

## Presentation of Findings on The Harms of Cannabis Use Disorder

The Office of the Chief Psychologist, Ministry of Home Affairs organized the first-ever Harm Prevention Seminar on the 20<sup>th</sup> of January 2020 to share their research findings and experiences in fighting drug abuse. The seminar held at the Lifelong Learning Institute was attended by about 300 academics, professionals from public agencies and community partners who work in the field of drug prevention and rehabilitation.



Along with other noted academicians and practitioners, I had the opportunity to present the findings of a systematic review done by the Research Division, IMH on the harms of cannabis use disorder.

The main aims of our study were to conduct a systematic review of existing literature on the neuroplasticity of the brain (reorganize by forming new neural connections) with regards to **Cannabis Use Disorder (CUD)** with the intent to examine the extent of neurocognitive (mental action or process of acquiring knowledge and understanding), brain structural and functional changes as a result of CUD. The findings of our study are briefly summarized in the following paragraphs.

Cannabis is the most widely abused drug worldwide with an annual prevalence of 3.8% and 183 million annual users in 2015. According to the 2008 National Survey in the USA, most new cannabis users were adolescents. In the USA among those aged 12 years and above, approximately 44.0% had used marijuana in their lifetime, and 13.9% had used it in the past year. An estimated 10% of persons who have ever used cannabis are projected to become future daily users.

Those with cannabis dependence show significant neuropsychological deficits due to neurotoxic effects of persistent cannabis use on neurocognitive domains like- attention, decision, making, memory, and impulse control. Cannabis use and dependence cause alterations and negative effects on brain structure and connectivity. For example, changes in the hippocampal region of the brain affect information processing and short-term memory in those with CUD, while an increase in the dopamine concentration in specific brain regions leads to the strengthening of brain circuits of habit formation and reward processing.

The cognitive impairments are negatively associated with duration of use, frequency of use and age of onset of cannabis use - cannabis use in adolescence may be more detrimental – as brain is in the maturational period. Cessation from cannabis abuse may not completely restore neuropsychological impairments. E.g., emotional processing to negative stimulus was altered even in abstinent cannabis dependents as compared to normal controls.

Lastly, quality of life or well-being among those with cannabis use disorder was significantly lower compared to healthy controls.

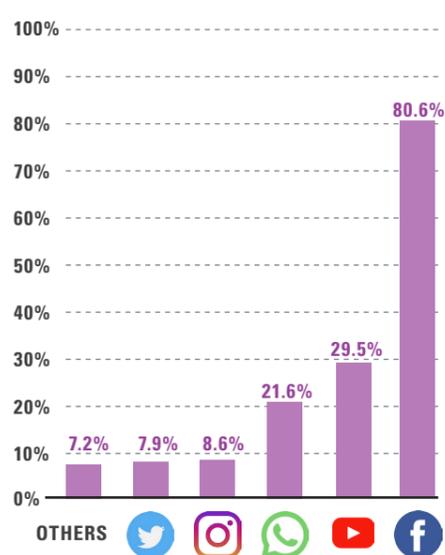
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## Social media use in schizophrenia

The phenomics team from the Research division at IMH conducted this study to examine the prevalence of social media use and its association with symptoms in individuals with schizophrenia.

Out of the 265 study participants recruited from the outpatient clinics at IMH, **slightly more than half (n=139, 52.5%) used social media** in the last week. Fifty-six (21.1%) of the study participants used more than one social media site. **Facebook was the most popular social media site, followed by You Tube and WhatsApp.**



Percentage of participants who used the social media site, n=139

Demographic and clinical characteristics of individual with schizophrenia likely to use social media



- > Younger Age
- > Educated above secondary level
- > Higher household income
- > Less severe symptoms

Participants who were younger and had above secondary level of education were found to be more likely to use social media, similar to the trend seen in general population. Higher education level would facilitate understanding and use of internet and devices like smartphones or computers for social media use. Further, higher household income was associated with more likelihood of use of social media, as reported in general population. Higher income might facilitate the accessibility of internet and devices needed to access it.

Severity of negative symptoms, specifically that of motivation and pleasure associated with social interactions, was negatively associated with likelihood of social media use. It is possible that social interactions are anticipated as less pleasurable in schizophrenia, leading to less efforts to make social contacts both in real life and through social media. Severity of depressive symptoms was also negatively related to social media use in our sample; depressed individuals may have lesser motivation to socialize.

Our study has important implications. Social media is becoming an increasingly popular platform for socializing; therefore, it would be useful to consider the assessment of social interactions via social media in the clinical assessment of social functioning in individuals with schizophrenia. Secondly, our results might guide the development of treatment programs supported by social media platforms for individuals with schizophrenia.

**Younger patients with above secondary level education, higher family income and lower symptom severity are likely to be avid users of social media** and would be suitable candidates to receive illness related information or clinical interventions via social media.

More information about the study can be found at <https://doi.org/10.1371/journal.pone.0225370>

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