Cannabis use and mental health-related quality of life among individuals with depressive disorders

Itay Aspis [a,*], Daniel Feingold [b,c,d], Mark Weiser [a,c], Jurgen Rehm [e,f,g], Gal Shoval [a,h],
Shaul Lev-Ran [a,b,e]

[a] Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel
[b] Addiction Medicine and Dual Diagnosis Services, Department of Psychiatry, Sheba, Medical Center, Tel Hashomer, Israel
[c] Department of Psychiatry, Sheba Medical Center, Tel Hashomer, Israel
[d] Ariel University, Israel
[e] Social and Epidemiological Research Department, Centre for Addiction and Mental Health, Toronto, Ontario, Canada
[f] Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada
[g] Technische Universität Dresden, Klinische Psychologie & Psychotherapie, Dresden, Germany
[h] Geha Mental Health Center, Petah Tikva, Israel

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ABSTRACT

Cannabis is the most widely used illicit substance among individuals with depressive disorders. This study aimed to evaluate whether among individuals with depressive disorders, higher frequency of cannabis use would be associated with poorer Quality of Life (QoL), based on a large nationally representative US sample. Individuals with depressive disorders ($N=3416$) were divided into categories according to no use ($N=3096$), occasional use (less than weekly, $N=176$) and regular (at least weekly, $N=144$) use of cannabis in the past 12 months. QoL was assessed using the Short-Form 12 (SF-12) questionnaire. Women who used cannabis regularly had a significantly lower SF-12 Mental Component Summary score (MCS) compared to non-users, with a mean difference of 0.4 Standard Deviations (SDs). Comparison of subscale scores showed no significant differences. No significant difference was noted when comparing women who used cannabis occasionally to non-users. No differences were found among men when comparing MCS and mental subscale scores of both regular and occasional users to non-users. Our findings highlight the importance of taking gender and the frequency of cannabis use into account, when assessing functional and emotional aspects of cannabis use among individuals with depressive disorders.

1. Introduction

Cannabis is the most widely used illicit substance worldwide (Degenhardt and Hall, 2012), and is one of the most commonly used substances among individuals with psychiatric disorders (Lev-Ran et al., 2013a). Depressive disorders (such as Dysthymia and Major Depressive Disorder [MDD]) are among the most prevalent psychiatric disorders (Kessler et al., 2005), with reported rates of co-occurring lifetime cannabis use as high as 60% (Chen et al., 2002). Several studies have reported a significant association between cannabis use and future incidence of depression (Bovasso, 2001; Fergusson and Horwood, 1997), while other studies reported that cannabis users and non-users are equally prone to develop MDD at follow-up (Brook et al., 2002; Degenhardt et al., 2013). A recent meta-analysis encompassing 14 longitudinal studies that explored the association between cannabis and depression (Lev-Ran et al., 2013b) concluded that cannabis use, particularly heavy use (defined as individuals with either (1) DSM-IV Cannabis Use Disorders (CUDs) or (2) self-report of at least weekly cannabis use), may be associated with an increased risk for developing a depressive disorder. Inversely, some evidence indicates that MDD may lead to initiation of cannabis use, perhaps as a means of "self-medication" (Feingold et al., 2015). While much has been written on the association between depressive disorders and cannabis use, the functional significance of this association has received little attention and is yet not well-understood. For example, though cannabis use has been found to be associated with decreased social functioning in the general population (Fergusson and Boden, 2008), less is known about the functional effects of cannabis use on individuals with depressive disorders.

Quality of Life (QoL) indices are recognized measures to estimate the impact of various social, emotional and physical parameters on functioning and well-being while integrating the

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* Corresponding author.

patients' subjective experience into account, rather than putting emphasis only on symptoms (World Health Organization, 1995). Health-related QoL is a broad concept, which includes self-perceived mental and physical disability as well as pain, vitality, social functioning and role functioning. In recent years, increasing attention has been given to measuring aspects of daily life as a suitable complement to classic indicators regarding effects of substance use and abuse (i.e. physiological, psychological and legal consequences of substance use) (Gonzalez-Saiz et al., 2009). The association between cannabis use and mental-health related QoL in the general population has been recently examined (Lev-Ran et al., 2012a), indicating that cannabis users report poorer mental-health related QoL compared to non-users. Cannabis users reported experiencing poorer general mental health, lower levels of vitality and accomplishing less due to emotional problems. Generally, these differences were greater among women compared to men. Among individuals with anxiety disorders, regular (i.e., at least weekly) use of cannabis was associated with lower mental-health related QoL (compared to non-users), whereas occasional (i.e., less than weekly) use was not (Lev-Ran et al., 2012b).

In this study we aimed to explore the association between cannabis use and health-related QoL among individuals with depressive disorders. Moreover, we accounted for different frequencies of cannabis use, as these have been shown to be differentially associated with lower QoL scores (Lev-Ran et al., 2012a). The previous research regarded the association between cannabis use and QoL in the general population and among individuals with anxiety disorders, while this study focuses on individuals with depressive disorders. Based on the previous research, our hypothesis was that among individuals with depressive disorders, co-occurring cannabis use would be associated with poorer QoL. We further hypothesized that higher frequency of cannabis use would be associated with poorer mental health related QoL. Finally, based on gender differences in the association between cannabis use and QoL in the general population, we also hypothesized that among cannabis users, women would report poorer mental health related QoL compared to men.

Those hypotheses were tested by conducting a population-based study which analyzed self-reported data regarding individuals with depressive disorders (Major Depressive Disorder and Dysthymia) and co-occurring cannabis use.

2. Methods

2.1. Sample

The population of this research is based on Wave 1 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) (2001–2002), the largest study to-date on substance use and psychiatric disorders conducted by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) (Grant et al., 2003). Face-to-face interviews were conducted with 43,093 adults (response rate=86.7%), aged 18 years and older from the civilian non-institutionalized population residing in the United States, including the District of Columbia, Hawaii and Alaska. The NESARC sample was weighted to adjust for probabilities of selection of a sample housing unit or housing unit equivalent, the non-response at the household and person levels, the selection of one person per household and the oversampling of African-Americans, Hispanics and young adults (ages 18–24). The weighted data were post-stratified and adjusted to match the target population based on the 2000 decennial census in terms of region, age, sex, race and ethnicity (Huang et al., 2006).

2.2. Measures

2.2.1. Interview and diagnoses

Data regarding psychiatric diagnoses were obtained using the Alcohol Use Disorder and Associated Disabilities Interview Schedule – DSM-IV Version (AUDADIS-IV). AUDADIS-IV assesses axis I disorders and substance (including cannabis) use disorders. It includes a comprehensive list of symptom questions that separately operationalizes DSM-IV criteria for MDD and Dysthymia. The AUDADIS-IV has been reported to have good reliability and validity both in the United States and internationally, with fair to good test-retest reliability for DSM-IV mood disorders (kappa=0.58–0.65) (Grant et al., 2003). Intraclass correlation coefficient for AUDADIS-4 for Major Depression symptoms was 0.71 (95% CI, 0.64–0.77), and for dysthymic symptoms was 0.57 (95% CI, 0.51–0.63). Details regarding sampling, purpose and weighting have been previously published (Grant et al., 2003).

Approximately 1800 experienced lay interviewers from the U.S. Census Bureau administered NESARC using laptop computer–assisted software that included built-in skip, logic, and consistency checks. On average, the interviewers had 5 years of experience working on Census and other health-related national surveys. The interviewers completed 10 days of extensive training. This was standardized through centralized training sessions under the direction of the National Institute on Alcohol Abuse and Alcoholism and Census headquarters staff (Grant et al., 2004). Characteristics of interviewers, training and field quality control have been described elsewhere (Compton et al., 2004).

2.2.2. Depressive disorders and cannabis use

Individuals with depressive disorders were defined as Individuals meeting diagnostic criteria for either MDD or Dysthymia within the past year prior to the survey. Since substance use and medical disorders independently affect QoL (Turner-Bowker and Ware, 2002), we included only primary illness, and excluded any illness or substance-induced depressive disorders as diagnosed in the AUDADIS-IV. Primary (non substance-induced) depressive disorders were defined if: (1) the respondent did not use alcohol or drugs in the previous 12 months; (2) the episode(s) did not occur in the context of drug or alcohol intoxication or withdrawal; (3) the episode(s) started before initiation of drug or alcohol or (4) the episode(s) began after drug or alcohol consumption began, but persisted for more than 1 month after cessation of intoxication or withdrawal.

"Cannabis use" in this study referred to cannabis use in the last 12 months, sub-divided into three groups according to their frequency of cannabis use: "regular users" (at least weekly use), "occasional users" (less than weekly use), and non-users. This categorization is based on previous studies and meta-analyses which categorized the frequency of cannabis use when examining the association between cannabis use and mental illness, and is widely used in cannabis-related research (Hall and Degenhardt, 2009; Lev-Ran et al., 2014; Moore et al., 2007; Patton et al., 2002). Individuals who did not provide information regarding depressive disorders or cannabis use were excluded.

2.2.3. Health related quality of life

Health related QoL was assessed using the Short-Form 12-Item Health Survey, version 2 (SF-12), a short, efficient form of the SF Health Survey. Items in the SF-12 are self-reported numerical scores addressing emotional, physical, social and work related issues. It is a brief assessment of functional health status, well-being and QoL and has been shown to be particularly valid and useful in studies with large sample sizes (Ware et al., 1996). The SF-12 scoring employs a linear T-score transformation with a mean score of 50 and subscales and a standard deviation of 10. Higher values