



# **A Randomised Controlled Feasibility Study of a Brief Online Intervention Targeting Cannabis-Related Psychotic Experiences**

Matt Sopp (3<sup>rd</sup> Year Trainee Clinical Psychologist)

Supervised by Dr Katherine Newman-Taylor and Dr Thomas Richardson



# Introduction

The cannabis – psychotic experiences link is now well established

- ▶ Longitudinal studies show cannabis use to predict psychotic experiences (Godin, 2022).
- ▶ Increased risk if used daily, at an early age, and if strong cannabis is used (Pardo et al., 2021; Macroni et al., 2016)
- ▶ High prevalence of use in people experiences first-episode and with dx of schizophrenia (Myles et al., 2016, Di Forti et al., 2019)
- ▶ Worse prognosis for those with a psychotic diagnosis (Schoeler et al., 2016)



# Cognitive processes in psychotic experiences

- ▶ External attribution- those with clinically relevant psychotic experiences more likely to attribute anomalous experiences on external sources (Ranjbar et al., 2011; Kang et al., 2010; Livet et al., 2020)
- ▶ Cognitive fusion- Believability of hallucinations mediated related distress (Gaudino et al., 2010) and gen pop studies cognitive fusion mediated paranoia and related distress (Newman-Taylor et al., 2020)





# Current psychological interventions

- Current psychological interventions largely focus on cannabis reduction using CBT and/or MI approach.
- These have had little success in reducing psychotic experiences or improving functioning and inconsistent results re cannabis reductions (Barrowclough et al., 2014; Hjorthøj et al., 2014; Madigan et al., 2013).
- Many trials do not even report or measures psychosis related outcomes (Coronado-Montoya et al., 2020).



# Study aims

- ▶ Assess the feasibility and acceptability of an online intervention for cannabis-related psychotic experiences
- ▶ Provide preliminary estimates of the effects of the intervention
  - ▶ Key psychological processes (cognitive fusion and external attribution)
  - ▶ Outcomes (psychotic experiences, paranoia and related distress)

# Methods

- ▶ Randomised controlled design (intervention vs waitlist control)
- ▶ Collected outcomes over 3 time points (baseline, post intervention/ 7 weeks, 7- week follow up/ 14 weeks post baseline)
- ▶ Recruited participants from Prolific
  - ▶ Screened for cannabis use and paranoia, wariness of others, suspiciousness
- ▶ Measures
  - Feasibility and acceptability
  - Psychotic experiences (PQ-16, PCQ), Attributions (IPSAQ), Cognitive fusion (CFQ), Functioning (WSAS), Substance dependence (SDS), Readiness to change (Readiness Ruler).



# The online-intervention

1. Managing the Impact of Cannabis on Paranoia: an Online Workbook
  2. Me and My Cannabis Use
3. Understanding Why Cannabis Use Can Make Me Paranoid
  4. React Differently: Thinking of Other Explanations
  5. React Differently: Stepping Back When I Get Lost in Difficult Thoughts
    6. React Differently: New Ways of Coping
    7. Summing Up and Planning for the Future

## Mindfulness

We are going to practice mindfulness throughout these sessions.

Being mindful means learning how to focus our attention on the present moment, whilst noticing thoughts, feelings and sensations without judging them.

Mindfulness has been studied a lot and there is good evidence that it can help in many different mental health problems.

During these sessions, you will practice mindfulness to help reduce stress and strong emotional reactions, and to increase your ability to think creatively and flexibility.

Each session in this intervention will end with a short mindfulness exercise.

This first video will tell you a bit more about mindfulness.





What happened when you did this?

Did you notice any sense of separation from the thought, as if you were able to step back from it?

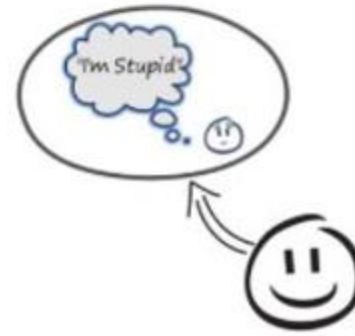
Maybe it didn't feel as powerful?



*I am Stupid*



*I'm having the thought  
"I'm Stupid"*



*I'm noticing  
I'm having the thought  
"I'm Stupid"*

Try this a few more times with other difficult thoughts that you sometimes get stuck with.

Each time adding, "I'm noticing I'm having the thought that ...."

You could even try typing them out below:

## Thinking of other explanations

Similar to mindfulness, each week we are going to practice the habit of thinking about lots of explanations for different situations.

Look at the picture below for 30 seconds and then in the text box beneath write down as many ways as you can to explain what might be going on.



Tell us what might be going on in the picture above.

List as many explanations as possible.

- smiling face
- bowl
- boat
- sled
- rocking chair
- elephant's head



Would you like to have a guess now?

Yes


No



0%



100%



# Results

- ▶ The intervention was both feasible and acceptable
  - ▶ Recruited 92% of those who met study requirements
  - ▶ 85% of participants completed all 7 online sessions
  - ▶ Positive feedback (>70% rated as helpful, easy to understand, likely to use skills in future, likely to recommend)

“I really appreciated this study, it was easy to do and I genuinely learned a lot about myself and my behaviour”





# Results cont...

- **Preliminary outcomes**

- Significant increase in substance dependence after intervention (group and time)
- Significant increase in readiness to change in intervention group over time

- **Further exploratory analyses...**

- When only those with higher psychotic experiences were selected (PQB>5)...significant reduction in related distress in the intervention group over time.



# Conclusions

- ▶ Limitations
  - ▶ Low threshold for inclusion criteria
  - ▶ Participants recruited through crowdsourcing platform
  - ▶ Failed to record whether p's were receiving other treatments
  - ▶ Failed to directly measure cannabis use frequency
- ▶ However...
  - ▶ Main objective was to test feasibility and acceptability
  - ▶ Promising initial outcomes- need to be tested on larger scale



## Future work...

- Option to test in specific populations – ARMS, FEP
- Could be used as a preventative measure for those who do not meet clinically relevant criteria
- Option to be delivered online or in person (for example as a workbook)

# References

Barrowclough, C., Marshall, M., Gregg, L., Fitzsimmons, M., Tomenson, B., Warburton, J., & Lobban, F. (2014). A phase-specific psychological therapy for people with problematic cannabis use following a first episode of psychosis: a randomized controlled trial. *Psychological medicine*, *44*(13), 2749-2761.

Coronado-Montoya, S., Morissette, F., Abdel-Baki, A., Fischer, B., Côté, J., Ouellet-Plamondon, C., ... & Jutras-Aswad, D. (2021). Preventive interventions targeting cannabis use and related harms in people with psychosis: A systematic review. *Early Intervention in Psychiatry*, *15*(6), 1439-1453

Di Forti, M., Quattrone, D., Freeman, T. P., Tripoli, G., Gayer-Anderson, C., Quigley, H., ... & van der Ven, E. (2019). The contribution of cannabis use to variation in the incidence of psychotic disorder across Europe (EU-GEI): a multicentre case-control study. *The Lancet Psychiatry*, *6*(5), 427-436.

Freeman, D., McManus, S., Brugha, T., Meltzer, H., Jenkins, R., & Bebbington, P. (2011). Concomitants of paranoia in the general population. *Psychological medicine*, *41*(5), 923-936.

Godin, S. L., & Shehata, S. (2022). Adolescent cannabis use and later development of schizophrenia: An updated systematic review of longitudinal studies. *Journal of clinical psychology*.

Hjorthoj, C., Baker, A., Fohlmann, A., & Nordentoft, M. (2014). Intervention efficacy in trials targeting cannabis use disorders in patients with comorbid psychosis systematic review and meta-analysis. *Current Pharmaceutical Design*, *20*(13), 2205-2211.

Kang, J. I., Park, J. Y., Kim, K. R., Lee, S. Y., & Lee, E. (2010). Attribution bias in ultra-high risk for psychosis and first-episode schizophrenia. *Schizophrenia research*, *118*(1-3), 54-61.



# References

- Linszen, M. M., de Boer, J. N., Schutte, M. J., Begemann, M. J., de Vries, J., Koops, S., ... & Sommer, I. E. (2022). Occurrence and phenomenology of hallucinations in the general population: A large online survey. *Schizophrenia*, 8(1), 1-11.
- Livet, A., Navarri, X., Potvin, S., & Conrod, P. (2020). Cognitive biases in individuals with psychotic-like experiences: A systematic review and a meta-analysis. *Schizophrenia Research*, 222, 10-22.
- Madigan, K., Brennan, D., Lawlor, E., Turner, N., Kinsella, A., O'Connor, J. J., ... & O'Callaghan, E. (2013). A multi-center, randomized controlled trial of a group psychological intervention for psychosis with comorbid cannabis dependence over the early course of illness. *Schizophrenia research*, 143(1), 138-142.
- Marconi, A., Di Forti, M., Lewis, C. M., Murray, R. M., & Vassos, E. (2016). Meta-analysis of the association between the level of cannabis use and risk of psychosis. *Schizophrenia bulletin*, 42(5), 1262-1269
- Myles, H., Myles, N., & Large, M. (2016). Cannabis use in first episode psychosis: Meta-analysis of prevalence, and the time course of initiation and continued use. *Australian & New Zealand Journal of Psychiatry*, 50(3), 208-219.
- Newman-Taylor, K., Richardson, T., Sood, M., Sopp, M., Perry, E., & Bolderston, H. (2020). Cognitive mechanisms in cannabis-related paranoia; Initial testing and model proposal. *Psychosis*, 12(4), 314-327.
- Pardo, M., Matalí, J. L., Sivoli, J., Regina, V. B., Butjosa, A., Dolz, M., ... & Usall, J. (2021). Early onset psychosis and cannabis use: Prevalence, clinical presentation and influence of daily use. *Asian journal of psychiatry*, 62, 102714.

# References

- Randjbar, S., Veckenstedt, R., Vitzthum, F., Hottenrott, B., & Moritz, S. (2011). Attributional biases in paranoid schizophrenia: Further evidence for a decreased sense of self-causation in paranoia. *Psychosis*, 3(1), 74-85.
- Schoeler, T., Monk, A., Sami, M. B., Klamerus, E., Foglia, E., Brown, R., ... & Bhattacharyya, S. (2016). Continued versus discontinued cannabis use in patients with psychosis: a systematic review and meta-analysis. *The Lancet Psychiatry*, 3(3), 215-225.
- Schoeler, T., Monk, A., Sami, M. B., Klamerus, E., Foglia, E., Brown, R., ... & Bhattacharyya, S. (2016). Continued versus discontinued cannabis use in patients with psychosis: a systematic review and meta-analysis. *The Lancet Psychiatry*, 3(3), 215-225.
- Van Os, J., Linscott, R. J., Myin-Germeys, I., Delespaul, P., & Krabbendam, L. J. P. M. (2009). A systematic review and meta-analysis of the psychosis continuum: evidence for a psychosis proneness–persistence–impairment model of psychotic disorder. *Psychological medicine*, 39(2), 179-195.