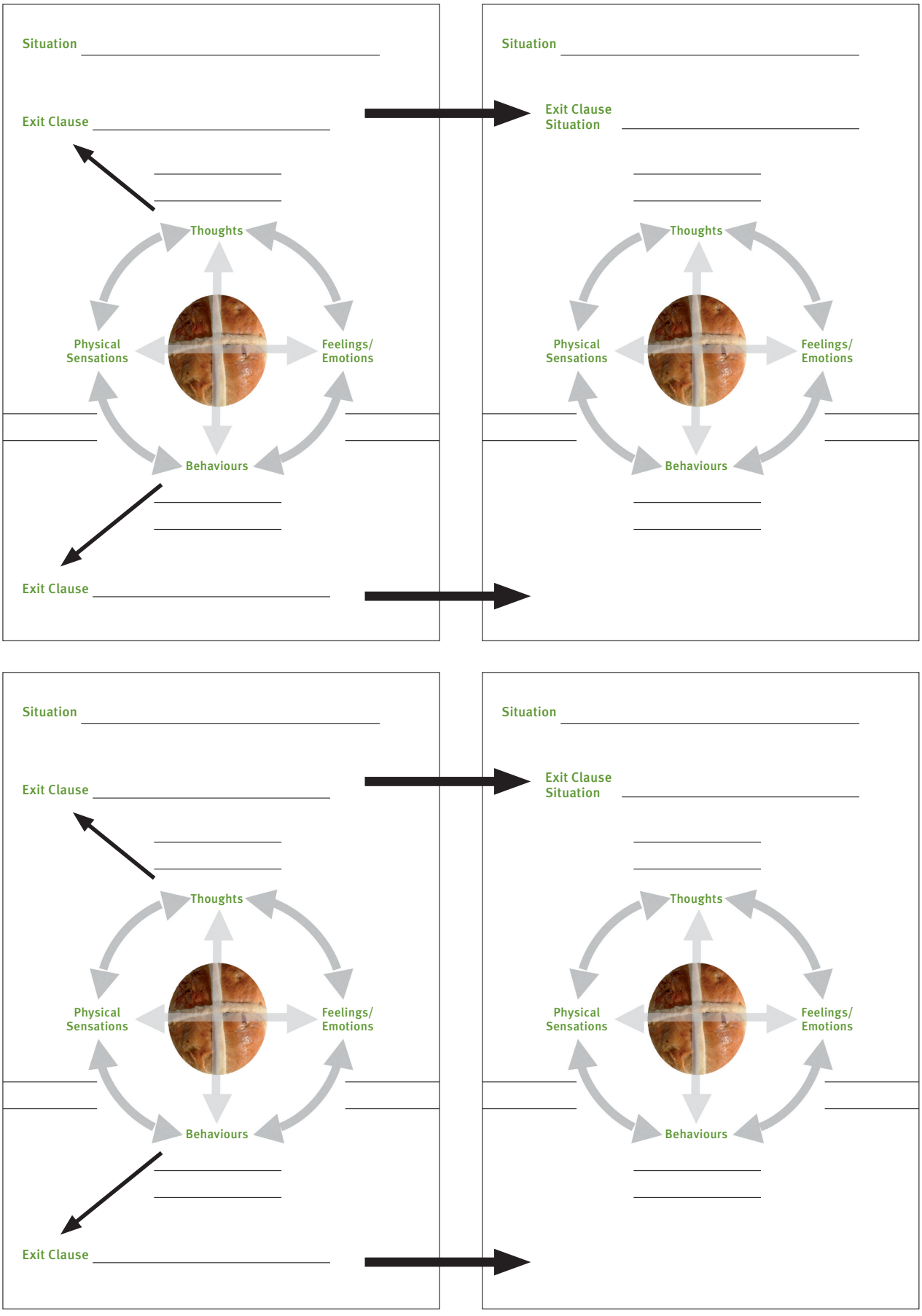
_____

Immediate Consequence

Hot Cross Bun Exit Clause Worksheet



4-Item Foldable Hot Cross Bun Worksheet



Visual Metaphor 1

The belief that we need to feel a certain way to do something important

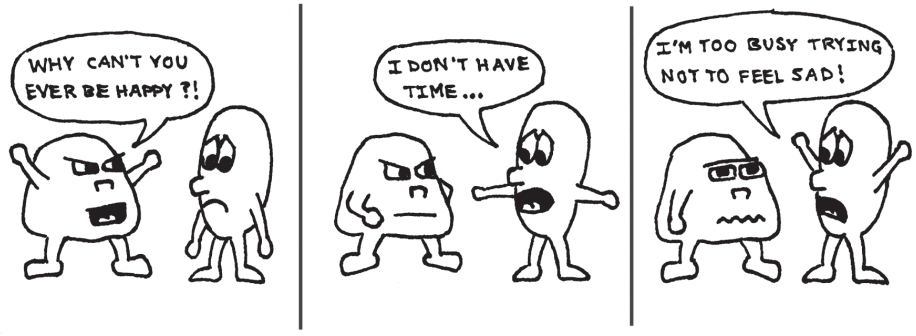
You can engage in valued action even when you lack confidence, inspiration, or inner peace. You can engage in valued action even when your mind says you are “too anxious”, “too sad”, “too angry”, or “too confused.”

We sometimes think we have to have the right feelings or the right level of confidence to engage in a valued action.

As emotions can feel so powerful, we can easily think that we need to feel a certain way before we can do anything.

Visual Metaphor 2

The struggle to not feel bad



We can quite easily get so caught up in trying to not feel bad and trying to avoid bad feelings that we have no energy or time free to engage in the kind of life that we value and that makes us truly happy.

Session Three

Approximate length. 60 minutes

Pre-session measures. Give the young person the URICA (McConnaughy et al. 1983), the DTCQ-8 (Sklar & Turner 1999) and the VLQ-II (Wilson et al. 2010) to complete.

Rapport building/Check-in (approximately 5 minutes). Spend a few minutes asking the young person how they have been during the past week. Ask if they have had a chance to think about what you covered during the last session and question them about their reactions.

Note to Clinician: As in session two, the implementation of this session will be dependent upon the participant's stage of change. If the young person is in the precontemplative or contemplative stage, there should be greater focus on increasing motivation. If they are in the preparation or action stage, there should be greater focus on functional analysis.

Setting a change date and self-monitoring (approximately 15 minutes). Explain that once people decide to change their cannabis use, it is important that they set a specific date for the change to take place. If they don't, it could be harder to get started. Check with the young person as to whether they are ready to set a change date. If they are, have them set and write down a date. If they are not, then re-iterate that setting a change date would be a helpful strategy to use in the future should they wish to change later.

Introduce self-monitoring. Tailor this introduction depending on whether the young person has set a change date. For the young adults who have, focus on self-monitoring as a tool to track their progress toward change. For those who have not, focus on self-monitoring as a tool to understand their patterns of use.

"Self-monitoring is a way of learning in more detail about when and why you use cannabis. It can also help you to keep your focus if you wish to change, and help slow down the sometimes "automatic" nature of the processes that lead to having a smoke. Self-monitoring will show up any patterns of problems you may have with cravings, situations, and smoking."

"It would be most helpful for you to fill in this self-monitoring form each day. The form asks you to make a note of every time you use cannabis and your reason for using, keeping in mind the inner and outer world triggers that we discussed earlier. At the end of the week check back over the form and notice any patterns in your cannabis use, and how you might be able to break these patterns using the strategies we discussed earlier."

"If you find that you made mistakes or had problems, this is not a disaster. Try to stay positive and look at the mistakes and learn from them. You may need to try different strategies to avoid making the same mistakes again next time."

Provide the young person with a copy of the self-monitoring form (see page 27).

Dealing with high risk situations: Using self-awareness (approximately 25 minutes). Recap that last session you identified how cues from situations, thoughts, feelings and physical sensations, often sent to them by 'Bud', have led him/her to use cannabis. Briefly review the young person's high risk situations and explain that in this session you will look at how to manage the young person's cannabis use when faced with these high risk situations.

Thoughts and emotions

Explain that thoughts can be targeted by replacing them with other thoughts, or by treating them as an evaluation, instead of fact, and not reacting to them. As our thoughts and feelings are linked, changing or responding differently to a thought will also influence our emotions. Reiterate that learning how to alter his/her thinking will put the young person in control of both his/her thoughts and emotions. This can be illustrated with examples: "Let's consider, for example, when things go wrong for us. Bad things happen to everyone. Everyone has frustrating or unpleasant things happen in their lives and yet not everyone gets depressed. Why is this so? The key is to understand that something comes between the event and the emotion. That something is the person's thinking – what they are saying to themselves."

"Take the following example: Two people get turned down for a job. As he leaves the office Bob says to himself:

"I'll never get a job. I'm going to be poor and struggling for the rest of my life. I'm a complete failure; a good-for-nothing. I can't face my parents."

"Jane, on the other hand, is thinking in a different way as she leaves the interview:

"Well, this is frustrating. I handled that interview well, but I guess the competition was stiff. I have another interview tomorrow, if I continue to put my best foot forward, maybe that one will have better results."

"You might expect that Bob and Jane would feel quite differently about their bad experience. Bob's thoughts are a bit more sticky and will more likely lead

to depressed feelings. If Bob was a user of cannabis, he might prepare to smoke a cone. Jane, on the other hand, might be feeling appropriately sad, but is not feeling overwhelmed by her emotions. Instead of using cannabis, she would probably take constructive action, like preparing for her next interview."

Explain that we often get in the habit of buying into thoughts that are not rational, healthy, or helpful to ourselves. Emphasise that we can choose to think differently about things in the outside world and not be so caught up with our emotions. Refer to the young person's completed 'Foldable 4-item hot cross bun worksheet' that they took home. If they did not complete this, complete an example now using a situation that occurred since the last session.

Physical feelings

Use the following example to illustrate how one might manage their physical urges. "If hunger is one of your inside world triggers, what is the best way to control it? By eating, of course. If you are tired, take a nap. Simple, isn't it?" Explain the importance of taking care of the physical feelings directly. Note that if this is not possible right away (for example, you may not be able to get your rest or get something to eat), then it's important to stay away from outside world triggers. Illustrate with an example, such as, "don't go to the grocery store via your dealer's house when you are hungry."

Point out that there is a special physical feeling that people who are dependent on cannabis have, which is an urge or craving to smoke. Note that the young person may think it is overpowering, that it controls him/her, and that he/she has no choice but to satisfy it. Explain that we have learned that this is not true, this is just 'your use' talking to you and telling you that you can't possibly tolerate these experiences. It's not really coming from you. Point out that there are ways of handling urges to use cannabis and work through the following strategies.

1. "Urge surfing" and non-reinforcement of cravings.

Introduce the young person to the analogy that cravings/urges are like waves: they reach peak intensity then subside.

"Cravings or urges usually come and go in waves. So, if they are feeling intense, try to distract yourself for a while and soon you will notice that the worst part has passed. Imagine the wave rising up to its peak level, and then it will pass you by, leaving you feeling more comfortable and no longer in need of a smoke. This is called 'urge surfing.' You will feel good when the urge wave has passed and you didn't have to act on it by smoking."

Explain that urges are continually being reinforced when cannabis is smoked in reaction to them. Indicate that resisting smoking in the presence of a craving will help to weaken the craving via the process of extinction. Also state that, "It can often help to think again how these urges are not actually coming from 'you' but are instead originating with 'your use'. They are not toxic and can't really hurt you. 'Your use' may just tell you that they can or that you have to do something about them. Make it *your own* choice."

Suggest that the young adult does not mix tobacco from cigarettes with cannabis: "Research has shown that nicotine, found in tobacco, is quite physically addictive and so by mixing the two you might be tricking your brain into thinking it needs cannabis, when it's actually asking for nicotine. By cutting out nicotine, it will be much easier to choose not to smoke cannabis when you don't want to."

2. Distraction

Highlight that distraction works on the principle that cravings are thoughts sent by 'their use', and thoughts can be changed. Point out that the easiest way to change thoughts is to change the behaviour that is currently occurring. By getting involved in some activity that is unrelated to smoking, the young person's thoughts will be removed from smoking and focused on the new activity. Suggest that the young person might try taking a walk, phoning a friend, or engaging in one of the enjoyable activities they listed earlier. This will help pass the short time during which the craving is active.

3. Delaying

Explain that delaying is related to distraction and works on the assumption that cravings are time-limited and abate over time if not acted upon. Advise the young person that if they are about to give in to an episode of serious craving, they should check the time and make a personal commitment not to smoke for at least half an hour. During this time, ask the young person to engage in distraction. After the half hour is up they should decide whether having a smoke still seems necessary. It will usually be the case that having a smoke will not be as important as it was earlier.

4. Decatastrophising

Point out that in this context decatastrophising simply means keeping the experience of craving in perspective. Ask the young person to think about the feeling of craving and compare that to other uncomfortable feelings, such as a bad case of sunburn or severe anxiety. Suggest that the young person avoid

becoming overwhelmed by cravings by reminding themselves that they are not unbearable, just temporarily uncomfortable and that these thoughts and feelings are just evaluations that 'their use' is sending to them. Encourage the young person to ask themself questions such as: "Is the craving really unbearable?", "Is it the worst thing that could be happening?", "How does it compare to bad sunburn?", "Is this really my own valued needs or just those of 'my use'?" before they act on the craving and have a smoke.

5. Recalling the negative consequences of smoking

Often when experiencing cravings people tend to remember only the positive effects of smoking cannabis; they often forget the negative consequences. It can be effective for them to remind themselves of the negative effects of smoking and the benefits of not smoking. Get them to ask themselves, "If I have a smoke, how consistent is this being the sort of [refer to values] person that I want to be?"

Make your way through the worksheet 'Dealing with cues from the inside world' (see page 28). You can introduce it in the following way: "Now it's time for you to try dealing with your inside world cues or triggers. By completing this exercise, you can help yourself identify ways to manage thoughts and feelings that might trigger an urge to use cannabis."

External cues

Explain how the young person might be able to manage the cravings associated with external cues: "Given the strong cravings associated with external cues, one of the best ways to deal with them is to avoid them; particularly in the first few weeks after quitting or cutting down. For example, you might need to avoid visiting friends whom you know will be smoking at the time. Temptation is almost certain to arise, and it can be very difficult to deal with in the early stages. This doesn't mean permanently cutting ties with your smoking friends, just avoiding a high risk situation while you are particularly vulnerable.

"Not all external cues can be anticipated or avoided (for example, time of the week). Planning and being prepared for these situations will help you deal with them, if it is not possible to avoid them. Having an 'all-purpose' plan for dealing with unexpected or especially difficult situations can be useful. Here is an outline of an all-purpose emergency plan. We can alter or add to it to suit you:

1. I will leave or change the situation or environment
2. I will put off the decision to smoke for 30 minutes (I know that cravings are short-term. I'll wait it out.)
3. I will change my thoughts about smoking (do I really *need* a smoke?)
4. I will remind myself that it is just 'my use' talking to me and that these thoughts are just thoughts and I don't have to act on them
5. I will think of something unrelated to smoking
6. I will remind myself of my success to this point
7. I will call someone I trust and talk about it.

Lapse vs. relapse

Explain to the young person that it is very common for people to slip-up when attempting to reduce or stop their cannabis use. They may have used when they had decided not to, or used more than they had planned, on a particular occasion. Explain that this is called a lapse, which is different from a relapse: a return to previous levels and patterns of use. Point out that when a lapse occurs, it is very important not to panic, become down on yourself, or believe that you've 'blown it'. Suggest that the young person should remind themselves that a lapse is a part of the change process in that it represents an opportunity to review their triggers, to remind themselves about how to deal with them, and to generate new ideas. Remember that every moment is an opportunity to make a choice whether to be on track with you values or not. The longer you beat yourself up about it, the more time you are missing out on being on track with your values. You might point out, depending on the young person's reaction, that although lapses are not catastrophic, they should not be used as permission to use cannabis at previous levels from time to time. Would that be helping them be the kind of person that they value and really want to be?

Explain that if the young person notices that he/she has relapsed to previous levels and patterns of use, it may be necessary to re-engage in the exercises explored in the last three sessions, and/or to seek the help of a therapist or GP.

Saying goodbye (5 minutes). Have the young person summarise what he/she has learned today and over the course of the treatment. Specifically ask if they think this information will be helpful if they are trying to reduce their cannabis use or if they decide to reduce their use in the future. When doing so, be sure to query as to whether the participant feels like they could have used additional sessions. While these cannot be offered, determine how many more they would like, and what sort of issues and skills that they would have liked to have covered in [more] detail. Wish the young person well and encourage him/her to go over and continue using the materials in his/her own time.

Self-Monitoring Form

Date and time of smoking	Thoughts	Emotions	Physical feelings	External cues

Dealing with cues from the inside world

Physical feeling: What can you do to satisfy the urge in some other way (e.g., physical activity, eating, etc.)?

Physical feeling	How can I satisfy it without using cannabis?

Thoughts:

Lousy thoughts	Rational response to help you not use cannabis

Client ID: _____ Date: _____

Appendix B – Personalised Feedback Report

This document provides a brief summary of the results of the assessment that you participated in today. The purpose of this is to provide you with some unbiased information about how cannabis and other substance use may be impacting upon your life. This is to help you in making up your own mind about whether you wish to change your substance use patterns or not.

Diagnosis of Substance Dependence (*DSM-IV*)

1. Tolerance, as defined by either of the following: a. A need for markedly increased amounts of cannabis to achieve intoxication of the desired effect b. Markedly diminished effect with continued use of the same amount of cannabis	Yes	No
2. Withdrawal, as manifested by either of the following: a. Characteristic withdrawal syndrome for the cannabis b. The same (or a closely related substance) is taken to relieve or avoid withdrawal symptoms	Yes	No
3. Cannabis is often taken in larger amounts or over a longer period than was intended	Yes	No
4. There is a persistent desire or unsuccessful attempts to cut down or control cannabis use	Yes	No
5. A great deal of time is spent in activities necessary to obtain the cannabis, use cannabis or recover from its effects	Yes	No
6. Important social, occupational or recreational activities are given up or reduced because of cannabis use	Yes	No
7. Cannabis use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance	Yes	No
Client meets criteria for cannabis dependence (i.e., total of three or more criteria above)	Yes	No

Severity of Dependence

Your Score on the SDS _____ /15 (A higher score indicates a higher likelihood of substance dependence).

Cannabis use

You had _____ number of abstinence days. The longest period of abstinence was _____

The mean number of cones/joints per episode over the 90 day period was _____

The maximum number of cones/joints per episode consumed was _____

You seem to use more on weekends/weekdays.

The number of days you used over the past 90 days was _____ . This is percentile _____ .

Note: A percentile indicates the proportion of the general population that you have a higher number (or usage) than.

Reasons for using

In terms of your motives for using cannabis, the most reported motive was _____

Your second most reported motive was _____

Your third most reported motive was _____

Quitting/moderating Items

Quit:	Quit in last three months:	Number of times:
Moderated use:	Moderated in last three months:	Number of times:

Cannabis problems and impact on life functioning

Altogether you endorsed _____ out of 27 problems that you associated with your cannabis use. These were mostly in the areas of:

_____

_____

_____

_____

Cannabis has had a _____ impact on your schooling/work

Cannabis has had a _____ impact on your social life

Cannabis has had a _____ impact on your family relationships and responsibilities

Risk perception

The most important risks of cannabis for you are (list):

1. _____

2. _____

3. _____

Motivation to change

You scored _____ on the URICA. This is decile _____ .

Note: A decile divides the sorted data into 10 equal parts, so that each part represents 1/10th of the sample or population. Essentially a higher score (closer to 10 or more) indicates that you are more likely to be considering, if not already engaging in, change behaviours around substance use.

Depression Anxiety Stress Scale (DASS 21)

The results below indicate the level of symptoms you have been experiencing in relation to depression, anxiety and stress. Depending on how often you use and/or your patterns of use, they may interact with substance use.

Your score for Depression was _____ /42 which is in the _____ range.

Your score for Anxiety was _____ /42 which is in the _____ range.

Your score for Stress was _____ /42 which is in the _____ range.

Important people

You have _____ people that you consider as potential supports for reducing your substance use, should you wish to do so.

In particular, _____ was indicated to be of particular importance to you as well as potentially being the most supportive.

Values

Values are qualities about ourselves that aren't necessarily about feeling good in the moment (although they sometimes can and will be), but are more about being the kind of person that you truly want to be.

Values that you indicated as of most importance to you were in the domains of

_____

_____

Of these, you were most concerned about your level of action in the domains of

_____

_____

Acceptance of unpleasant experiences and action towards valued life directions

You scored _____ out of a possible 63 on *Acceptance*. A higher score indicates you are more likely to be able to accept distressing internal thoughts, sensations and emotional states and not engage in substance use to try and make these go away.

You scored _____ out of a possible 63 on *Action*. A higher score indicates you are more likely to be able to engage in personally valued actions/life directions, despite possibly experiencing distressing internal thoughts, sensations and emotional states.

Appendix C – Personalised Feedback Report Manual

Easy instructions for completing the Personalised Feedback Report (PFR)

Instruments used to complete the Personalised Feedback Report (PFR)

SCID

A semi-structured interview to diagnose cannabis dependence as outlined in the *Diagnostic and Statistical Manual of Mental Disorders* (4th Ed.)
[*DSM-IV*].

Severity of Dependence Scale

A self report measure to assess cannabis dependence.

Timeline Follow Back

This is in interview format and uses a calendar method to measure cannabis consumption retrospectively.

Cannabis Problems Questionnaire Adolescent

This questionnaire has 27 items covering physical and psychological effects of cannabis use.

Sheehan Disability Scale – Child

A self report measure of the impact of cannabis use on schooling, work, social life and domestic responsibilities.

Risk perception

A self report measure to gain information about clients' perception of risk associated with cannabis use.

University of Rhode Island Change Assessment (URICA) Scale

A self report questionnaire which focuses on willingness to change cannabis use.

Quitting/Moderating items

These questions focus on the times that clients have attempted to quit or moderate their cannabis use. It is a self report measure.

Depression Anxiety Stress Scale (DASS-21)

The DASS-21 is a self report measure of symptom severity of depression, anxiety and stress.

Important people

Using an interview format, the client is asked to generate a list of important people in their life and identify how these people feel about their cannabis use.

Valued Living Questionnnaire II (VLQ-II)

The VLQ-II is a self-report measure of a person's values and their committed action and satisfaction towards those values.

Acceptance and Action Questionnaire – Substance Abuse (AAQ-SA)

The AAQ-SA measures self-reported psychological flexibility in regards to substance use.

Table of instruments used in PFR

Instrument	Administer	When to administer	Where used in PFR	How to obtain	How to score
SCID	Interview	Baseline	Cannabis dependence/ patterns of use	Included in assessment packet	Scoring sheet
SDS	Interview	Baseline	Cannabis dependence/ patterns of use	BMRI to supply	Scoring sheet
Timeline Follow Back	Interview	Baseline	Cannabis dependence/ patterns of use	Included in assessment packet	Frequency per week and quantity per episode
Quitting/ Moderating Items	Self	Baseline	Stage of change	Included in assessment packet	N/A
Cannabis Problems Questionnaire	Self	Baseline	Cannabis problems	Included in assessment packet	N/A
Sheehan Disability Scale –Child	Self	Baseline	Cannabis problems	Included in assessment packet	Scoring sheet
Risk Perception Items	Self	Baseline	Cannabis problems	Included in assessment packet	N/A
URICA	Self	Baseline	Stage of change	Included in assessment packet	Scoring sheet
DASS 21	Interview	Baseline	Other problems	Included in assessment packet	Scoring sheet, templates and severity ratings
Important People	Interview	Baseline	Social support	Included in assessment packet	N/A
VLQ-II	Self	Baseline	Strengths and values	Included in assessment packet	N/A
AAQ-SA	Self	Baseline	Strengths and values	Included in assessment packet	Scoring sheet

PRF Section 1 Cannabis dependence and patterns of use

SCID – Diagnosis of Cannabis Dependence (DSM-IV)

How it appears on the PFR:

Research assistant to circle criteria that participant meets.

1. Tolerance, as defined by either of the following: a. A need for markedly increased amounts of cannabis to achieve intoxication of the desired effect b. Markedly diminished effect with continued use of the same amount of cannabis	Yes	No
2. Withdrawal, as manifested by either of the following: a. Characteristic withdrawal syndrome for the cannabis b. The same (or a closely related substance) is taken to relieve or avoid withdrawal symptoms	Yes	No
3. Cannabis is often taken in larger amounts or over a longer period than was intended	Yes	No
4. There is a persistent desire or unsuccessful attempts to cut down or control cannabis use	Yes	No
5. A great deal of time is spent in activities necessary to obtain the cannabis, use cannabis or recover from its effects	Yes	No
6. Important social, occupational or recreational activities are given up or reduced because of cannabis use	Yes	No
7. Cannabis use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance	Yes	No
Client meets criteria for cannabis dependence (i.e., total of three or more criteria above)	Yes	No

Required:

1. Completed *SCID* interview
2. PFR

How to:

A diagnosis of cannabis dependence is to be provided based on the above criteria.

Severity of Dependence Scale

How it appears on the PFR:

Your Score on the SDS _____

Required:

1. Completed *SDS* questionnaire
2. Scoring Sheet
3. PFR

How to:

For each question:
Never or almost never = 0
Sometimes = 1
Often = 2

Always or nearly always = 3

Calculate the total number on the SDS by adding together all items (scoring below). A score of 3 or more indicates cannabis dependence.

Timeline Follow Back

How it appears on the PFR:

You had _____ number of abstinence days. The longest period of abstinence was _____ .

The mean number of cones/joints per episode over the 90 day period was _____ . The maximum number of cones/joints per episode consumed was _____ . You seem to use more on weekends/weekdays (circle one).

The number of days you used over the past 90 days was _____ . This is percentile _____ .

Note: A percentile indicates the proportion of the general population that you have a higher number (or usage) than.

In terms of your motives for using cannabis, the most reported motive was _____

Your second most reported motive was _____

Your third most reported motive was _____

Required:

1. Completed *Timeline Follow Back Questionnaire*
2. PFR

How to:

Provide feedback by filling in the blanks (using the data obtained from the Timeline Follow Back) for the purposes of the PFR. For the abstinence days, count the days labelled 'A'. For the mean number of SCUs in last 90 days, determine the most common pattern, and whether it needs to be adjusted up or down according to use shown in the calendar. The number of days used cannabis = 90 – Abstinent Days. For the percentile, see table below. For the motives section, see reasons reported next to the patterns section of TLFB.

Norms and percentiles of cannabis consumption in a national survey over a 90-day period

Days Used	Men	Women
1-2	93	96
3-11	94	97
12-50	96	99
60 or more	99	99.5

Quitting/Moderating items

How it appears on the PFR:

Quit:	Quit in last three months:	Number of times:
Moderated use:	Moderated in last three months:	Number of times:

State if quit/moderated use before and if in the last three months. State how many quit/moderation attempts.

Required:

1. Completed *quitting/moderating items*
2. PFR

How to:

Fill in table by writing yes/no in first two columns and number in the third column. Do this for both row one and row two.

PRF Section 2 Cannabis problems

Cannabis Problems Questionnaire – Adolescent

How it appears on the PFR:

Altogether you endorsed _____ out of 27 problems that you associated with your cannabis use. These were mostly in the areas of:

1. _____
2. _____
3. _____

Required:

1. Completed *Cannabis Problems Questionnaire-Adolescent*
2. PFR

How to:

Score the *Cannabis Problems Questionnaire-Adolescent*: Socially-related problems (questions 1, 2, 3, 4, 10, 24, 27), Money-related problems (questions 5, 6, 7, 8, 9), psychologically-related problems (questions 15, 18, 19, 20, 21, 22, 25, 26), health-related problems (questions 11, 12, 13, 14, 16, 17, 23). Then list the three most common problems on the PFR. Max scores: 7 for social, 5 for money, 8 for psychological, and 7 for health.

Sheehan Disability Scale – Child

How it appears on the PFR:

Based on your responses, cannabis has

A _____ impact on your schooling/work

A _____ impact on your social life

A _____ impact on your family relationships and responsibilities

Required:

1. Completed *Sheehan Inventory Child*
2. PFR

How to:

Each item pertains to a different construct. 0 indicates no impairment, 1-3 indicates mild impairment, 4-6 indicates moderate impairment, 7-9 indicates severe impairment, and 10 indicates extreme impairment. Fill in the blanks with the words.

Risk perception items

How it appears on the PFR:

The most important risks of cannabis for you are (list):

1. _____

2. _____

3. _____

Required:

1. Completed *Risk Perception* items
2. PFR

How to:

List the most important risks of cannabis that the client identified for the purpose of the PFR.

PRF Section 3 Stage of change

URICA

How it appears on the PFR:

Motivation to change

You scored _____ on the URICA.

This is decile _____ .

Note: A decile divides the sorted data into 10 equal parts, so that each part represents 1/10th of the sample or population. Essentially a higher score (closer to 10 or more) indicates that you are more likely to be considering, if not already engaging in, change behaviours around substance use.

Required:

1. Completed *URICA self-assessment*
2. *URICA* scoring sheet
3. READINESS formula
4. Decile table
5. PFR

How to:

1. Have the client complete the *URICA self-assessment* instrument
2. Transfer the raw item scores from the *URICA* to the scoring sheet
   Sum each of the columns (Precontemplation, Contemplation, Action and Maintenance). Average each column. (Divide by the number of items in each column)
3. To calculate READINESS use the following formula
   READINESS = average contemplation + average action + average maintenance – average precontemplation
4. Use *Decile Table* to determine decile score
5. Transfer raw and decile score to PFR

URICA 32 Item Versions

	Precontemplation	Contemplation	Action	Maintenance
Question Numbers	1	2	3	6
	5	4 (omit)*	7	9 (omit)*
	11	8	10	16
	13	12	14	18
	23	15	17	22
	26	19	20 (omit)*	27
	29	21	25	28
	31 (omit)*	24	30	32
Total:				
Divide by:	7	7	7	7
Mean:				

*For the questions that say "Omit" do not include them in your summation of scores for each stage subscale.

Readiness = Contemplation + Action + Maintenance – PreContemplation

Readiness = _____ + _____ + _____ – _____ = _____

Decile Table

Decile	URICA Readiness
10	12.9 or higher
9	12.3 – 12.8
8	11.7-12.2
7	11.3-11.6
6	10.7-11.2
5	10.3-10.6
4	9.9-10.2
3	9.4- 9.8
2	8.9-9.3
1	8.8 or lower

PRF Section 4 Other problems

Depression Anxiety Stress Scale (DASS 21)

How it appears on the PFR:

Your score for *Depression* was _____ /42

which is in the _____ range.

Your score for *Anxiety* was _____ /42

which is in the _____ range.

Your score for *Stress* was _____ /42

which is in the _____ range.

Required:

1. Completed DASS 21 Questionnaire
2. DASS Scoring Sheet
3. DASS Profile Sheet
4. PFR

How to:

Each item belongs to either: depression, anxiety or stress.
Items *3, 5, 10, 13, 16, 17 & 21* comprise *depression*
Items *2, 4, 7, 9, 15, 19 & 20* comprise *anxiety*
Items *1, 6, 8, 11, 12, 14 & 18* comprise *stress*

Add up the numbers of each subsection (depression, anxiety and stress). **Because the DASS 21 is the short form** (the long form has 42 items) **each score should be multiplied by two.**

Each score can now be transferred to the DASS profile sheet so to give rankings and severity labels and also to make comparisons between the scales.

DASS Profile Sheet

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34

PRF Section 5 Social support

Important people

How it appears on the PFR:

You have _____ people that you consider as potential supports for reducing your substance use, should you wish to do so.

In particular, _____ was indicated to be of particular importance to you as well as potentially being the most supportive.

Required:

1. Completed *Important people* questions
2. PFR

Feedback:

Supportive people are those who will likely be helpful, should the participant choose to ask them for help, in reducing their substance use. Count the number of people listed to be supportive and fill in the first field.

The person's name with a star (*) next to it on the *Important people* sheet should go in the second field.

PRF Section 6 Strengths and values

Valued Living Questionnaire

How it appears on the PFR:

Values are qualities about ourselves that aren't necessarily about feeling good in the moment (although they sometimes can and will be), but are more about being the kind of person that you truly want to be.

Values that you indicated as of most immediate importance to you were in the domains of

_____

_____

_____

_____

Of these, you were least satisfied with your level of action in the domains of

_____

_____

_____

_____

Required:

1. Completed *VLQ-II*
2. PFR

How to:

Select two to four (2-4) valued domains that the participant indicated as of high *Overall importance* in the VLQ-II and complete field 1.

Select two (2) valued domains that are of high *Overall importance* and have a high *Concern with current level of action* score and complete field 2.

Acceptance and Action Questionnaire Substance Abuse Version

How it appears on the PFR:

You scored _____ out of a possible 63 on *Acceptance*. A higher score indicates more likely being able to accept distressing internal thoughts, sensations and emotional states and <u>not</u> engage in substance use to try and makes these go away.

You scored _____ out of a possible 63 on *Action*. A higher score indicates more likely being able to engage in personally valued actions/life directions, despite possibly experiencing distressing internal thoughts, sensations and emotional states.

Required:

1. Completed *AAQ-SA*
2. Scoring Chart
3. PFR

How to:

Scoring chart

Scale 1 – Acceptance	Scale 2 – Action
Question 2 (reverse item)	Question 1
Question 3 (reverse item)	Question 4
Question 6 (reverse item)	Question 5
Question 8 (reverse item)	Question 7
Question 14 (reverse item)	Question 9
Question 15 (reverse item)	Question 10
Question 16 (reverse item)	Question 11
Question 17 (reverse item)	Question 12
Question 18 (reverse item)	Question 13

Calculate the totals for each of the scales and fill in fields 1 (Acceptance) and 2 (Action) on the PFR. Reverse the total score for Scale 1 by subtracting it from 72.