Marijuana and Madness

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Third Edition

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Preface

Since the first and second editions of *Marijuana and Madness* were published in 2004 and 2012, respectively, interest in cannabis, cannabinoids, and mental health has continued to grow. Since the last edition of this book, the landscape of cannabis has changed. The strength of cannabis has increased, with a number of highly potent forms of cannabis-derived products becoming available; cannabis laws have been liberalized in many jurisdictions; and the large-scale commercialization of cannabis has begun. In parallel, the science of the endocannabinoid system has advanced. Given the changes in legality, availability, and potency of cannabis, the adverse consequences of cannabis are likely to be seen more frequently in contemporary society than in studies conducted decades ago. Indeed, the topic has moved from being of interest mainly to specialists in psychosis and addiction to being a public mental health concern. The third edition of this book addresses these changes and more. The first edition had 13 chapters and the second edition had 21 chapters. This third edition has 32 chapters, with updates to core chapters from the first and second editions and a number of entirely new chapters. Consistent with the growing awareness of the consequences of cannabis exposure, the scope of the book has expanded beyond psychosis, to include bipolar disorder, depression, anxiety disorders, and cannabis use disorder.

The first part of the book covers the pharmacology of cannabis and the endocannabinoid system. Mackie reviews how cannabis works in the brain, followed by an overview of the endocannabinoid system (Winters and Patel), and synthetic cannabinoids (Fattore and Marti). These chapters set the stage for chapters addressing some of the most pressing concerns about the acute and chronic consequences of cannabis use.

Addressing the changing face of cannabis, Hasin provides an overview of the epidemiology of cannabis use and cannabis use disorder, followed by a review of the changing potency of cannabis (Freeman and Craft). Then, Hall and Degenhardt review the health policy implications of the relationship between cannabis and mental illness.

Any theory associating exposure to cannabis with long-term negative mental health consequences needs to have biological plausibility; that is, there needs to be a plausible underlying biological mechanism. If the endocannabinoid system is involved in adolescent brain development, then perturbation of this system at critical periods of brain development may have far reaching consequences. The impact of cannabis exposure on the adolescent brain is discussed in animals (Zamberletti and Rubino) and humans (Ferland et al.). Greenwood and colleagues review the short- and long-term effects of cannabis on cognition. As cannabis is being increasingly used by women during pregnancy, Paul et al. review the impact of prenatal cannabis exposure on neurodevelopment and behaviour.

The relationship between cannabis and anxiety (Lethbridge et al.), depression and suicidal behaviour (Gobbi), and bipolar disorder (Pinto and Ziak) is covered in the ensuing section, teasing apart cause and effect and considering implications for treatment.

Radhakrishnan et al. review the evidence on the relationship between cannabis and psychosis proneness. Going further, Spinazzola et al. discuss factors that might predispose cannabis using individuals to psychosis and suggest that the link between cannabis use and schizophrenia is unlikely to be just the result of a genetic predisposition, it is more likely the result of an interplay between genes and the environment. Martin-Schnakenberg and colleagues address experimental and other evidence showing that cannabis and cannabinoids are linked to positive, negative, and cognitive symptoms, as well as producing impairments in electrophysiological indices of information processing.

Extending the cannabis/psychosis theme, Power and colleagues address the important and contentious

question in the field as to whether cannabis actually causes schizophrenia. Colbert and Johnson review genetic explanations for the link between cannabis and schizophrenia. Pearlson and Keshavan provide evidence suggesting the possibility of a cannabis associated psychosis subtype.

Beyond the hypothesis linking exposure to exocannabinoids such as cannabis to psychosis, there is emerging evidence that the endocannabinoid system may be altered in schizophrenia. Sundram et al. and Morrison review the post-mortem, animal and in-vivo evidence on the state of the endocannabinoid system in schizophrenia.

One of the vexing clinical conundrums is the discrepancy between the "benefits" of cannabis reported by users and the negative consequences on the course and expression of schizophrenia observed by clinicians. Ganesh et al. review the acute effects of cannabis and cannabinoids in people with psychotic illness, whilst Schoeler provides an overview of the impact of cannabis on the long-term course of schizophrenia.

Several new chapters addressing emerging issues relevant to cannabis use have been added. Trotta et al. review the growing interest in the association between cannabis exposure and violence, while a number of chapters focus on cannabis addiction. Curran and colleagues review the neurobiology, expression, and treatment of cannabis use disorder, and in related chapters Metrik and McCarty review the characteristics, course, and treatment of cannabis withdrawal syndrome, while Ganesh and Agrawal provide a synopsis of the genetics of cannabis addiction. In a clinically-focused chapter, Coles et al. address potential treatments for cannabis misuse in individuals with psychosis.

Given that cannabis is often used with tobacco, especially in Europe, understanding the relationship between the two is important. Rabin et al. review the interactions between cannabis and withdrawal. There is increasing recognition that people use cannabis to facilitate sleep, and that the endocannabinoid system may be involved in sleep; Skosnik and Surti assess the role of cannabis and the endocannabinoid system in sleep.

Lastly, beyond the recreational use of cannabis, there is increasing interest in the 'medical use' of cannabis. Leweke and Rohleder address the intriguing possibility that cannabidiol (CBD) may have beneficial effects in schizophrenia, while De Toffol and colleagues review the evidence on the 'medical use' of cannabis.

As editors, we are excited at the richness of the material provided to us by the contributors, all leaders in their field. We hope that readers will be likewise impressed at the progress that has been made in our understanding of the relationship between cannabis, cannabinoids, and neuropsychiatric disorders.