# Observing Change In Sports Gambling Behaviour During the COVID-19 Pandemic

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## Introduction

- Sports betting is one of the most popular forms of gambling in Canada; 7.9% of Canadian adults endorsed gambling on sports in the past year [1], and sports betting has been shown to confer a relatively high risk among gambling activities for the development of problem gambling [2]
- The "availability hypothesis" posits that gambling involvement is closely tied to the availability of gambling opportunities in an environment, such that increases in the availability of gambling lead to increases in gambling participation and by extension, increased prevalence of problem gambling [3]; though the availability hypothesis has been thoroughly investigated in response to expansions of gambling availability, the literature on how gamblers react to restrictions in gambling availability is sparse
- The ongoing COVID-19 pandemic led to the temporary closure of most major sports leagues worldwide beginning in March of 2020. These sudden closures created a dramatic decrease in the availability of sports betting in the early stages of the pandemic, followed by a subsequent increase as most sports leagues returned during the summer
- These dynamic changes in the availability of sports gambling during the pandemic provide a rare opportunity to conduct a natural experiment observing how gambling behaviours respond to these dynamic, exogenous changes in the availability of sports gambling
- we conducted a study with *N* = 51 past-year sports gamblers investigating how their gambling behaviours changed over the course of the pandemic. We predicted that we would observe an initial decrease in gambling behaviours from pre-pandemic baseline levels to the early stages of the pandemic in May when the availability of sports gambling was heavily restricted, followed by an increase in gambling behaviours from May to August, in accordance with the re-emergence of live sporting events.

## Methods

**Participants**:

- *N* = 51 participants, recruited through Dalhousie's SONA online participation system (*n* = 19) and the community through online advertisements (*n* = 32)
- All participants were over the age of 16 and reported having gambled on a sporting event at least once in the past 12 months

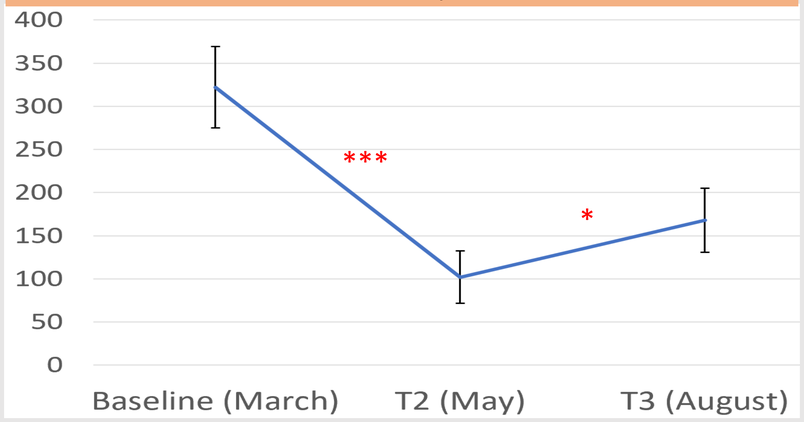
**Materials/Procedure:**

- Participants completed online survey in which the G-TLFB [4] was used to assess participants' gambling behaviours (frequency, duration, expenditure) over 3 separate 14-day time points: Pre-Pandemic Baseline (February 26 – March 10, 2020); Pandemic T1 (low availability of live sporting events; May 1-14th, 2020); Pandemic T2 (increasing availability of live sporting events; August 1-14th, 2020)

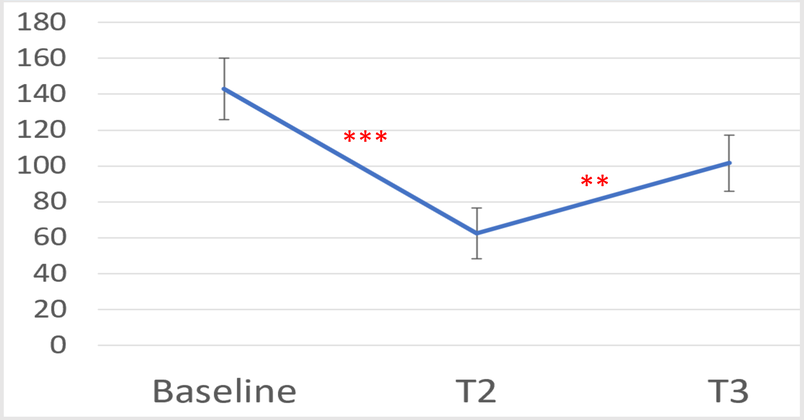
**Analyses:**

- Linear mixed models were used to evaluate our hypotheses concerning changes in gambling behaviors across timepoints on our outcomes of interest (G-TLFB gambling frequency, gambling duration, gambling expenditure)
- Demographic (age, gender, monthly disposable income, marital status) and psychological variables (GMQ Gambling Motives score, PGSI score, mini-IPIP five factor scores) were included in our analyses as covariates if they were significantly correlated to our outcomes

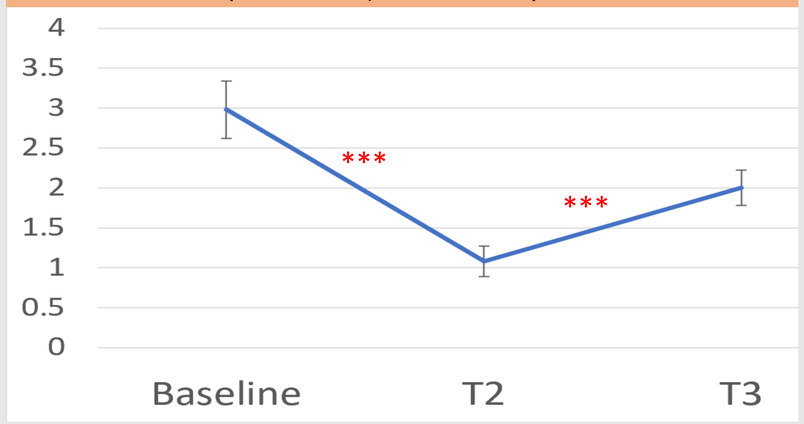
Change in Average G-TLFB Gambling Duration (in Minutes) Across Timepoints




Change in Average G-TLFB Gambling Expenditure ($CAD) Across Timepoints




Change in Average G-TLFB Gambling Frequency (# of Days Per Report Period) Across Timepoints




## Results

**Duration**: Our model predicted approximately 21% of the variability in gambling duration (*Pseudo* $R^2$ = .21). We observed a significant main effect of time both between baseline and Time 2 ($\beta$ = -220.09, *SE* = 41.57, $p < .001$), and between Time 2 and Time 3 ($\beta$ = 65.31, *SE* = 29.29, $p = .019$). Additionally, we observed a significant main effect of time between Baseline and Time 3 ($\beta$ = -154.78, *SE* = 41.24, $p < .001$).

**Expenditure**: Our model predicted approximately 7% of the variability in gambling expenditure (*Pseudo* $R^2$ = .07). we observed a significant main effect of time between Baseline and Time 2 ($\beta$ = -80.41, *SE* = .17.01, $p < .001$), between Time 2 and Time 3 ($\beta$ = 38.10, *SE* = 13.50, $p = 0.005$), and between Baseline and Time 3 ($\beta$ = -41.42, *SE* = 16.36, $p = .013$).

**Frequency**: Our model predicted approximately 21% of the variability in gambling frequency (*Pseudo* $R^2$ = .21). There was a significant main effect of time both between Time 1 and Time 2 ($\beta$ = -1.90, *SE* = .28, $p < .001$), between Time 2 and Time 3 ($\beta$ = .92, *SE* = .21, $p < .001$), and between Time 1 and Time 3 ($\beta$ = -.98, *SE* = .36, $p = .008$). The same general pattern was observed when frequency was split according to gambling on sports vs. non-sports, though the difference between Time 2 and Time 3 frequency of gambling non-sports was non-significant.

## Discussion

- Participants reported a significant decrease in their gambling frequency (duration + days) and expenditure from baseline period to early May, corresponding with the severely limited availability of sports gambling opportunities in May as a result of widespread global sports league closures.
- We also observed significant increases between May and August, a period during which most major sports leagues began to resume play, all our variables of interest (with the exception of number of days gambled on non-sports), evidence of a partial "rebound" effect back to baseline levels
- Our results are in line with the nascent literature on how gambling behaviours have been affected by COVID-19 and provide additional empirical support for the availability hypothesis of gambling, as well as indirect support for the efficacy of stimulus control methods such as voluntary self-exclusion programs in the treatment of problem/disordered gambling
- Though our data does not suggest that sports gamblers increased their gambling on non-sports to account for the lack of sports gambling opportunities early in the pandemic, more research is needed to investigate whether gambling might have been replaced by other potentially harmful behaviours (e.g. substance use)

### References

[1] Williams, R. J., Leonard, C. A., Belanger, Y. D., Christensen, D. R., el-Guebaly, N., Hodgins, D. C., ... & Stevens, R. M. (in press). Gambling and problem gambling in Canada in 2018: prevalence and changes since 2002. *Canadian Journal of Psychiatry.*

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[4] Weinstock, J., Whelan, J. P., & Meyers, A. W. (2004). Behavioral assessment of gambling: an application of the timeline followback method. *Psychological assessment*, *16*(1), 72-80.