

Background

Adolescents are negatively affected due to COVID-induced restrictions during a period of rapid mental and physical growth and development¹. This includes **negative changes in mental health** (e.g., increased social isolation, stress) and **increased obesogenic behaviours** (e.g., decreased physical activity, increased sedentary time, poor diet, decreased sleep quality)².

We aimed to:

1. Assess mental (stress, social isolation) and physical (lifestyle behaviours) health of youth from grades 7-12 in the Regina and Greater Regina area during the early months (mid-March to June 2020) of COVID-induced restrictions.
2. Assess perceptions of remote learning (March-June 2020) and return to in-person school in September 2020.

Methods

Design: Mixed Methods Study

Quantitative methods:

- COVID-specific mental health questions (CASPE) and valid and reliable questionnaires for physical health (IPAQ-SF, REAP-S, PSQI)
- Multiple linear regression to assess the relationship between mental and physical health

Qualitative methods:

- Open-ended survey responses situated into COM-B model

Study Cohort: N= 52 (16M, 32F) youth in grades 7-12 in Regina and Greater Regina area (age 15±2 y; range 12-17 y)

*Follow-up interviews (n=6) for member checking

IPAQ-SF: International Physical Activity Questionnaire – Short Form; REAP-S: Rapid Eating for Participants – Shortened; PSQI: Pittsburgh Sleep Quality Index; COM-B: Capability, Opportunity, Motivation, Behavioural model of behaviour change; CASPE: COVID Adolescent Symptom & Psychological Experiences Questionnaire

References



SCAN ME

Mental Health: Participants were “somewhat” negatively affected and were stressed “quite a bit” regarding the future.

Figure 1: Frequency of participants affected negatively by the COVID pandemic and associated restrictions (n=46).

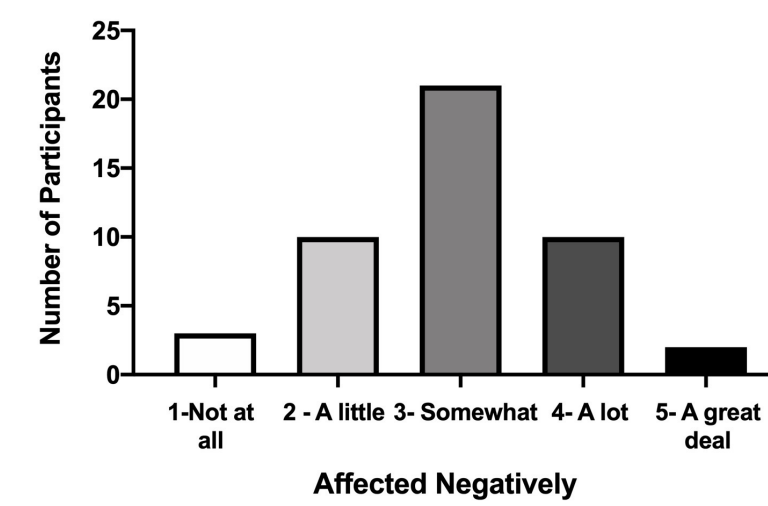
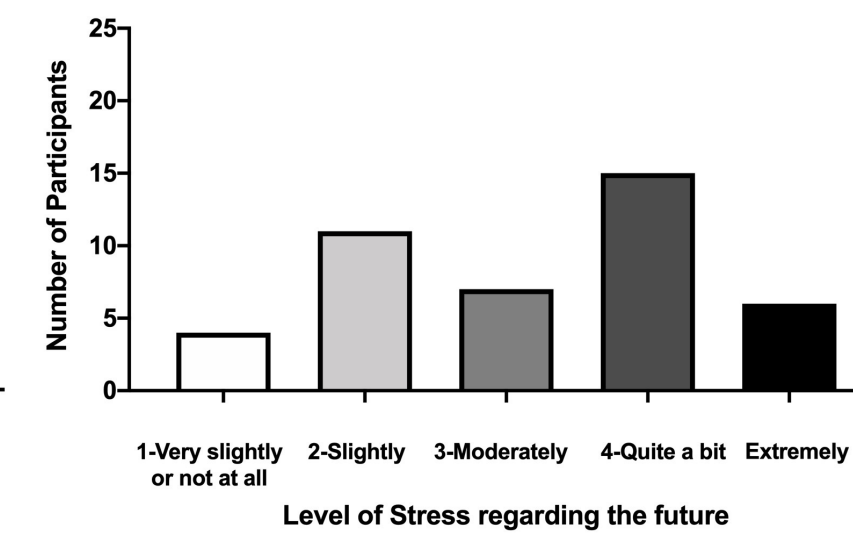


Figure 2: Frequency of participants with varying extent of stress from the COVID pandemic and associated restrictions regarding the future (n=43).



Physical Health: Obesogenic behaviours including low physical activity, increased leisure screen time and poor sleep quality were observed, but dietary patterns were reportedly healthy.

Figure 3: Frequency of participants meeting CSEP guidelines for moderate to vigorous physical activity (60 mins/day; 420mins/week) (n=42).

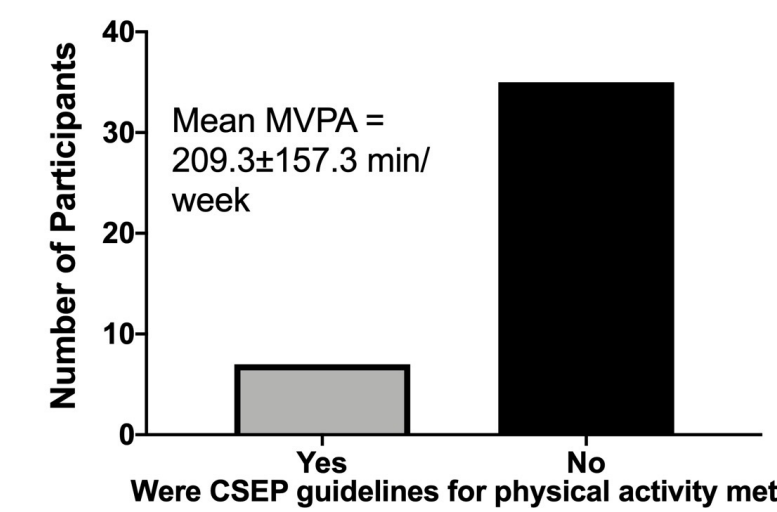


Figure 4: Frequency of participants meeting CSEP leisure screen time limits (≤ 2hrs; 120mins/day) (n=38).

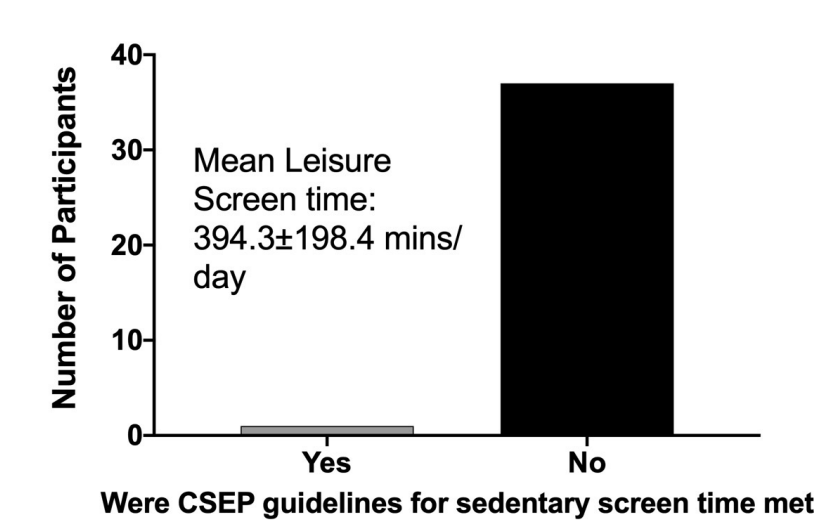


Figure 5: Distribution of total REAP-S score (n=39)

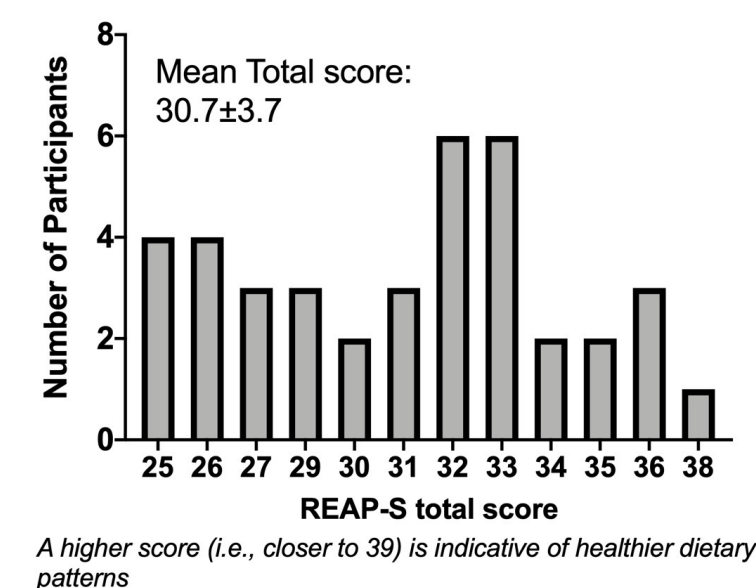
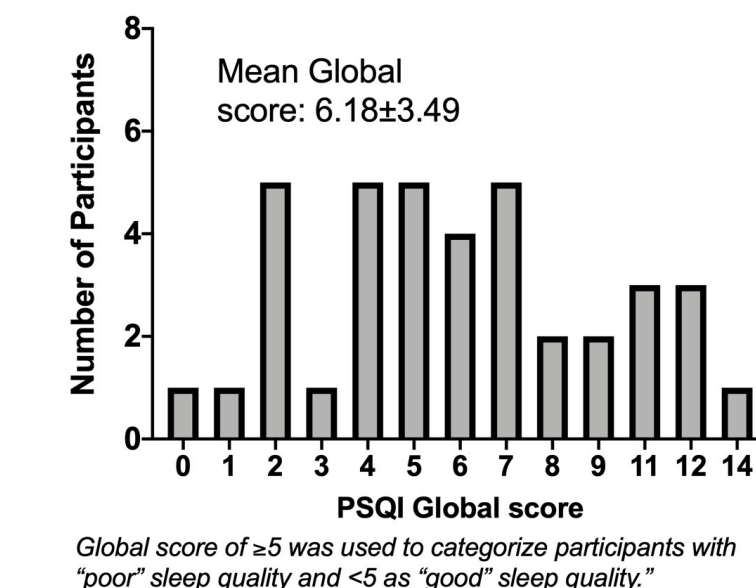


Figure 6: Distribution of PSQI global scores (n=38)

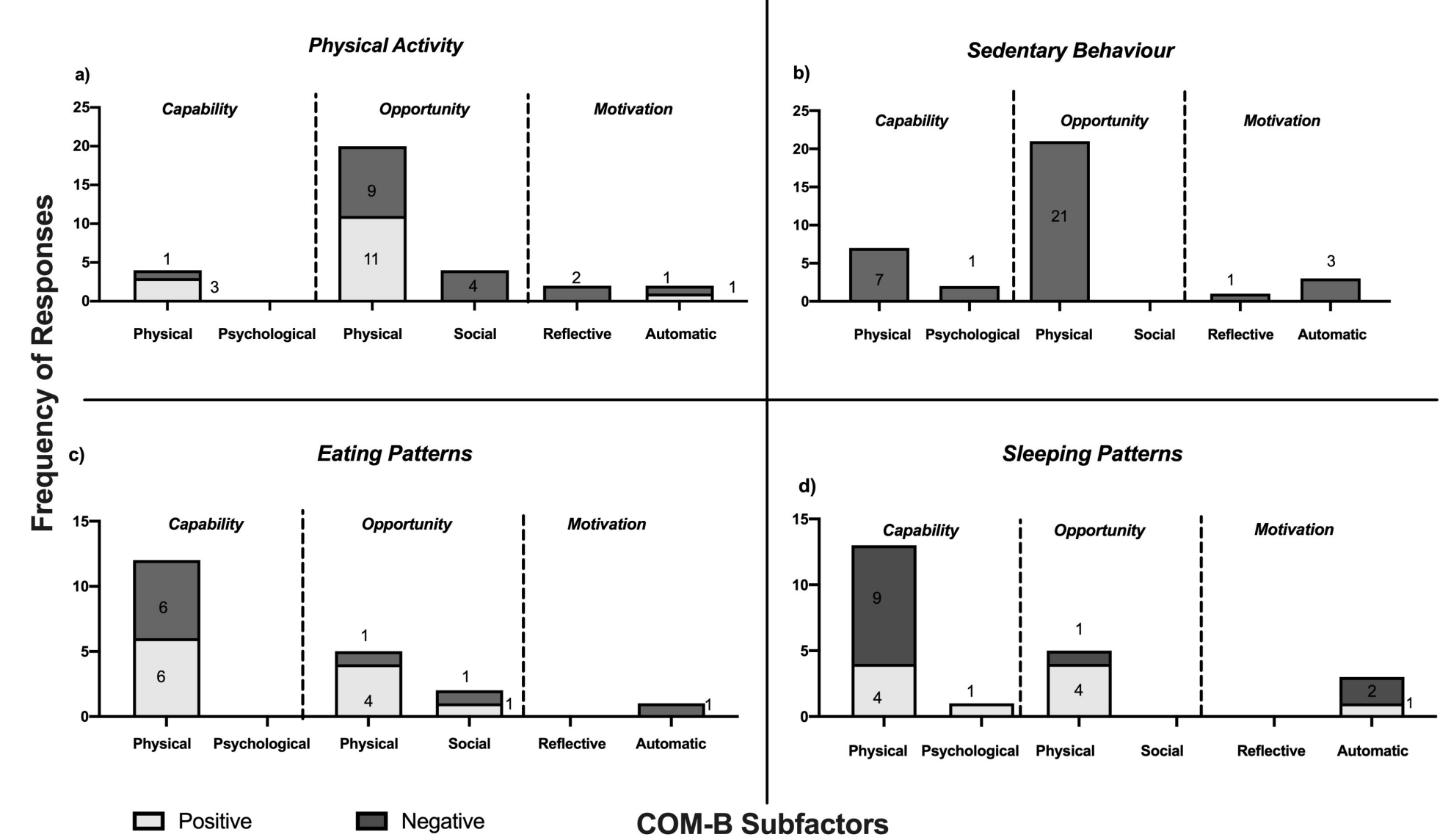


*Survey responses were validated via member checking for six participants using structured interviews

Multiple linear regression revealed individuals who experienced a **greater negative impact** from the COVID pandemic and associated restrictions were more likely to report **unhealthy dietary patterns** (p=0.046) and **poor sleep quality** (p=0.034). REAP-S and PSQI scores explained 17% of adjusted variance ($\Delta R^2 = 0.221$, F (2, 32) = 4.69, p<0.05).

Results

Figure 7: Frequency count of positive and negative behaviour change responses categorized into the COM-B model for (a) physical activity, (b) sedentary behaviour, (c) eating patterns, (d) sleeping patterns



Common themes for changes in lifestyle behaviours: “having more time” that gave *opportunities* to engage in physical activity or sedentary behaviour, and the *capability* to “eat healthier and more frequently” and “make changes to bedtime routines.”

Figure 8: Frequency of participants and how much they enjoyed remote learning compared to in-person classes (n=37)

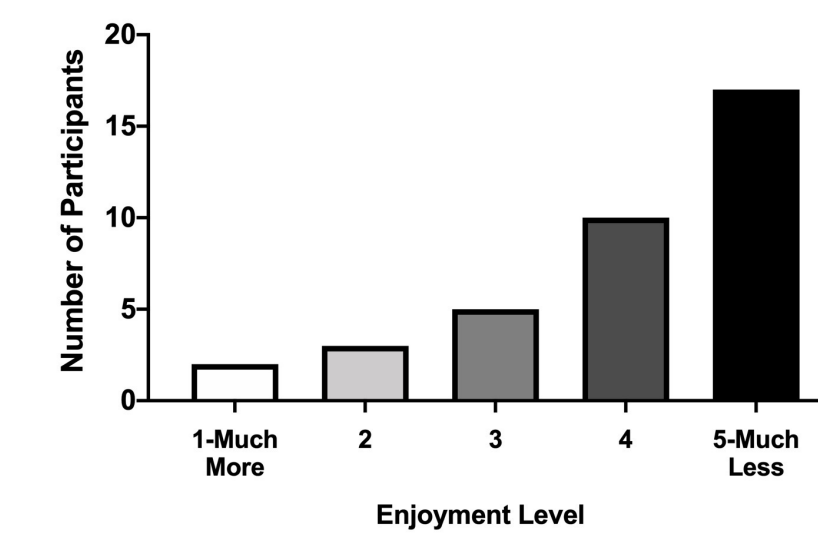
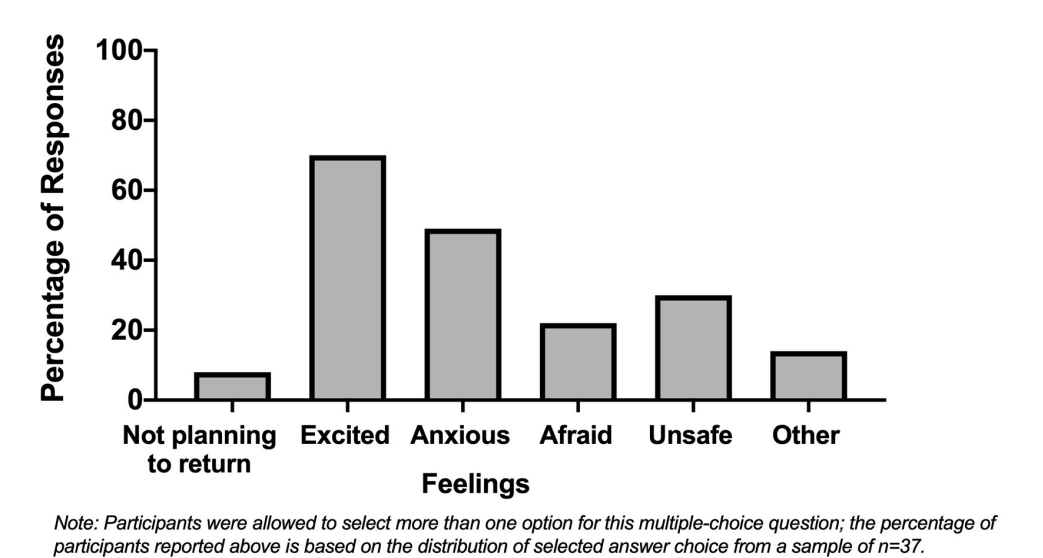


Figure 9: Frequency of responses regarding feelings for return to in-person school in September 2020 (n=37)



Participants enjoyed **remote learning** “much less” and were “excited” and “anxious” to **return to in-person school** while having concerns such as “people not following social-distancing rules,” “getting COVID-19,” “adapting to changes in school structure”.

Discussion

1. School closures likely reduced social interactions³ and structure⁴, contributing to poor mental health and obesogenic behaviours (decreased physical activity, increased sedentary behaviour and poor sleep quality).
 - The observed healthy dietary patterns may be a result of increased time at home, more home-prepped meals⁵, and willingness to change eating patterns to be healthier.
2. Regarding the association between mental health (overall negative impact of COVID) and diet and sleep quality: negative emotions (e.g., boredom) likely contributed to unhealthy dietary patterns⁶, and heightened stress⁷ likely contributed to poor sleep quality (e.g., initiating and maintaining sleep).
3. If remote school delivery is used in the future, designing curriculums to make online classes more engaging for students should be considered.