The Hazards of Daily Stressors: Comparing Daily Mood and Stressor Reactivity between Sexual/Gender Minority and Cisgender Heterosexual Young Adults during the COVID-19 Pandemic

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BACKGROUND

- Individuals with minority identities are at greater risk for encountering stressors than others. Initial evidence shows that the disparities between cisgender heterosexual (CH) individuals and sexual and gender minority (SGM) individuals on stress may be exacerbated by the COVID-19 pandemic.
- We examined the daily stressors experienced by undergraduate students during the COVID-19 pandemic (stressor exposure), the association between daily stress and same-day negative mood (stressor reactivity), and whether these varied between SGM and CH undergraduate students .

METHOD

- 609 undergraduate students recruited via the departmental research participant pool
  - Cohort 1 (Winter 2021): UBCO online; lockdown
  - Cohort 2 (Summer 2021): Lockdown lifted
  - Cohort 3 (Fall 2021): UBCO in person
  - Cohort 4 (Winter 2022): Post-initial Omicron; in person

METHOD (Continued)

- 14-day daily diary design (daily mood and exposure to stressors: Argument/conflict, family/home, work/school, financial, traffic/transportation, health problem/accident, stressful event to friend/family, other).
- *Do groups differ on stressor exposure?* We used multilevel survival analysis (MSA) to estimate the risk of recurring daily stressor events (Equation 1). This method accounts for right censored data (cases who did not report the event within the sampling period)
- *Do groups differ on stressor reactivity?* We used multilevel modeling to examine group differences in predicting daily mean negative mood from the experience of daily stressors (Equation 2)

RESULTS

- Figure 1: there were no differences between groups on the hazard of experiencing conflicts, home/family stress, work/school stress, or "any stressor". Other stressor types did not occur frequently enough to test.

It is important to consider *right-censoring* when examining daily events like stressors

Figure 1. Survival times (x-axis) for each participant (separate lines on y-axis) for each stressor (grouped by color).
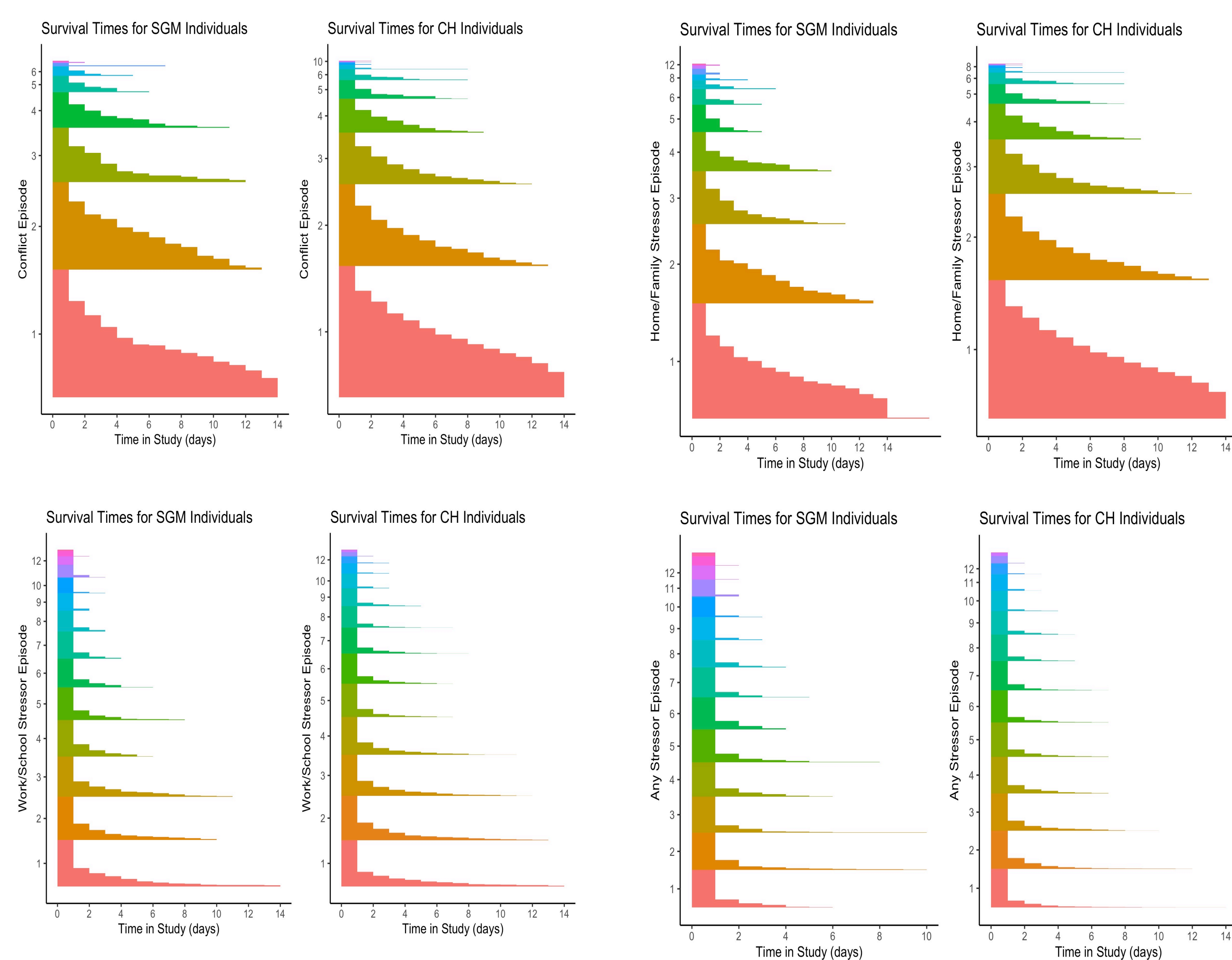
Note. Survival times (x-axis) for each participant (separate lines on y-axis) for each stressor (grouped by color within each plot); separately by group. SGM = sexual/gender minority; CH = cisgender heterosexual.

Table 1. Unstandardized Estimates for Multilevel Model of Negative Mood as a Function of Stress and SGM Status

Parameter	Estimate	SE	p	CI$_{95}$ Lower	CI$_{95}$ Upper
Main Effects					
Intercept (γ_{00})	0.84	0.04	< .001	0.76	0.91
Time (per 7 days) (γ_{30})	0.00	0.01	.87	-0.02	0.02
Slope (γ_{10})	1.52	0.06	< .001	1.40	1.64
SGM status (γ_{01})	0.19	0.05	< .001	0.10	0.29
Slope by SGM status (γ_{20})	-0.06	0.14	.68	-0.34	0.22
Between Stress (γ_{02})	2.06	0.21	< .001	1.65	2.47
Between stress by SGM status (γ_{03})	-0.10	0.45	.83	-0.98	0.79
Weekend (γ_{40})	-0.04	0.01	< .001	-0.06	-0.02
Gender (γ_{04})	0.01	0.05	.87	-0.09	0.10
Ethnicity (γ_{05})	0.03	0.04	.49	-0.05	0.11
Student status (γ_{06})	0.01	0.06	.82	-0.10	0.12
Cohort 2 (γ_{07})	0.01	0.06	.88	-0.10	0.12
Cohort 3 (γ_{08})	-0.04	0.05	.40	-0.13	0.05
Cohort 4 (γ_{09})	-0.06	0.05	.21	-0.15	0.03
Random Effects ([co-]variances)					
Level 2 (between person)					
Intercept (μ_{0i})	0.16	0.01	< .001	0.14	0.19
Slope (μ_{1i})	0.54	0.10	< .001	0.35	0.73
Intercept and slope Cov(μ_{0i}, μ_{1i})	0.05	0.02	.04	0.00	0.10
Level 1 (within person)					
Negative mood (ε_{ti})	0.18	0.00	< .001	0.18	0.19

Note. Intercept = Intercept of negative mood, Slope = Slope of effect from within-day stress to same-day negative mood, SGM = Sexual Gender Minority. Gender (Man = 1, Other = 0), ethnicity (White = 1 and Other = 0), international student status (International = 1 and Domestic = 0), and weekend (Weekend = 1 and Weekday = 0) variables are dummy coded. Cohort variables are dummy coded in which the reference cohort is Cohort 1.

Equation 1:

$$h_{ij}(t) = h_0(t)\exp(v_i)\exp(\beta_1 SGM + \beta_2 Male + \beta_3 International + \beta_4 Ethnicity$$
$$+ \beta_5 Cohort2 + \beta_6 Cohort3 + \beta_7 Cohort4)$$

Equation 2:

$$NegMood_{ti} = \gamma_{00} + \gamma_{01}SGM_{.i} + \gamma_{02}BPStress_{.i} + \gamma_{03}SGM_{.i}* BPStress_{.i} + \gamma_{10}WPStress_{ti} +$$
$$\gamma_{20}SGM_{.i}* WPStress_{ti} + \gamma_{30}Time_{ti} + \gamma_{40}Weekend_{ti} + \gamma_{04}Gender_{.i} + \gamma_{05}Ethnicity_{.i} +$$
$$\gamma_{06}StudentStatus_{.i} + \gamma_{07}Cohort2_{.i} + \gamma_{08}Cohort3_{.i} + \gamma_{09}Cohort4_{.i} + \mu_{0i} +$$
$$\mu_{1i}WPStress_{ti} + \varepsilon_{ti}$$

RESULTS (Continued)

- SGM and CH participants did not differ on stressor reactivity (Table 1)
- SGM participants reported greater negative mood in daily life than CH participants
- Daily negative mood did not vary by Cohort (pandemic context)

DISCUSSION

- We need more studies using methods that accurately account for right censoring in the study of daily events such as stressors to make accurate inferences
- Although SGM and CH individuals did not differ in this sample, this does not mean that SGM individuals aren't disadvantaged when it comes to daily stressors. Null results could be due to sample (Western Canadian university students), lack of measure of discrimination, lack of pre-pandemic time point, and many other factors

STRENGTHS

- Data collected throughout the pandemic
- Daily diary design minimizes recall bias
- Accounted for right censoring in estimate of risks for stressor exposure

LIMITATIONS

- Unknown geographical location; pandemic conditions may have varied by this
- Sample of undergraduate students; results may not generalize
- Small cell sizes for specific SGM identities precluded nuanced analyses

FUTURE DIRECTIONS

- Study broader populations beyond undergraduate students
- Examine visibility of SGM individuals as it may play a role in stress

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