Quik Fix: A randomised controlled trial of an enhanced brief motivational interviewing (BMI) intervention for alcohol/cannabis and psychological distress in young people

Leanne Hides[a,b], **Steve Carroll**[a], **Rebecca Scott**[a], **Sue Cotton**[a], **Amanda Baker**[c] **&**

Dan I. Lubman[a, d]

[a]Orygen Youth Health Research Centre, Centre for Youth Mental Health, University of Melbourne, Melbourne, Victoria

[b]Institute of Health & Biomedical Innovation (IHBI) and School of Psychology & Counselling, Queensland University of Technology (QUT), Brisbane, Queensland

[c]Centre for Brain and Mental Health Research, University of Newcastle, Newcastle, New South Wales

[d]Turning Point Alcohol and Drug Centre, Eastern Health and Monash University, Melbourne, Australia

Short Title: Brief interventions for alcohol/cannabis and psychological distress in young people

Key words: alcohol; cannabis; psychological distress; depression; brief intervention; motivation

Corresponding Author: Dr Leanne Hides, IHBI, QUT, GPO Box 2434, Kelvin Grove, Brisbane, Queensland, Australia, 4001; Tel +61 7 3138 6000; Fax +61 7 3138 6030.

Email leanne.hides@qut.edu.au

Alcohol and cannabis use are the most commonly used licit and illicit drugs worldwide, and frequently co-occur with depression and anxiety disorders [1]. While, there is mounting evidence for the impact of brief motivational interviewing (BMI) interventions for reducing alcohol and cannabis use in young people compared to no/delayed treatment controls over 3 months [eg., 2, 3], their effects appear to reduce over time [eg., 4]. The results of studies comparing BMIs with other 'active' types of brief interventions (BIs; assessment feedback/information (AF/I)) have also been mixed [3, 5]. Nevertheless, BMIs targeting adults alcohol use among psychiatric inpatients (with predominantly mood disorders), have demonstrated significantly better outcomes than control conditions (AF/I) [6, 7].

This is the first randomized controlled trial to compare the effectiveness of a BMI (Quik Fix) compared to an AF/I only control for comorbid cannabis/alcohol use and psychological distress in young people. It was hypothesized that the Quik Fix BMI would result in significantly larger reductions on the primary outcome variables of psychological distress and alcohol/cannabis use.

Participants consisted of 61 young people (aged 16 to 25 years) accessing Western Melbourne headspace, a specialist youth mental health primary care service in Victoria, Australia. Two research psychologists with doctorates in clinical psychology delivered the baseline assessment and BIs. Young people were required to: (i) have used cannabis at least once and/or alcohol above pre-2009 Australian national drinking guidelines (≥ 14 standard drinking units (SDUs) containing 10 grams of ethanol per week) in the past 4 weeks on the Timeline Followback [TLFB; 8] and (ii) have a Kessler Psychological Distress Scale (K10) score of ≥ 17 in the past 4 weeks. Australian normative data

indicates this cut-off is indicative of the presence of depression and anxiety disorders in adults and is at the 75th percentile for young people (aged 16-24) [9]. Exclusion criteria were: (i) more frequent use of another illicit drug; (ii) lack of fluency in English/an estimated IQ < 80 or (iii) current or past history of psychosis.

Of the 103 young people referred to the study, 84 (81.6%) completed telephone screening and 68 (80.9%) completed the baseline assessment. Participants were consisted of 34 males and 27 females, with a mean age of 19.5 years (SD=2.4). Young people tended to live with their families (N=45, 75.0%), were single (N=34; 56.7%), and were employed (N=19, 31.1%) or students (N=16; 26.2%). Just under 40% were unemployed (N=24). Almost 50% (N=28) of participants had been diagnosed with a psychiatric disorder in their lifetime, 24 (40.0%) were currently medicated, including 7 on antidepressants. Sixty-one (59.2%) young people were randomized to the Quik Fix BMI (N=30) and AF/I (N=31) control, using computerised block randomization techniques.

Quik Fix is a 2 to 3 session (1 session=1 hour) BMI intervention targeting alcohol/cannabis use and psychological distress in young people. It consists of a brief assessment, personalised assessment feedback, psychoeducation (using an information brochure) and motivational interviewing. Young people in the AF/I only control group received a single session of the same brief assessment, general assessment feedback (not personalized) and a take-away copy of the information brochure.

The research psychologists conducted a brief telephone check-up (using the K10 and TLFB) at 1-month post baseline. Young people were also offered up to 12 sessions of

cognitive behaviour therapy (CBT) at this time [10]. Those in the AF/I group started at session 1 containing BMI, while those in the Quik Fix BMI group started CBT at session 2. A research assistant blind to treatment allocation conducted telephone assessments at 3 and 6 months follow up. Young people were reimbursed $60 for participating.

Quik Fix was delivered in a mean of 2.07 (SD=1.05) sessions and had a high completion (93.3%) rate. AF/I was delivered in 1.48 (SD=.85) sessions and had a 100% completion rate. There was no between group difference in the mean number of CBT sessions attended post BI (Quik Fix, mean=3.77, SD=3.93; AF/I, mean=4.03, SD=3.80).

Differences between the two treatment groups at baseline and between treatment and follow up completers/non-completers were examined using chi-square (χ^2) analyses and independent samples t-tests. No significant differences on demographic or clinical variables or the primary outcome measures were found.

Between group differences in mean change on the primary outcome measures from baseline to 1, 3 months, and 6 months follow up were tested using the mixed-effects model repeated measures (MMRM) approach. Intent-to-treat principles were applied. There was a significant interaction between group and time for K10 scores, $F(3, 140.81)=9.77$, $p<.001$ (see Table 1). The Quik Fix group had significantly lower K10 scores at 1 ($p=.035$) and 3 ($p=.001$) months, and had a significantly greater reduction in K10 scores compared to the AF/I group from baseline to the 3 follow-up time points.

(Insert Table 1 about here)

There was a significant time by group interaction for TLFB alcohol SDUs/day, $F(3,140.96)=3.96$, $p=.010$ (see Table 1). The Quik Fix group had significantly lower SDUs/day than controls for the 1 month ($p=.024$) and 3 month ($p=.014$) follow-up time points. The rate of change from baseline to each of the follow-up time points was greater for the Quik Fix group compared to controls. There was also a significant time by group interaction for grams per day of cannabis use, $F(3, 138.49)=2.79$, $p=.043$. Although the two groups did not differ significantly at each of the three follow-up time points, the Quik Fix group showed a significantly greater rate of change from baseline to 3 and 6 months follow-up (see Table 1).

This study extends the evidence base for brief interventions to young people with comorbid alcohol/cannabis use and psychological distress. Quik Fix BMI was more effective for reducing alcohol use and psychological distress and achieved a more rapid reduction in cannabis use than the AF/I BI. While over 80% of young people in both groups remained above the K10 clinical cut off of $\geq$ 17 at 1 and 3 months follow up, a significantly higher proportion of young people in the Quik Fix group were below this clinical threshold at 6 months follow up. These findings are consistent with our research hypotheses based on previous research [6, 7].

The conclusions of this study are limited by the small sample size and the absence of independent treatment fidelity ratings. However, the use of treatment manuals, the completion of weekly session content checklists, and regular clinical supervision ensured treatment fidelity. While the 1-month follow up results need to be interpreted

with caution as the research psychologists conducted them, a research assistant blind to treatment allocation conducted the 3 and 6-month follow-ups.

The delivery of up to 12 weeks of CBT treatment post-BI by the same research psychologist is a unique feature of the current study, as previous BI studies have failed to measure or control for the potential confounding effect of additional psychological or pharmacological treatment. This is also a potential weakness of the study, as young people in both groups received more treatment than the BIs and the psychologists were not blind to group attribution. Nevertheless, young people in both conditions received a similar amount of treatment with similar content, and the superior outcomes of the Quik Fix group remained, after statistically controlling for the number of treatment sessions received post BI. There were also no differences in antidepressant medication use or follow up rates across the two treatment groups, further strengthening the results. In conclusion, the Quik Fix BMI is recommended for use within primary care and other health care settings for young people with alcohol/cannabis use and psychological distress.

Acknowledgements

We thank Claudia Marck, Friederike Wahl-Thomas and Janine Ward for their assistance with data collection. We would also like to thank Alison McRoberts, the access team, and the young people at headspace, Western Melbourne for their assistance with completing the project.

Funding for this study was provided by the Orygen Youth Health Research Centre, University of Melbourne and a Non-Government Organisation Treatment Grant, Illicit Drugs Section, Australian Government, Department of Health and Ageing.

References

1. Australian Institute of Health and Welfare: 2007 National Drug Strategy Household Survey: detailed findings; Canberra, AIHW, 2008.
2. Marlatt G, J Baer, D R Kivlahan, L A Dimeff, M Larimer, L A Quigley, J M Somers, and E Williams: Screening and brief intervention for high-risk college student drinkers: results from a 2-year follow-up assessment. Journal of Consulting & Clinical Psychology 1998;66:604-615.
3. McCambridge J, R L Slym, and J Strang: Randomized controlled trial of motivational interviewing compared with drug information and advice for early intervention among young cannabis users. Addiction 2008;103:1809-1818.
4. Baer J S, D R Kivlahan, A W Blume, P McKnight, and G A Marlatt: Brief intervention for heavy drinking college students: four-year follow up and natural history. American Journal Of Public Health 2001;91:1310-1316.
5. Monti P M, S M Colby, N P Barnett, A Spirito, D J Rohsenow, M Myers, R Woolard, and W Lewander: Brief interventions for harm reduction with alcohol-positive older adolescents in a hospital emergency department. Journal of Consulting & Clinical Psychology 1999;67:989-994.
6. Hulse G K and R J Tait: Five year outcomes of a brief alcohol intervention for adult in-patients with psychiatric disorders. Addiction 2003;98:1061-1068.
7. Santa Ana E J, E Wulfert, and P J Nietert: Efficacy of group motivational interviewing (GMI) for psychiatric inpatients with chemical dependence. Journal of Consulting and Clinical Psychology 2007;75:816-822.
8. Sobell L C and M B Sobell: Timeline followback user's guide: A calendar method for assessing alcohol and drug use; Toronto, Addiction Research Foundation, 1996.
9. Slade T, R Grove, and P Burgess: Kessler Psychological Distress Scale: Normative data from the 2007 Australian National Survey of Mental Health and Wellbeing. Australian and New Zealand Journal of Psychiatry 2011;45:308-316.
10. Hides L, S Carroll, L S Catania, A Baker, A Scaffidi, and D Lubman: Intregrated CBT for the treatment of co-occurring depression and substanc misuse in young people: A pilot study. . Journal of Affective Disorders 2010;121:169-174.