

# Investigating the effects of COVID-19 and the UK lockdown on Impulse Control Behaviours in people with Parkinson's

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## Introduction

### Impulse Control Behaviours (ICBs)

ICBs involve pleasurable behaviours carried out excessively, compulsively and repetitively. They are characterised by a loss of control and a lack of/no consideration to adverse consequences<sup>1,2</sup>.

- Over a 5-year cumulative period, ~46% of People with Parkinson's (PwP) experience ICBs<sup>3</sup>.
- ICBs can be associated with factors such as dopamine agonist medications, anxiety, impulsivity, apathy and certain demographics<sup>1</sup>

### COVID-19 and the UK lockdown

- There have been enormous impacts on all aspects of every day life. There have been increases in stress and anxiety in the general population<sup>4</sup>.
- PwP already experience higher levels of anxiety<sup>5</sup> and may experience additional impacts of COVID-19.

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## Method

186 PwP and 61 Healthy Controls completed the online survey.

### Participants completed the following measures:

- **ICBs** – QUIP (Questionnaire for Impulsive-Compulsive Disorders) Completed twice – referring to 'before' and 'since' the participants personal chosen COVID-19 date.
- **Anxiety** – STAI (State Trait Anxiety Index). Trait referred to 'Before' and state referred to 'Since' COVID-19.
- **Impulsivity** – BIS (The Barratt Impulsiveness Scale)
- **Apathy** – SAS (Starkstein Apathy Scale)
- **Social Impact of COVID-19**

There were also open questions asking PwP about their experiences of anxiety and ICBs during the pandemic.

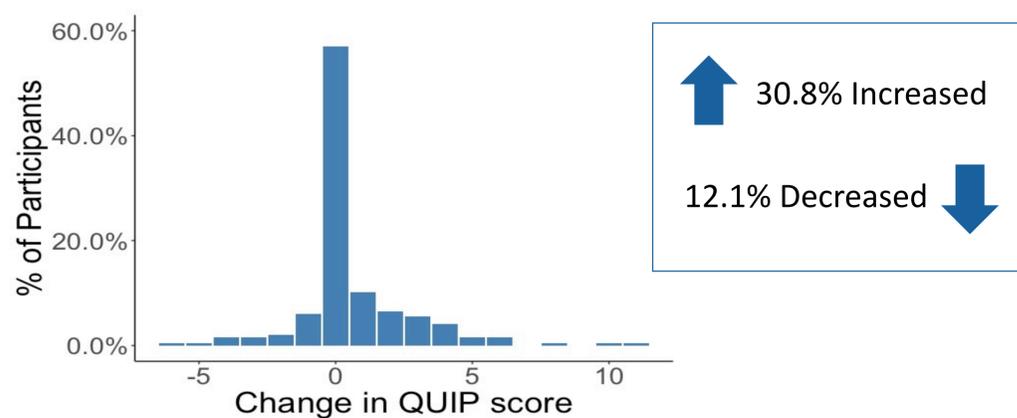
## Predictions

- The large changes to everyday life due to COVID-19 will cause changes in ICBs.
- Anxiety (and other factors) may contribute to these changes.

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## Results

Overall, PwP QUIP scores **significantly increased** since COVID-19 ( $Z = 0.293, p < .001$ ) and there was an increase in ICB prevalence.



Results from a thematic analysis on the answers to the open questions were consistent with these results.

ICB	Before	Since
At least one	37.37%	44.95%
Multiple	10.60%	12.63%
Pathological Gambling	2.02%	2.53%
Hypersexuality	20.71%	23.23%
Compulsive Buying	15.15%	14.14%
Binge eating	12.63%	20.71%

PwP showed a significant increase in anxiety (37.7 vs 40.2) ( $Z = .352, p < .001$ )

- Modelling (CLMs) was used to examine the influence of anxiety, impulsivity and apathy on ICBs.
- CLMs revealed that when modelled with 'Before' QUIP scores, state anxiety ( $p = .017$ ), impulsivity ( $p = .017$ ) and apathy ( $p = .034$ ) were significant predictors of 'Since' QUIP scores.
- These models were all significantly better fit ( $p = .016, .016$  and  $.034$ ) of the data than a model containing only 'Before' QUIP scores as a predictor.
- Impulsivity was the strongest predictor overall.

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## Discussion + Conclusions

### COVID-19 has led to an increase in ICBs in PwP.

- Anxiety also increased in PwP during COVID-19
- ICBs and changes in ICBs were associated with anxiety, impulsivity and apathy – these are possible targets for interventions to reduce ICBs.
- Changes in ICBs and anxiety varied considerably across participants during COVID-19 – individualised reassessments of PwP needs are important going forward.
- ICBs may increase in PwP during times of stress/adverse life events – ICBs should be monitored more closely during these times.

## References

<sup>1</sup>Gatto, E. M., & Aldinio, V. (2019). Impulse Control Disorders in Parkinson's Disease. A Brief and Comprehensive Review. *Frontiers in neurology*, 10.  
<sup>2</sup>Weintraub, D., & Claassen, D. O. (2017). Impulse control and related disorders in Parkinson's disease. In *International review of neurobiology* (Vol. 133, pp. 679-717). Academic Press.  
<sup>3</sup>Erga, A. H., Alves, G., Tysnes, O. B., & Pedersen, K. F. (2020). Evolution of impulsive-compulsive behaviors and cognition in Parkinson's disease. *Journal of Neurology*, 267(1), 259-266.

<sup>4</sup>Shevlin, M., McBride, O., Murphy, J., Miller-Gibson, J., Hartman, T., Levita, L., Mason, L., Martinez, A., McKay, R., Stocks, T., Bennett, K., Hyland, P., Karatzias, T. & Bentall, R. (2020) Anxiety, Depression, Traumatic Stress, and COVID-19 related Anxiety in the UK General Population During the COVID-19 Pandemic. Pre-print. DOI:10.31234/osf.io/hb6nq  
<sup>5</sup> Voon, V., Sohr, M., Lang, A. E., Potenza, M. N., Siderowf, A. D., Whetteckey, J., ... & Stacy, M. (2011). Impulse control disorders in Parkinson disease: a multicenter case-control study. *Annals of neurology*, 69(6), 986-996.