Loneliness and Canadian post-secondary students: Using NCHA data to understand the links between loneliness and dimensions of health and well-being
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INTRODUCTION
- Connections with others are needed for our ability to survive and thrive (Hawley & Cacioppo, 2010, p1).
- Discrepancies between desired and perceived social connectedness results in loneliness.
- Chronic loneliness has been linked with negative physical and mental health outcomes (Santini & Koyanagi, 2021). It is associated with academic and social adjustment (Sadoughi & Hesampour, 2016) and is a predictor of mental distress (McIntyre et al., 2018) in the post-secondary population.
- In this secondary analysis of the 2022 Canadian NCHA data set, students’ experiences with loneliness and connections to physical and mental health-related behaviours and experiences were explored. In addition, differences in experiences with loneliness based on the year of study, ethnic/racial identity, and sex/gender identity were explored.
- In reflecting on the findings, there can be consideration of actions taken on post-secondary campuses to support students in building meaningful connections that will impact both mental and physical health.

METHODS
Participants
N = 11,322 students from 16 Canadian post-secondary institutions
Ages 18-93, M = 23.34 years, SD = 6.45
Female (66.9%)
Male (26.6%)
Transgender/Gender Non-conforming (GNC) (5.1%)

Racial/Ethnic Identity
<table>
<thead>
<tr>
<th>Caucasian</th>
<th>Latin American</th>
<th>Asian</th>
<th>Biracial/Multiracial</th>
<th>SE Asian</th>
<th>South Asian</th>
<th>Indigenous</th>
<th>Chinese</th>
<th>Korean</th>
<th>Black</th>
<th>West Asian</th>
<th>Filipino</th>
<th>Arab</th>
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</thead>
<tbody>
<tr>
<td>56.6%</td>
<td>2.6%</td>
<td>8.2%</td>
<td>5.4%</td>
<td>6%</td>
<td>8.3%</td>
<td>1.6%</td>
<td>4.6%</td>
<td>.6%</td>
<td>4.6%</td>
<td>.7%</td>
<td>2.7%</td>
<td>2.6%</td>
<td>3.2%</td>
</tr>
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Measures:
- National College Health Assessment (NCHA) - Self-report survey examining the behaviors, attitudes, and perceptions related to physical, sexual and emotional health.

The following measures were embedded in the NCHA:
- UCLA Loneliness Scale (ULS) (Hughes et al., 2004). Range 3-9; higher scores reflect more loneliness. Scores can also be collapsed into 2 categories: Negative for loneliness = 3-5; positive for loneliness = 6-9.
- Connor-Davidson Resilience Scale (CD-RISC2; Connor & Davidson, 2003). Range 0-8; higher scores reflect greater resilience.
- Kessler Psychological Distress Scale (K6; Kessler et al., 2003). Range 0-24; higher scores reflect higher psychological distress. Scores can also be collapsed into 3 categories: low distress (0-4), moderate distress (5-12), and serious distress (13-24).
- Suicide Behaviors Questionnaire-Revised (SBQ-R, Osman et al., 2001). Range 0-18; higher scores reflect higher suicide risk. Scores can be collapsed into 2 categories: negative suicide screen (3-6), positive suicide screen (7-18).
- Alcohol, Smoking and Substance Involvement Screening Test (ASSIST; Humeniuk et al., 2010). Risk scores for alcohol and cannabis use from Range 0-39; high scores reflect higher use risk.
- Mental Health Continuum-Short Form (MHC-SF, Keyes, 2009). Scores collapsed into three categories of mental health: languishing, moderate and flourishing.

Procedure:
- Students from 16 Canadian post-secondary institutions were invited to participate in the online administration of the NCHA in the Spring of 2022.
- Data were analyzed using independent t-tests, ANOVAs and where necessary, Tukey's HSD Post-hoc analyses. Effect sizes were checked using Cohen’s d and Eta².

RESULTS
1. 58.1% (n = 6581) scored positive for loneliness; 41% (n = 4644) scored negative.
2. Significant sex/gender group differences on the ULS scores (F(2,11116) = 47.90, p < .001). Post-hoc tests indicated ULS scores of males, females, and transgender/GNC students were all significantly different from each other. Transgender/GNC individuals had the highest loneliness scores (M = 6.60) and were significantly different from the ULS scores of females (M = 5.88) and males (M = 5.76).
3. Significant year of university differences on the ULS scores (F(6, 10527) = 18.76, p < .001) with post-hoc tests indicating that ULS scores of 1st and 2nd year students were similar and the highest for students in all years of university. They were significantly greater than ULS scores of 4th year students and those in graduate studies. Graduate students at the Masters and PhD levels had the lowest ULS scores. Effect size was in the small range (n2 = .011)
4. Race/Ethnicity: Small effect size for race; few differences in the ULS scores between racial groups.
5. Significant self-reported health differences on the ULS scores (F(4,10437) = 282.75, p < .001) with post-hoc tests showing ULS scores of all self-reported health groups being significantly different from each other. Students with “poor” self-rated health had the highest ULS scores (M = 7.31, SD = 1.69), while those with “excellent” self-reported health had the lowest ULS scores (M = 4.94, SD = 1.84). As self-reported health decreased, the ULS scores seemed to progressively increase. Effect size was medium (n2 = .098).
6. On the embedded measures, students scoring positive for loneliness had significantly higher levels of distress scores, higher suicide risk scores, and significantly lower resilience scores. Students scoring positive for loneliness had significantly higher use of cannabis and alcohol. Cohen’s d effect sizes ranged from small to large.

<table>
<thead>
<tr>
<th></th>
<th>Positive for Loneliness</th>
<th>Negative for Loneliness</th>
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<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>K6</td>
<td>12.28</td>
<td>5.17</td>
</tr>
<tr>
<td>SBQ-R</td>
<td>6.84</td>
<td>3.75</td>
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<tr>
<td>CD-RISC2</td>
<td>5.38</td>
<td>1.71</td>
</tr>
<tr>
<td>ASSIST- Cannabis</td>
<td>7.83</td>
<td>8.23</td>
</tr>
<tr>
<td>ASSIST- Alcohol</td>
<td>7.45</td>
<td>6.61</td>
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DISCUSSION
The percentage of Canadian students experiencing loneliness is of significance. The findings suggesting differences in physical and mental health experiences of lonely and non-lonely students is in line with prior research (Christiansen et al., 2021; Horigian et al, 2021; Santini & Koyanagi, 2021). In this study, lonely students had higher levels of distress, suicide risk, substance use, lower levels of resilience, identify themselves as having poor health, and experience languishing levels of mental health. This study identifies students in the earlier years of university and those who identify as transgender/gender non-conforming as being more vulnerable to feeling lonely. As caring campus professionals working to support the health and well-being of students, courses of action can be contemplated as to how all of us can provide supports and resources to help students broaden and build skills and capacities to navigate loneliness, especially for those who might be more vulnerable. Furthermore, creating opportunities for students to build campus communities and meaningful connections within programs, with faculty, peers and students services not only contributes to better mental and physical health outcomes but adds to the academic success of our students.

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References can be found at: