A retrospective outcomes evaluation of cannabis use at an addictions center

Gil Kovac, Yasir Abbasi and David Owens

Dr Gil Kovac is a ST5 General Adult Psychiatry, based at Central & North West London NHS Foundation Trust, London, UK.
Dr Yasir Abbasi is a Consultant Psychiatrist in Addictions, based at Mersey Care NHS Trust, Liverpool, UK, an Honorary Senior Lecturer, University of Liverpool, Liverpool, UK and a Clinical Lead for Windsor Clinic, University Hospital Aintree, Liverpool, UK.
Dr David Owens is an Associate Professor, based at University of Leeds, Leeds, UK and Leeds Institute of Health Sciences, Leeds, UK.

Abstract

Purpose – *The purpose of this paper is to retrospectively evaluate outcomes measured for patients attending the Leeds Addiction Unit (LAU) for cannabis use disorders.*

Design/methodology/approach – *The authors performed a retrospective evaluation of data for clients referred to LAU for cannabis use disorders. These clients are routinely allocated to a programme of social behaviour and network therapy (SBNT), and methods of monitoring treatment include four questionnaires completed by clients, and the collection of treatment outcomes profile (TOP) data. Data were compared using non-parametric statistical methods.*

Findings – *Of 158 clients included in the study, 20 completed the four questionnaires at assessment and follow-up. A statistically significant improvement was found for the outcome measuring level of dependence ($p = 0.013$). TOP data showed significant reduction in the average number of days of cannabis use over the past four weeks ($p < 0.001$) and improved median scores for the client's rating of overall quality of life ($p < 0.001$).*

Practical implications – *These findings suggest that treatment using SBNT can result in clinical improvement in cannabis use disorders. The promising results of the UK Alcohol Treatment Trial naturally raised the question as to whether SBNT can be adapted to treat substance use disorders other than alcoholism. This study aims to add to the body of evidence for this proposal.*

Originality/value – *This is the first evaluation of the service to measure outcomes for the treatment of cannabis misuse. This study is especially relevant given the recent changes made to the Diagnostic and Statistical Manual of Mental Disorders regarding cannabis use disorders, and has triggered another evaluation of cannabis treatment at LAU looking into specific pharmacotherapy.*

Keywords *UK, Cannabis, Treatment, Marijuana, SBNT, Social behaviour and network therapy*

Paper type *Research paper*

Introduction

Clients referred to the Leeds Addiction Unit (LAU) are routinely allocated to a programme of social behaviour and network therapy (SBNT). This manual guided therapy was originally designed for the UK Alcohol Treatment Trial (UKATT) (UKATT Research Team, 2001), the findings of which were published in 2005. It comprises elements of several socially focused treatment strategies which have been studied over recent years and found to be effective in treating addictions (Copello *et al.*, 2002), and it employs principles of cognitive-behavioural therapy and motivational enhancement therapy. The notion of combining therapy strategies for this client group appears to be gaining interest. The Marijuana Treatment Project in the USA evaluated the Brief Marijuana Dependence Counselling Protocol, which was designed to combine intervention strategies borrowed from motivational interviewing, cognitive-behavioural and clinical case management (Steinberg *et al.*, 2002). The results of the UKATT (UKATT Research Team, 2005) naturally raised the question as to whether SBNT could be effective in treating substance use disorders other than alcoholism. A review of the literature on SBNT showed limited evidence for using this treatment strategy outside of alcohol dependence

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(Copello *et al.*, 2006; Williamson *et al.*, 2007). The present study evaluated outcomes for clients treated with SBNT whose primary complaint was cannabis misuse.

Method

At initial assessment, new clients to the LAU are given a booklet to complete which includes a set of four self-reported questionnaires, which we used as outcome measures. Ideally, follow-up questionnaires are completed every three months following initial assessment, although response rates and their timing can vary considerably. They provide information on four main treatment outcomes. These are level of dependence (Leeds Dependence Questionnaire – LDQ), psychological distress (Clinical Outcomes in Routine Evaluation-Outcome Measured – CORE-OM), social satisfaction (Social Satisfaction Questionnaire – SSQ), and health status (EuroQol-EQ-5D). The LAU also participates in the reporting of Treatment Outcomes Profile (TOP) data to the National Drug Treatment Monitoring System. The TOP data for average number of days of cannabis use in the past four weeks and client's rating of overall quality of life were also used as outcome measures.

A retrospective analysis of pre-existing data were performed, using the four questionnaires used routinely at the LAU, as well as the above elements of the TOP as outcome measures. For all clients included in this evaluation, the referral substance was cannabis. In other words, this was the primary substance use disorder. Clients who were referred for other substances but also used cannabis were not included. The majority of referrals were made by the client him/herself, or their general practitioner. In some cases referrals were made by the community mental health team, general hospital, social services, or probation services.

Between 2005 and December 2011, all client data at the LAU were stored on a custom built Microsoft Access-based software program. These data include the scores for the questionnaires and TOP data mentioned above. We converted the data from a Microsoft Excel spreadsheet to the Statistical Package for Social Sciences version 20, which was then used for non-parametric statistical testing. Mann-Whitney and Kruskal-Wallis tests were used to determine whether significant differences exist between outcome measures at assessment, follow-up, and discharge.

Approval and ethics

An application was made to the Leeds and York Partnership NHS Foundation Trust Research & Innovation Department for approval of this service evaluation. Permission was granted for the project to be undertaken in July 2012 (Ref 2012/366/L).

At their initial assessment with the LAU, all clients whose data were included in the study gave consent to use these for monitoring, research, or statistical analysis, as long as identifiers were anonymised.

Results

Between October 2005 and November 2011 335 clients were referred to the LAU for cannabis use specifically, and of these 168 were seen by an addictions clinician at least once. The data included in this evaluation comprised 158 clients. There were no exclusions. The discrepancy in the number of clients seen (168) and the number included (158) is due to re-referrals (data not duplicated in data set). Of the 158 clients included in the evaluation, 63 per cent were male and 37 per cent female. Age at time of referral ranged from 17 to 57, with a mean age at time of referral of 31 years. The majority were classed as white British (69.6 per cent), while 16.5 per cent did not disclose their ethnicity.

In total, 20 clients who completed the LDQ, SSQ, EQ-5D, and CORE-OM at assessment also had follow-up data. For the TOP data, 59 clients had follow-up data, discharge data, or both, in addition to their initial assessment. Follow-up data were available for 27 clients, and discharge data for 28.

One of the four questionnaires (LDQ) showed a statistically significant improvement in scores between assessment and follow-up (Figure 1). The median LDQ score at assessment was 12.5 and 7.0 at follow-up ($p = 0.013$, Mann-Whitney *U* test). The other statistically significant results were from TOP data. For average number of days of cannabis use over the past four weeks, the median score was 21.0 at initial assessment, 10.0 at follow-up, and 0.0 at discharge ($p < 0.001$, Kruskal-Wallis test) (Figure 2). For client's rating of overall quality of life (Figure 3), the median scores were 12.0 at initial assessment, 13.0 at follow-up, and 16.0 at discharge ($p < 0.001$, Kruskal-Wallis test).

The median scores for the CORE-OM were 16.5 at assessment and 12.0 at follow-up ($p = 0.39$, Mann-Whitney *U* test). The median SSQ scores were 17.0 at assessment, and 18.0 at follow-up

Figure 1 Leeds dependence questionnaire (LDQ) scores

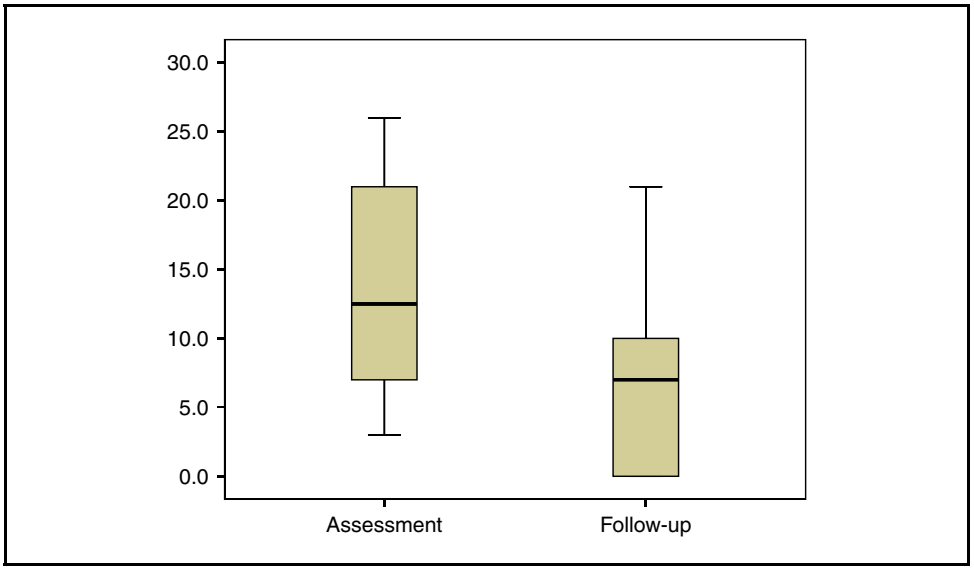


Figure 2 Treatment outcomes profile (TOP) – average number of days of cannabis use in the past four weeks

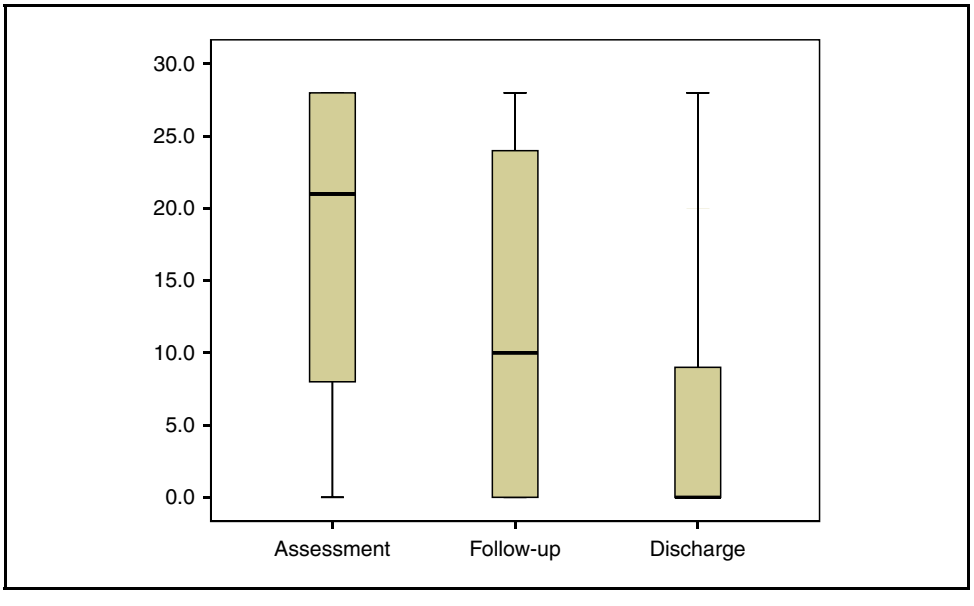
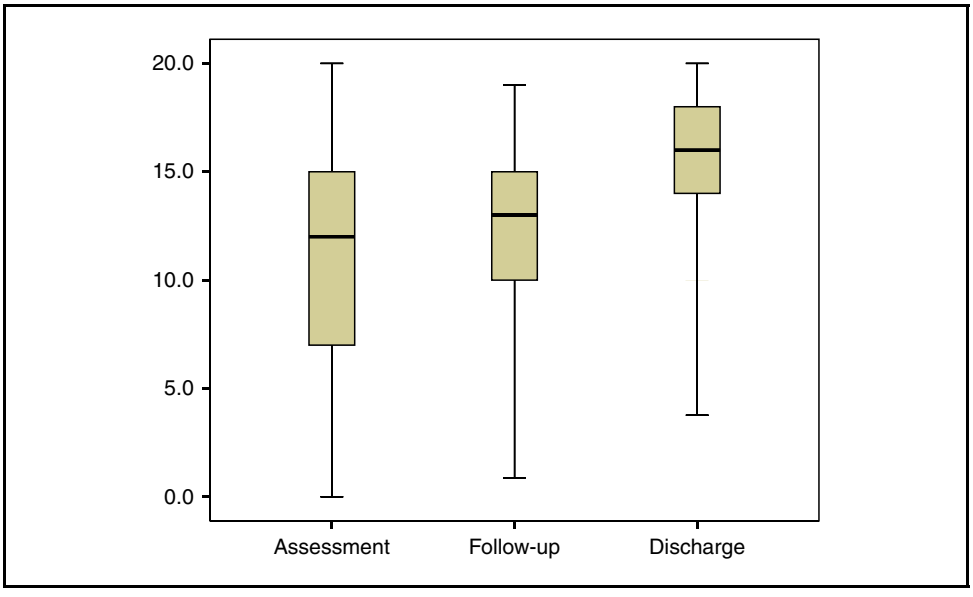


Figure 3 Treatment outcomes profile (TOP) – client's rating of overall quality of life



($p = 0.207$). The median EuroQol-EQ-5D score at assessment was 0.725 and 0.848 at follow-up ($p = 0.298$). None of these three questionnaires showed significant change between assessment and follow-up scores.

Discussion

According to the 2007 Adult Psychiatric Morbidity household survey in England (McManus *et al.*, 2009), most of those who had taken drugs in the last year had used cannabis. The prevalence of drug dependence was found to be 3.4 per cent, with 2.5 per cent dependent on cannabis only and 0.9 per cent on other drugs. The survey also reported that adults dependent on drugs were more likely than other adults to be receiving treatment for mental or emotional problems, and that 14 per cent of adults dependent on cannabis were receiving such treatment, compared with 7 per cent of those reporting no signs of drug dependence. "There is a growing demand for the treatment of cannabis use disorders and a paucity of evidence on best practice interventions" (Copeland, 2004).

Cannabis is of interest in psychiatry because of its association with various mental disorders. It is now accepted that cannabis use can be associated with the exacerbation of symptoms in the mentally ill, and even "trigger" illness in predisposed individuals (Andreasson *et al.*, 1987; Arseneault *et al.*, 2002; Degenhardt, 2003). The results of the Netherlands Mental Health Survey and Incidence Study (NEMESIS) indicated that cannabis use is an independent risk factor for the emergence of psychosis in those with an established vulnerability to psychotic disorders (Van Os *et al.*, 2002). Another study (Arseneault *et al.*, 2002) reported that the use of cannabis use in adolescence can increase the likelihood of experiencing schizophrenia symptoms in later life, and showed this to also be true when controlling for psychotic symptoms that precede the onset of cannabis use.

The findings of this study suggest that SBNT may be effective in the treatment of cannabis use disorders. Significant improvements were observed for the measures of level of dependence (LDQ), as well as the TOP outcomes for client's rating of overall quality of life and average number of days of cannabis use over the past four weeks. It is notable that the outcomes measuring the dimensions of addiction showed reduced dependence on cannabis although not much changed in the psychological and social dimensions. The latter are slower to improve, as is seen in clinical practice. Once the dependence is controlled the patient is faced with the social, personal and financial ramifications of their dependence and

has difficulty in addressing or adjusting to them. The professionals treating them should be mindful of this and the care and interventions should be tailored accordingly.

The findings also suggests that it might be worthwhile were a more detailed investigation to be undertaken comparing SBNT to other interventions to see their effectiveness in the treatment of cannabis misuse. Although there is no recommended pharmacological intervention for the treatment of cannabis use disorders, there have been studies looking at whether medication may be used to treat withdrawal symptoms related to cannabis misuse, as well as treating cannabis dependence itself. Examples include a double-blind, placebo-controlled, randomised trial which aimed to assess the efficacy of nefazodone and bupropion in reducing cannabis withdrawal symptoms (Carpenter *et al.*, 2009), and a randomised, double-blind, placebo-controlled study looking at the safety and efficacy of dronabinol in treating cannabis dependence (Levin *et al.*, 2011). Therefore, the possibility of treating cannabis use disorders pharmacologically in the future should not be discounted at this stage.

Finally, the Drug Misuse and Dependence UK Guidelines on Clinical Management (Department of Health (England) and the Devolved Administrations, 2007) make clear reference to the potential health consequences of cannabis use, which might include those related to tobacco smoking if this is used in conjunction with cannabis. Perhaps outcome measures looking at the potential health consequences specific to cannabis use should be introduced in the future.

Limitations

The relatively low response rate to follow-up and discharge questionnaires has resulted in a small sample size. This at least is in part due to variable response rates; follow-up data between clients were obtained at variable intervals. The rate of response to follow-up questionnaires for the data set analysed in this study is not uncommon for those collected on a routine basis by addiction centres. The discharge data could not be corroborated with toxicology due to the retrospective design of the study. This might have supported the subjective claim of abstinence and further strengthened the outcomes.

Conclusions

This project aimed to evaluate the treatment of cannabis use disorders at the LAU, and we have demonstrated that SBNT seems effective in treating this client group. This is of potential importance to the service and its clients, given the ongoing research into different strategies for treating cannabis use disorders, and the limited number of published studies on SBNT. The findings of the present evaluation have pointed to a lack of improvement in the measures of social satisfaction and health status, which can now be reviewed by the service with a view to addressing them.

According to the 2011 World Drug Report, “cannabis remains by far the most widely produced and consumed illicit substance globally” (United Nations Office on Drugs and Crime, 2011). The report, published by the United Nations, found that in 2009 between 2.8 and 4.5 per cent of the world population between the ages of 15-64 had used cannabis at least once in the past year. Treatment centres for substance misuse are increasingly seeing clients asking for help with their use of this drug, suggesting a need for increased focus on non-opioid and cocaine users. Cannabis use has serious consequences for physical and mental health. The American Psychiatric Association has recently made significant changes to the Diagnostic and Statistical Manual of Mental Disorders that are relevant to cannabis use disorders (American Psychiatric Association, 2013). First, the manual departs from the previously distinct categories of abuse and dependence, moving to one all-encompassing category, substance use disorders. Second, a category for cannabis withdrawal has been introduced, and both changes may have implications for future research and treatment options for the client group in question. An updated version of the International Classification of Diseases is expected to be approved by the World Health Organisation in the year 2015.

While there are current guidelines regarding the treatment of cannabis use disorders, controversy still exists and research into treatment strategies is ongoing. We have demonstrated that SBNT can be effective in treating cannabis use disorders. Our study also adds to the evidence for using SBNT in substance use disorders other than alcoholism, and our findings suggest that similar investigations be undertaken to examine effects with other substance use disorders such as opiate dependence, club drug misuse, and prescription drug dependence.

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About the authors

Dr Gil Kovac is a Specialty Registrar in General Adult Psychiatry in London. He has a special interest in substance misuse, and is currently in a 12 month post at the Hammersmith & Fulham Community Drug & Alcohol Service. Dr Gil Kovac is the corresponding author and can be contacted at: kovacg@hotmail.com

Dr Yasir Abbasi is a Consultant Psychiatrist in Addictions at the Mersey Care NHS Trust. He is the Clinical Lead for Windsor Clinic (inpatient detoxification unit). His interests include dual diagnosis, and addiction to prescribed and over the counter medications.

Dr David Owens is an Associate Professor in Psychiatry at the University of Leeds and an Honorary Consultant Psychiatrist with Leeds and York Partnership NHS Foundation Trust. He is the Director of the University of Leeds MSc programme – Health Research – and an active Mental Health Researcher.