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COVID-19 social and economic disruptions, mental health, and coping behaviours among young Canadians: a structural equation model

Ogochukwu Kelechi Onyeso, Adebiyi Boco, Md Kamrul Islam[#], Alexander Darku and Lars K. Hallstrom

Prentice Institute for Global Population and Economy, University of Lethbridge, Lethbridge, AB, Canada

ABSTRACT

The COVID-19 pandemic increased the prevalence of mental health disorders among youths. This study explored the association between COVID-19's social and economic disruptions, mental health disorders, and coping behaviours among youths using Statistics Canada's COVID-19 and Mental Health data. The study included 895 participants aged 18–24 years (52.9% women). Social and economic disruptions, healthy and unhealthy coping behaviours, and mental health severity (MHS) latent variables were delineated through exploratory factor analysis. Structural equation modelling revealed that social disruptions significantly increased the MHS ($\beta = 0.77$, $p < 0.001$), as well as healthy ($\beta = 0.25$, $p < 0.001$) and unhealthy ($\beta = 0.54$, $p < 0.001$) coping behaviours. Similarly, economic disruption was associated with an increase in healthy coping behaviours ($\beta = 0.14$, $p = 0.043$). Healthy coping behaviours (β=-0.08, $p = 0.047$) and positive coping skills (mastery) ($\beta = -0.26$, $p < 0.001$) were associated with a reduction in MHS. Positive coping behaviours mediated the social impact of COVID-19 on youth MHS; negative behaviours (substance use) had no significant mediation effect.

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KEYWORDS
Anxiety; depression; mental health disorder; resilience; social disruptions; youth

Introduction

The COVID-19 pandemic has been associated with a higher prevalence of mental health disorders, including depression, generalized anxiety disorder (GAD), psychological distress, and post-traumatic stress disorder (PTSD) among youths (Bell et al., 2023; Courtney et al., 2020; Findlay et al., 2020; Roberts et al., 2021). Aligning with Arnett's (2000) work on emerging adulthood, we defined youths as young adults aged 18 to 24 years, reflecting a critical transition period marked by significant psychosocial and economic changes. Numerous studies have investigated the physical health implications of the pandemic, but mental health impacts, particularly among the youth, remain understudied (Cui & Hong, 2021; Kalcev et al., 2020).

Recent research suggested that the pandemic-related disruptions in youth education, entry into the labour market, and social relationships predisposed them to mental health challenges (Hawke et al., 2020, 2021; O'Reilly et al., 2021). However, there is a paucity of studies on the

CONTACT Ogochukwu Kelechi Onyeso kzetfrank@yahoo.com

[#]Md Kamrul Islam is currently working with the Health Analysis Division at Statistics Canada. The author contributed to this work prior to joining the Statistics Canada while working as a postdoctoral fellow at the Prentice Institute for Global Population and Economy, University of Lethbridge, Lethbridge, AB, Canada

Supplemental data for this article can be accessed online at https://doi.org/10.1080/02673843.2025.2451674 sociobehavioural responses to COVID-19's social and economic disruptions among the youth (Theron et al., 2021). Understanding the impact of social and economic disruptions on mental health outcomes and the mediating effect of sociobehavioural adaptations is crucial for developing post-COVID-19 pandemic recovery strategies for youths (Radomski et al., 2022; Theron et al., 2021).

In line with the World Health Organization (WHO), we conceptualized mental disorders as disturbances in thinking, emotion regulation, or behaviour associated with distress or impaired functioning, often emphasizing the interplay of biological, psychological, and social factors (World Health Organization, 2022). Social disruption is a significant alteration in societal norms and functioning that affects social structures, relationships, and interactions, often resulting from crises such as wars, natural disasters, or pandemics (Jones et al., 2021). Social disruptions experienced by youths during the COVID-19 pandemic included school closures, cancellation of extracurricular activities, and reduced face-to-face interactions, all of which have been linked to increased feelings of social isolation, loneliness, and psychological distress (Courtney et al., 2020; Guerrero & Barnes, 2022; Hawke et al., 2020; O'Reilly et al., 2021; Wang & Tang, 2020). Economic disruption was defined as disturbances to economic activity, leading to financial instability (Gonzalez et al., 2023). During the pandemic, many families experienced job losses, decreased household income, and unmet financial needs, contributing to stress and anxiety among youth. Economic hardships have been shown to correlate with mental health decline, as financial strain can exacerbate stressors within the family (Argabright et al., 2022; Loades et al., 2020; Lu & Lin, 2021).

Mastery is the perception of self-efficacy over the forces that influence one's life while coping behaviours are actions intended to put such forces under one's control (Pearlin & Schooler, 1978). Coping was conceptualized as healthy (adaptive) or unhealthy (maladaptive) sociobehavioural strategies individuals use to manage stress and adversity (Polatcı et al., 2023; Skinner et al., 2003). Healthy coping behaviours reported during the COVID-19 pandemic include exercising, improved sleep patterns and nutrition, communicating with health care workers, friends and family, meditation, and spiritualism (Laurier et al., 2021; Otanga et al., 2022). Unhealthy coping behaviours include excessive alcohol and cannabis use and domestic violence (Craig et al., 2022; Hawke et al., 2020; Mental Health Commission of Canada, 2021; Moffitt et al., 2022).

The conceptual framework of this study is grounded in resilience theory, which posits that individuals possess inherent or acquired capacities to cope with adversity through protective and adaptive mechanisms (Métais et al., 2022). We theorized that COVID-19-related social and economic disruptions would increase the prevalence and severity of mental health disorders while coping behaviours and mastery serve as mediating factors, in this relationship (Figure 1). Healthy coping behaviours were expected to mitigate the adverse effects of these disruptions, whereas unhealthy coping behaviours exacerbate mental health challenges. Mastery – the individual's sense of control and competence over life circumstances was expected to account for variances in adaptive and maladaptive capacities. Figure 1 depicts the conceptual framework, illustrating how social and economic disruptions directly influence mental health status, with coping behaviours and mastery acting as critical resilience mechanisms. This framework informs targeted interventions, emphasizing the importance of promoting healthy coping behaviours to buffer youths' mental health.

A scoping review revealed that, despite early and responsive studies, evidence addressing coping pathways for the pandemic's long-term impact on youth mental health remains limited (Jones et al., 2021). Though studies have shown isolated effects of the social and economic disruptions (Jones et al., 2021), it is necessary to explore the cumulative effects of these social and economic disruptions on youth mental health alongside their sociobehavioural coping mechanisms including mastery (Laurier et al., 2021; Sharma et al., 2020). With a pre-pandemic prevalence of mental health disorders among Canadian youth at 20% (Hawke et al., 2020), this study holds significant relevance beyond the pandemic, providing critical insights into Canadian youth coping behaviours and their impact on mental health symptom severity. Furthermore, it identifies significant factors constituting economic and social disruptions among the youth cohort, marking a novel area of investigation.

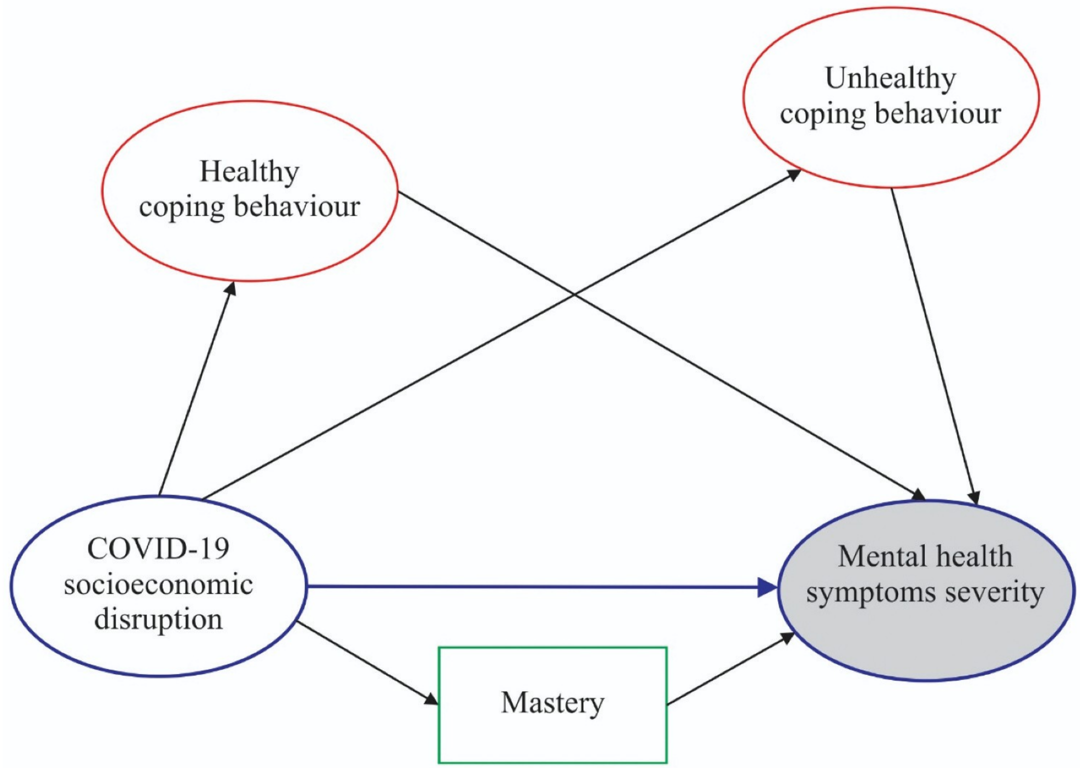

Figure 1. Conceptual framework of COVID-19 socioeconomic disruptions, coping behaviours, and mastery on mental health.

The study aimed to (a) identify the set of variables that would best define the latent constructs for mental health status, COVID-19 social and economic disruptions, healthy and unhealthy coping behaviours, (b) estimate the associations between social and economic disruptions and mental health, and (c) explore the mediating role of coping behaviours. The study addressed the following research questions: (a) Which variables best define the latent constructs of mental health status, social and economic disruptions, healthy behaviours, and unhealthy behaviours? (b) What is the association between mental health status and COVID-19-related social and economic disruptions? (c) What are the mediation effects of coping behaviours on COVID-19 social and economic disruptions' influence on youth mental health status? We hypothesized that (a) social and economic disruptions will have a significant direct effect on mental health status, and (b) mastery and healthy and unhealthy coping behaviours will significantly mediate the direct effects of the social and economic disruptions on mental health status.

Methods

Data source

This paper is a secondary analysis using Statistics Canada's Survey on COVID-19 and Mental Health (SCMH) datasets (Statistics Canada, 2021a, 2021b). The SCMH was a cross-sectional, nationally representative, rapid-response survey conducted by Statistics Canada in the Fall of 2020 ($n = 14{,}689$) and Spring of 2021 ($n = 8{,}032$) to assess the impacts of COVID-19 on Canadians' mental health and well-being (Statistics Canada, 2023a). Of the 22,721 participants in the pooled (2020 and 2021) cycles of SCMH, our study included 895 youths aged 18 to 24 years (Guerrero & Barnes, 2022; Thomas & Wannell, 2009). Demographic information on the SCMH 2020 and 2021 cohort has been published by Guerrero and Barnes (2022). The SCMH employed a simple random two-stage sampling design: the sampling unit for the first stage was the dwelling within each province, and the second stage was the persons within a dwelling (Statistics Canada, 2023a). The survey was administered online or by telephone. Participants were individuals aged 18 years and older from all provinces and territories in Canada (Statistics Canada, 2023a). The survey excludes individuals living on reserves, in institutions and outside the capital cities in the territories.

Outcome variables

The primary outcome variable was *mental health severity*, a latent variable constructed from four endogenous variables: anxiety, depression, psychological distress, and PTSD. The SCMH collected information on the endogenous variables through standardized screening questionnaires for each mental health indicator.

Anxiety was assessed using the Generalised Anxiety Disorder Scale (GAD-7) (Spitzer et al., 2006). The GAD-7 includes seven items that assess the presence and severity of generalized anxiety disorder. Items were rated on a four-point Likert scale ranging from 0 (not at all) to 3 (nearly every day). Responses to each item were summed to provide a single score ranging from 0 to 21, with higher scores indicating greater anxiety levels. A score of 10 or higher represented the cut-point score for identifying cases of generalized anxiety disorder (Guerrero & Barnes, 2022; Spitzer et al., 2006). The GAD-7 had an excellent internal consistency with Cronbach's alpha (α) = 0.92 (Spitzer et al., 2006).

Depression was assessed using the nine-item Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001; Manea et al., 2012). The PHQ-9 assesses the frequency with which nine depressive symptoms have occurred in the past two weeks on a four-point Likert scale ranging from 0 (not at all) to 3 (nearly every day). Therefore, respondents' overall scores range from 0 to 27, with higher scores indicating more severe depressive symptoms. A score of 10 was the cut-point for identifying cases of major depressive disorder (Kroenke et al., 2001; Manea et al., 2012). The internal consistency of the PHQ-9 was excellent (Cronbach $\alpha = 0.89$) (Kroenke et al., 2001).

Psychological distress was assessed using the 10-item Kessler Psychological Distress Scale (K10) (Kessler et al., 2003). The scale obtained respondents' self-rating of their anxiety and depression symptoms in the previous four weeks based on a five-point Likert scale ranging from 0 (none of the time) to 4 (all the time). The expected range was 0 to 40, with higher scores indicating greater levels of psychological distress (Cornelius et al., 2013). We adopted nine as a cut-off mark as previously used in the Canadian context (Caron & Liu, 2010; Guerrero & Barnes, 2022). The internal consistency of the K10 was excellent (Cronbach $\alpha = 0.93$)

Post-Traumatic Stress Disorder was assessed using the PTSD checklist (PCL-5) – 20 self-report items based on the Diagnostic and Statistical Manual of Mental Disorders-version 5 (DSM-5) symptoms of PTSD (Roberts et al., 2021). Participants were asked to complete the PCL-5 in relation to the traumatic experience that troubled them most. The PCL-5 is a five-point Likert scale (0 = Not at all, 4 = Extremely). The total score can range from 0 to 80. We adopted 33 as the cut-off point following the recommendations in the literature (Bovin et al., 2016). The PCL-5 had an excellent internal consistency with Cronbach's $\alpha = 0.94$ (Roberts et al., 2021).

Explanatory variables

COVID-19 social disruption was a latent variable constructed from four endogenous variables (yes/no): (i) feelings of loneliness or isolation, (ii) emotional distress, (iii) physical health problems, and (iv) challenges in interpersonal relationships. *COVID-19 economic disruption* was a latent variable constructed from three endogenous variables (yes/no): (i) decrease in total household income (THI), (ii) loss of job or income source, and (iii) difficulty meeting financial obligations or essential needs. The THI was a self-reported estimate of income received by all household members from all sources, before taxes and deductions, during the referenced year ending (Statistics Canada, 2023a). Change in THI was categorized as decrease (1) and increase/no change (0).

Mediation variables

The latent mediation variables were healthy and unhealthy coping behaviours. *Healthy coping behaviour* was constructed from eight endogenous variables regarding the participants' activities towards their mental health (yes/no): (i) communicating with a health professional, (ii) meditating, (iii) praying or seeking spiritual guidance, (iv) exercising outdoors, (v) exercising indoors, (vi) changing food choices, (vii) participating in hobbies, and (viii) changing sleep patterns. *Unhealthy coping behaviour* was constructed from two endogenous variables that assessed whether participants' use of alcohol and cannabis increased during COVID-19 compared to before the pandemic (yes/no).

Covariates

M*astery* was an observed variable, assessed using the Sense of Mastery Scale, a negatively worded seven-item questionnaire on coping developed by Pearlin and Schooler (1978). It was a five-point Likert scale from 0 (strongly agree) to 4 (strongly disagree), and overall scores ranged from 0 to 28. Therefore, higher scores indicated better mastery.

Statistical analyses

We conducted the statistical analysis using Stata software Version 16.1 (StataCorp, College Station, TX). The dataset had minimal missing values; PTSD (2.3%) was the variable with the most missing data. Missing and skewed variables are problematic in structural equation modelling (SEM). Therefore, the data were diagnosed and fixed for missing values through a 20-iteration multiple imputation approach. In the case of continuous variables, the approach imputed 20 replacements of each missing cell and recorded the mean. There was no missingness in the categorical variables. The continuous variables were assessed for univariate and multivariate outliers using the standardized Z-score ($\leq \pm 3.29$) and Mahalanobis distance approaches. We tested for normal distribution by computing the skewness and kurtosis of each continuous variable, and linearity was established through a Q-Q plot approach.

We used descriptive statistics: frequency, percentage, mean, and standard deviation to summarize the samples' sociodemographic characteristics. Inferential statistics – Pearson's chi-square was used to test the association between each item of COVID-19 disruptions, sociobehavioural/coping patterns, and mental health indicators (distress, anxiety, depression, PTSD) via two-by-two contingency table crosstabulation analysis.

An exploratory factor analysis (EFA) was completed using *maximum likelihood* and *varimax rotation* approaches to determine the number of dimensions underlying the responses to COVID-19 disruptions, mental health severity, and coping behaviours. The EFA also shows the specific items related to each dimension/latent variable (Ampofo & Aidoo, 2022). The latent variables were identified and named based on distinct groups of factor loadings with eigenvalue ≥ 1. For example, the latent variable – mental health severity was derived from measured (observed) variables: distress, anxiety, depression, and PTSD. We used EFA in lieu of confirmatory factor analysis (CFA) because there was no existing conceptual framework or theory for (Figure 1) the relationships we were investigating (Ampofo & Aidoo, 2022). The EFA result helped us identify the latent variables for the structural equation modelling (SEM).

Structural equation modelling is a widely utilized multivariate statistic that examines the direct and indirect (mediated) effects or associations among the latent and observed variables (Kang & Ahn, 2021). SEM accomplishes this by summarizing a linear structural relationship into a measurement model (CFA) and a structural model (Ampofo & Aidoo, 2022). We used SEM (*maximum likelihood* reporting the standardized regression coefficients) to estimate the direct effects of social and economic disruptions on youth mental health during the pandemic and the indirect (mediation) effects of healthy and unhealthy coping behaviours. The final model was adjusted for mastery scores. We used the post-estimation command in STATA® to decompose the SEM into direct, indirect, and total effects. SEM chat builder was used to prepare the standardized regression path diagram.

We set the cut-off for the post-estimation fitness indices following the rules in the literature: Root Mean Squared Error of Approximation (RMSEA) < 0.08, Standardised Root Mean Squared Residual (SRMR) < 0.08, the Bentler Comparative Fit Index (CFI) > 0.90, and the Tucker-Lewis Index (TLI) > 0.90 (Hu & Bentler, 1999; Kline, 2016; Lalani et al., 2023). It is desirable to obtain a likelihood ratio (χ^2) with no significant p-value ($p > 0.05$). However, large samples such as ours often violate this criterion. Therefore, Kline (2016) recommended that a model with significant χ^2 be deemed robust if it meets at least three of RMSEA, SRMR, CFI, and TLI.

Results

Sociodemographic characteristics

A total of 895 respondents aged 21.15 ± 2.01 years were included in the analysis. The respondents' sociodemographic characteristics (Table 1) showed that 52.9% were females, 81.3% were urban dwellers, and 33.1% possessed a tertiary education qualification. Almost half of the respondents (44.5%) believed the COVID-19 pandemic worsened their mental health. The COVID-19 social and economic disruptions and coping behaviours were summarized in Table 2. At least one in every five participants reported economic disruptions leading to a decrease in their total household income (44.0%), loss of income source (38.9%), and difficulty meeting financial obligations (21.3%). Similarly, a substantial proportion of the participants reported social disruptions such as a feeling of loneliness/social isolation (58.5%), emotional distress (50.8%), physical health concerns (31.3%), and challenges in personal relationships (24.2%).

Table 1. Samples' sociodemographic characteristics ($n = 895$).

Parameter	n	%	Mean	Standard deviation	Mix/max
Gender					
Male	422	47.1			
Female	473	52.9			
Highest education level					
High school/equivalent or lower	598	66.8			
Tertiary (college, university, postgraduate)	296	33.1			
Missing	1	0.1			
Location					
Urban	728	81.3			
Rural	163	18.2			
Missing	4	0.5			
Perceived mental health compared to before COVID-19					
Worse	399	44.5			
Same	415	46.4			
Better	81	9.1			
Age (years)			21.15	2.01	18–24
Generalised Anxiety Disorder			6.32	5.48	0–21
Psychological Distress			11.90	8.85	0–40
Depression			7.55	6.51	0–27
Post-Traumatic Stress Disorder			10.31	16.43	0–80
Mastery			16.92	5.11	0–28

Source: Survey on COVID-19 and Mental Health (2020/2021).

Table 2. COVID-19 socioeconomic disruptions and behavioural adaptations.

Variable	Yes
	***n* (%)**
Economic disruptions	
Total household income decreased due to COVID-19	394 (44.0)
Have a job or business from which you were absent – Ref week	37 (4.1)
Loss of job/income source	348 (38.9)
Difficulty meeting financial obligations/essential needs	191 (21.3)
Social disruptions	
Death of family/friend/colleague	63 (7.0)
Feelings of loneliness/isolation	524 (58.5)
Emotional distress	455 (50.8)
Physical health problems	280 (31.3)
Challenges in personal relationships	217 (24.2)
Healthy coping behaviour	
Communicating with friends and family	806 (90.1)
Communicating with health professionals	132 (14.7)
Meditation	204 (22.8)
Praying or seeking spiritual guidance	218 (24.4)
Exercise outdoors	549 (61.3)
Exercise indoors	527 (58.8)
Improving diet	414 (46.3)
Participating in hobbies	576 (64.4)
Improving sleep pattern	308 (34.4)
Unhealthy coping behaviour	
Alcohol consumption increased compared to before COVID-19	142 (15.9)
Cannabis use increased compared to before COVID-19	113 (12.6)

Source: Survey on COVID-19 and Mental Health (2020/2021).

Association between socioeconomic disruptions, coping behaviours, and mental health

Pearson's chi-square analysis (Supplementary File 1) showed that a significant proportion of the samples who reported a decrease in the total household income met the cut-off for anxiety ($\chi^2 = 27.401$, $p = 0.012$), distress ($\chi^2 = 34.862$, $p < 0.001$), depression ($\chi^2 = 29.088$, $p < 0.001$), but not PTSD. Loss of job had a significant association with anxiety ($\chi^2 = 7.9441$, $p = 0.005$), distress ($\chi^2 = 29.5090$, $p < 0.001$), PTSD ($\chi^2 = 4.8193$, $p = 0.028$), but not depression. Other social and economic disruptions: difficulty in meeting financial obligations, death of loved ones, feelings of loneliness/isolation, emotional distress, physical health problems, and challenges in personal relationships significantly associated with meeting the criteria for all the mental health symptoms ($p < 0.001$). Likewise, an increase in substance use (alcohol and cannabis) was significantly associated with meeting the criteria for mental health disorders ($p < 0.05$). The associations between healthy coping behaviour and mental health are shown in Supplementary File 1.

Exploratory factor analysis

The rotated factor loadings and unique variances from the EFA (Table 3) showed that the responses related to COVID-19 disruption, mental health, and coping behaviours belong to six distinct latent variables, cumulatively accounting for 53.9% of the variance in the data. Factor 1, including mental health indicators (anxiety, distress, depression, and PTSD) and COVID-19 social impact (loneliness/social isolation, emotional distress, physical health, and interpersonal-relationship disruptions) accounted for 20% of the total variance. This shows that mental health severity and COVID-19 social impact were highly correlated. Factor 2, the economic impact (job loss, decreased total household income, and unmet financial obligations) = 7.5% of variance. Factor 3, healthy behaviour – lifestyle changes (engaging in hobbies, improving diet and sleep patterns) = 6.9%. Factor 4, healthy behaviour – seeking intervention (consulting health care workers, meditation, and spiritualism/prayers) = 6.9%. Factor 5, healthy behaviour – socializing

Table 3. Exploratory factor analysis of COVID-19 socioeconomic disruptions, coping behaviours, and mental health.

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Uniqueness
Generalised anxiety disorder	0.845						0.241
Psychological distress	0.858						0.188
Depression	0.838						0.239
Post-traumatic stress disorder	0.619						0.422
Total household income decreased during COVID-19.		0.776					0.390
Loss of job/income source		0.722					0.438
Unmet financial obligations		0.605					0.519
Feelings of loneliness/isolation	0.711						0.442
Emotional distress	0.731						0.399
Physical health problems	0.588						0.592
Challenges in personal relationships	0.461						0.588
Communicate with health workers				0.626			0.539
Meditation				0.588			0.527
Spiritualism/Praying				0.563			0.507
Communicate with friends					0.414		0.603
Exercise outdoors					0.724		0.457
Exercise indoors					0.613		0.535
Engage in hobbies			0.420				0.660
Improve diet			0.634				0.486
Improve sleep pattern			0.762				0.382
Increased alcohol use						0.583	0.578
Increased cannabis use						0.737	0.405

Source: Survey on COVID-19 and Mental Health (2020/2021).
Blanks = loading < 0.4. Factor 1 = Mental health symptoms and medico-social disruptions. Factor 2 = Economic disruptions. Factor 3 = Healthy behaviours (lifestyle changes). Factor 4 = Healthy behaviours (spiritualism and health care seeking). Factor 5 = Healthy behaviours (physical and social activities). Factor 6 = Unhealthy behaviours (substance use).

(communicating with friends, indoor and outdoor exercises) = 6.7%. Factor 6, unhealthy behaviour (increased use of alcohol and cannabis) = 5.9%. The EFA (χ^2[231] = 5144.44, $p < 0.001$) was completed using the varimax orthogonal rotation approach; variances less than 0.40 were suppressed in the rotated factor (Table 3).

Structural equation modelling

The path diagram (Figure 2) shows the structural and measurement components of the SEM and the standardized regression coefficients (β). Table 4 shows the SEM output decomposed into direct and mediation effects following a set of hypotheses. An increase in social disruptions led to a significant increase in mental health symptoms severity among the participants (β = 0.77, $p < 0.001$). However, economic disruptions did not have a statistically significant direct effect on mental health symptoms severity (β = 0.03, $p = 0.445$). Decreasing mastery (β = −0.26, $p < 0.001$) and healthy coping behaviours (β = −0.08, $p = 0.047$) were directly associated with higher mental health symptoms severity. There was no significant direct effect of unhealthy coping behaviours on mental health symptoms (β = 0.01, $p = 0.914$). The mediation effects of healthy and unhealthy coping behaviours on the association between social and economic disruptions and mental health symptoms were not statistically significant. The final model's fitness indices (Table 5) showed that the final SEM: $\chi^2(209) = 480.79$, $p < 0.001$, RMSEA = 0.038, CFI = 0.950, TLI = 0.939, and SRMR = 0.050, met all the set parameter for model robustness.

Discussion

The COVID-19 pandemic led to various levels of disruptions in the economic and social life of youths (Bulloch et al., 2021; Findlay et al., 2020; Watkins-Martin et al., 2021; Zheng et al., 2021). We estimated the effect of COVID-19-related social and economic disruptions on the mental health of young Canadians using the SCMH data. The findings of our study align with the resilience theory, which

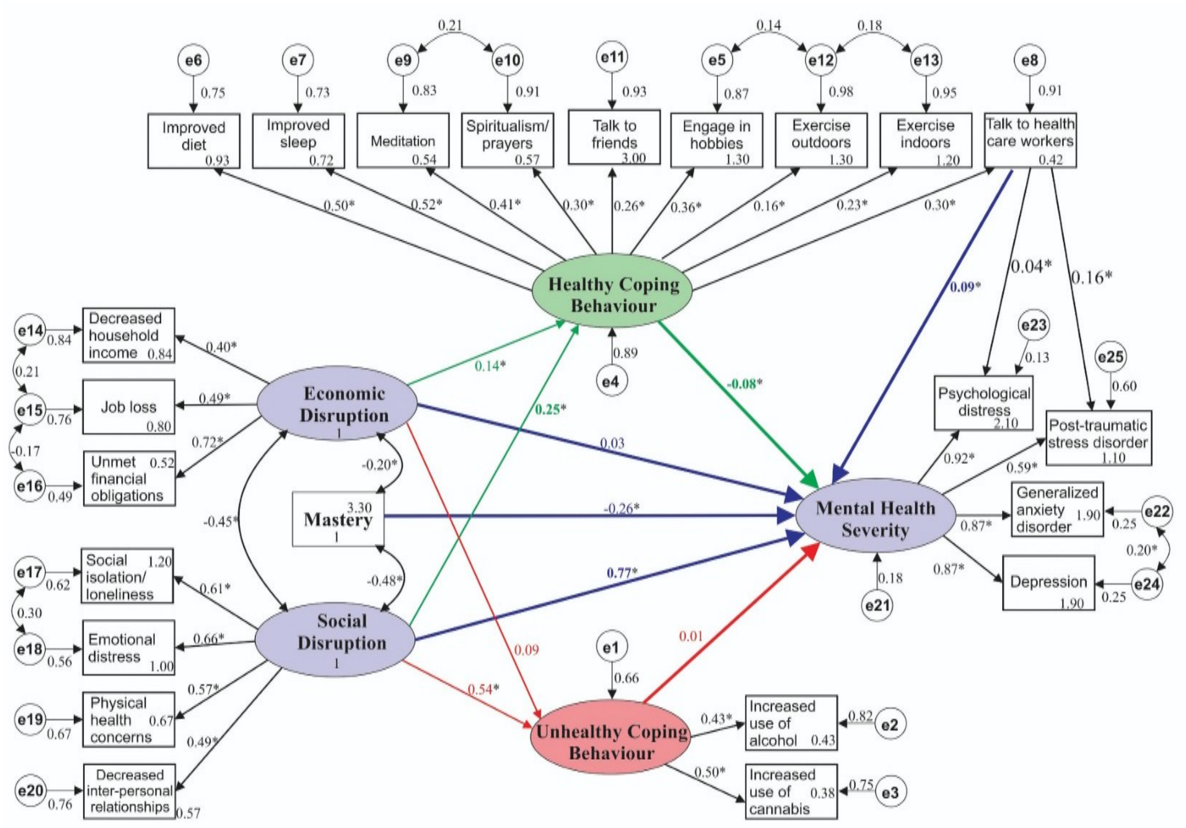

Figure 2. Structural model showing the direct and mediation effects of COVID-19 socioeconomic disruptions, coping behaviours, and mastery on mental health (* = $p < 0.05$).

Table 4. Decomposed structural equation model (hypotheses).

Hypotheses	Unstandardised regression coefficient (B)	Standardised regression coefficient (β)	95% Confidence interval	*p*-value
Direct effects				
Social disruption → MHS	20.68	0.77	0.65, 0.90	<0.001*
Economic disruption → MHS	1.39	0.03	−0.12, 0.05	0.445
Mastery → MHS	−0.41	−0.26	−0.33, −0.20	<0.001*
Healthy coping behaviours → MHS	−3.62	−0.08	−0.15, −0.00	0.047*
Unhealthy coping behaviours → MHS	0.37	0.01	−0.12, 0.14	0.914
Reaching out to health care workers → MHS	1.97	0.09	0.03, 0.14	0.001*
Social disruption → HCB	0.14	0.25	0.12, 0.38	<0.001*
Economic disruption → HCB	0.12	0.14	0.00, 0.27	0.043*
Social disruption → UCB	0.28	0.54	0.37, 0.70	<0.001*
Economic disruption → UCB	0.07	0.09	−0.08, 0.26	0.308
Mediation effects				
Social disruption → HCB → MHS	−0.24	−0.01	-	0.810
Economic disruption → UCB → MHS	−0.26	−0.01	-	0.442
HCB → RHCW → MHS	1.22	0.03	-	0.007*

Source: Survey on COVID-19 and Mental Health (2020/2021).

MHS = mental health symptoms severity. HCB = healthy coping behaviours. UCB = unhealthy coping behaviours. RHCW = reaching out to health care workers.

Table 5. Structural equation model fitness indices.

Fit statistic	Rule	Initial model	Final model
Likelihood ratio			
chi^2_ms (209)	-	698.065	480.792
p-value	>0.050	<0.001	<0.001
Population error			
RMSEA	<0.080	0.049	0.038
Information criteria			
AIC	Smaller	44984.801	44787.528
BIC	Smaller	45358.953	45209.649
Baseline comparison			
CFI	>0.900	0.911	0.950
TLI	>0.900	0.898	0.939
Size of residuals			
SRMR	<0.080	0.062	0.050
CD	>0.500	0.943	0.954

Source: Survey on COVID-19 and Mental Health (2020/2021).
MS = model vs. saturated. RMSEA = root mean squared error of approximation. CFI = comparative fit index. AIC = Akaike's information criterion. BIC = Bayesian information criterion. TLI = Tucker-Lewis's index. SRMR = standardized root mean squared residual. CD = coefficient of determination.

frames mental health outcomes as the result of dynamic interactions between risk factors (e.g. social and economic disruptions) and protective factors (e.g. coping skills) during adversity (Métais et al., 2022). The distinction between healthy and unhealthy coping behaviours reflects resilience theory's emphasis on adaptive and maladaptive strategies (Polatcı et al., 2023; Skinner et al., 2003). Healthy coping behaviours, such as maintaining social connections, engaging in hobbies, and seeking support from relevant authorities, served as protective factors that mitigated mental health symptoms by fostering psychological flexibility and positive adaptation. Conversely, unhealthy coping behaviours, such as substance use, failed to significantly mediate the impact of the disruptions, buttressing the resilience theory's assertion that maladaptive coping strategies undermine recovery from distress and increase vulnerability over time (Polatcı et al., 2023; Skinner et al., 2003).

Our bivariate and multivariate analyses showed a significant direct effect of COVID-19 social disruptions on mental health, such that an increase in social disruption predicts a higher mental health severity. The findings align with systematic reviews emphasizing the significant direct effect of social disruptions on mental health severity (Loades et al., 2020; Octavius et al., 2020). Researchers posited that social deprivation, characterized by loneliness, social isolation, emotional distress, and obstruction in face-to-face interpersonal relationships during the COVID-19 containment measures, negatively impacted the mental health of children and adolescents (Loades et al., 2020; Orben et al., 2020). Social deprivation is detrimental to Generation Z's personal development and well-being (Orben et al., 2020). Meeting social needs could be more desirable than financial gratifications among youths, especially in high-income economies. Unmet social needs can result in depression, psychological distress, anxiety, and PTSD among this cohort (Bell et al., 2023; Courtney et al., 2020; Findlay et al., 2020; Roberts et al., 2021).

Economic disruptions did not exhibit a statistically significant direct effect on mental health symptoms severity. This finding suggests that, within the examined context, the economic ramifications of the pandemic may not be immediate contributors to the severity of mental health symptoms among youths. Table 2 shows that over half of this cohort responded that they were unaffected by job/income loss, unmet financial obligations, and decreased household income, which were the components of economic disruption in the SEM. The lack of a direct economic effect underscores the applicability of those questions to this subpopulation (18–24 years). For instance, an average Canadian adolescent student may neither have full-time employment nor be accountable for their financial needs or household income (Statistics Canada, 2023b). The average pre-COVID-19 pandemic (2017 to 2019) youth employment rate was 58.2% (Statistics Canada, 2023b). Studies reporting the economic implications of the pandemic on youth mental health are often based on the financial situation of their parents, such as parental wage loss, low socioeconomic status, and household income (Argabright et al., 2022; Loades et al., 2020). Many studies did not adjust for social disruptions or the mediation effects of sociobehavioural patterns (Lu & Lin, 2021). We are unaware of any study that modelled both the economic and social impacts of COVID-19 on youth mental health. We believe that the social disruption measures were more direct to the youths with full responsibility, while the economic disruption measures were more at the parental and household levels and of less burden to the youths. In that situation, the youth tend to be less concerned with economic disruptions and more worried about social lives.

The SEM results elucidate the direct associations between individual-level factors and mental health symptoms. For example, decreasing mastery was identified as a significant contributor to higher mental health symptoms severity, buttressing the role of a diminished sense of control in adverse mental health outcomes (Statistics Canada, 2023c). The Public Health Agency of Canada included mastery as a critical determinant of positive mental health and emphasized its role in mediating coping mechanisms during a traumatic event (Statistics Canada, 2023c). However, only 28% of young Canadians aged 18 to 34 years exhibited a high sense of mastery (≥21, scale range 0–28) during the COVID-19 pandemic (Statistics Canada, 2023c).

Aligning with the resilience theory (Métais et al., 2022) the study explored various youth adaptive and coping behaviours using the variables in the SCMH. Through EFA analysis, we identified some clusters of coping behaviours broadly categorized as positive or healthy, such as improving diet and sleep, meditation and spiritualism, communication with friends, family, and health workers, and engaging in hobbies and exercises (Compas et al., 2001). The negative or unhealthy coping behaviours were increases in the use of alcohol and cannabis, which are deleterious to physical and mental health in the long term (Skinner et al., 2003). Consistent with previous research emphasizing the protective role of adaptive coping mechanisms in youth mental health (Compas et al., 2001; Polatcı et al., 2023), we found healthy coping behaviours associated with decreased mental health symptoms. Conversely, unhealthy coping behaviour could not significantly ameliorate the COVID-19 socioeconomic impact on youth mental health. We learned from the literature that substance use could be addictive and unhealthy and should be discouraged as a coping behaviour (Polatcı et al., 2023; Skinner et al., 2003).

Public health and policy implications

Youth mental health disorders have become a public health concern in several countries, including Canada, where 1 in 5 young people has been reported to experience mental health symptoms (Hawke et al., 2020). Our study contributes valuable knowledge to the fields of adolescent mental health, psychology, sociology, and rehabilitation, prompting further exploration and refinement of our understanding of the intricate interplay between social, economic, and personal factors in shaping mental health outcomes during challenging times. The study echoes the importance of social life to youths and how the lack of it could affect their mental well-being. Youths can adopt healthy or unhealthy coping behaviours and should be supported to make rightful decisions. Policymakers should be aware of the effect of social deprivation on youths while making containment policies. Alternative ways of socializing should be espoused while such policies last. Policymakers could allocate funding to research the feasibility and effectiveness of the coping strategies identified in this study, with the aim of incorporating them into youth mental health interventions.

Strengths and limitations

This nationwide survey was conducted by Statistics Canada – a reliable government agency. We ran a robust multivariate model accounting for several covariates using an adequate sample size and model fitness indices. However, due to the use of self-reported screening, we can neither guarantee causal relationships nor generalize our findings to all young Canadians. The study was cross-sectional, limiting our ability to establish temporal relationships. Future studies should adopt a longitudinal design incorporating pre-pandemic, pandemic, and post-pandemic data to further explore the mediation effects, and temporal and causal relationships within the proposed model. The measurement of economic disruptions may not fully capture the breadth of financial stressors experienced by youths.

Conclusions

The study revealed that social disruptions had a significant negative impact on mental health status, while the effects of economic disruptions were limited. Healthy coping behaviours and higher mastery scores were linked to reduced mental health symptoms, whereas unhealthy behaviours, such as substance use, showed no significant mediating effects. The findings emphasize the multifaceted interplay between social, economic, and personal factors in youth mental health disorders, underscoring the need for community-based initiatives that mitigate the impact of social upheavals on youths. Individual-level factors, such as adopting healthy coping behaviours and fostering a strong sense of self-efficacy, were associated with reduced symptom severity, suggesting these as promising targets for interventions. Conversely, unhealthy coping behaviours were associated with higher symptom severity, aligning with the resilience theory on the importance of adaptive and maladaptive behaviours in enhancing coping capacities. Interventions should focus on equipping youths with tools to build healthy coping mechanisms and strengthen self-efficacy. Future research should prioritize evaluating the efficacy of the identified healthy coping behaviours through longitudinal studies or randomized controlled trials. Policymakers, clinicians, and educators can leverage these insights to design tailored programmes that may support mental health recovery in youths worldwide.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Ogochukwu Kelechi Onyeso http://orcid.org/0000-0002-8821-4075
Adebiyi Boco http://orcid.org/0009-0000-1899-9957
Lars K. Hallstrom http://orcid.org/0009-0005-1001-2384

Authors'contributions

All authors contributed to the study conception, design, material preparation, and data analysis. The first draft of the manuscript was written by OKO, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Availability of data and materials

The datasets analysed during the current study are accessible through the Statistics Canada microdata application portal https://www.statcan.gc.ca/en/microdata/data-centres/access.

Ethics and consent to participate

The study was a secondary data analysis of Statistics Canada's Survey on COVID-19 and Mental Health. Statistics Canada analyst vetted the study protocol and results. Information about the research procedure and ethics is published (Statistics Canada, 2021a, 2021b).

References

Ampofo, R. T., & Aidoo, E. N. (2022). Structural equation modelling of COVID-19 knowledge and attitude as determinants of preventive practices among university students in Ghana. *Scientific African*, *16*, e01182. https://doi.org/10.1016/j.sciaf.2022.e01182

Argabright, S. T., Tran, K. T., Visoki, E., DiDomenico, G. E., Moore, T. M., & Barzilay, R. (2022). Covid-19-related financial strain and adolescent mental health. *The Lancet Regional Health - Americas*, *16*, 100391. https://doi.org/10.1016/j.lana.2022.100391

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *The American Psychologist*, *55*(5), 469–480. https://doi.org/10.1037/0003-066X.55.5.469

Bell, I. H., Nicholas, J., Broomhall, A., Bailey, E., Bendall, S., Boland, A., Robinson, J., Adams, S., McGorry, P., & Thompson, A. (2023). The impact of COVID-19 on youth mental health: A mixed methods survey. *Psychiatry Research*, *321*, 115082. https://doi.org/10.1016/j.psychres.2023.115082

Bovin, M. J., Marx, B. P., Weathers, F. W., Gallagher, M. W., Rodriguez, P., Schnurr, P. P., & Keane, T. M. (2016). Psychometric properties of the PTSD checklist for diagnostic and statistical manual of mental disorders-fifth edition (PCL-5) in veterans. *Psychological Assessment*, *28*(11), 1379–1391. https://doi.org/10.1037/pas0000254

Bulloch, A., Zulyniak, S., Williams, J., Bajgai, J., Bhattarai, A., Dores, A., Lukmanji, A., Pham, T., Wiens, K., & Patten, S. B. (2021). Poor mental health during the COVID-19 pandemic: Effect modification by age. *The Canadian Journal of Psychiatry*, *66*(9), 827–829. https://doi.org/10.1177/0706743721994408

Caron, J., & Liu, A. (2010). A descriptive study of the prevalence of psychological distress and mental disorders in the Canadian population: Comparison between low-income and non-low-income populations. *Chronic Diseases and Injuries in Canada*, *30*(3), 148–149. https://doi.org/10.24095/hpcdp.30.3.03

Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin*, *127*(1), 87–127. https://doi.org/10.1037/0033-2909.127.1.87

Cornelius, B. L., Groothoff, J. W., van der Klink, J. J., & Brouwer, S. (2013). The performance of the k10, k6 and GHQ-12 to screen for present state dsm-iv disorders among disability claimants. *BMC Public Health*, *13*(1), 128. https://doi.org/10.1186/1471-2458-13-128

Courtney, D., Watson, P., Battaglia, M., Mulsant, B. H., & Szatmari, P. (2020). Covid-19 impacts on child and youth anxiety and depression: Challenges and opportunities. *The Canadian Journal of Psychiatry*, *65*(10), 688–691. https://doi.org/10.1177/0706743720935646

Craig, S. G., Ames, M. E., Bondi, B. C., & Pepler, D. J. (2022). Canadian adolescents' mental health and substance use during the COVID-19 pandemic: Associations with COVID-19 stressors. *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement*, *55*(1), 46–55. https://doi.org/10.1037/cbs0000305

Cui, M., & Hong, P. (2021). COVID-19 and mental health of young adult children in China: Economic impact, family dynamics, and resilience. *Family Relations*, *70*(5), 1358–1368. https://doi.org/10.1111/fare.12573

Findlay, L. C., Arim, R., & Kohen, D. (2020). Understanding the perceived mental health of Canadians during the COVID-19 pandemic. *Health Reports*, *31*(4), 22–27. https://doi.org/10.25318/82-003-x202000400003-eng

Gonzalez, M. R., Brown, S. A., Pelham Iii, W. E., Bodison, S. C., McCabe, C., Baker, F. C., Baskin-Sommers, A., Dick, A. S., Dowling, G. J., Gebreselassie, S., Guillaume, M., Marshall, A. T., Sheth, C., Sowell, E. R., Van Rinsveld, A., & Tapert, S. F. (2023). Family well-being during the COVID-19 pandemic: The risks of financial insecurity and coping. *Journal of Research on Adolescence*, *33*(1), 43–58. https://doi.org/10.1111/jora.12776

Guerrero, M. D., & Barnes, J. D. (2022). Profiles of mental health and their association with negative impacts and suicidal ideation during the COVID-19 pandemic: A Canadian perspective. *Health Reports*, *33*(8), 19–30. https://doi.org/10.25318/82-003-x202200800002-eng

Hawke, L. D., Barbic, S. P., Voineskos, A., Szatmari, P., Cleverley, K., Hayes, E., Relihan, J., Daley, M., Courtney, D., Cheung, A., Darnay, K., & Henderson, J. L. (2020). Impacts of COVID-19 on youth mental health, substance use, and well-being: A rapid survey of clinical and community samples: Répercussions de la COVID-19 sur la santé mentale, l'utilisation de substances et le bien-être des adolescents : un sondage rapide d'échantillons cliniques et communautaires. *The Canadian Journal of Psychiatry*, *65*(10), 701–709. https://doi.org/10.1177/0706743720940562

Hawke, L. D., Monga, S., Korczak, D., Hayes, E., Relihan, J., Darnay, K., Cleverley, K., Lunsky, Y., Szatmari, P., & Henderson, J. (2021). Impacts of the COVID-19 pandemic on youth mental health among youth with physical health challenges. *Early Intervention in Psychiatry*, *15*(5), 1146–1153. https://doi.org/10.1111/eip.13052

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Jones, K., Mallon, S., & Schnitzler, K. (2021). A scoping review of the psychological and emotional impact of the COVID-19 pandemic on children and young people. *Illness, Crisis & Loss*, *31*(1), 175–199. https://doi.org/10.1177/10541373211047191

Kalcev, G., Preti, A., Orrù, G., & Carta, M. (2020). Mental health and the COVID-19 pandemic: A call for action. *The Open Public Health Journal*, *13*(1), 411–412. https://doi.org/10.2174/1874944502013010411

Kang, H., & Ahn, J.-W. (2021). Model setting and interpretation of results in research using structural equation modeling: A checklist with guiding questions for reporting. *Asian Nursing Research*, *15*(3), 157–162. https://doi.org/10.1016/j.anr.2021.06.001

Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E., Howes, M. J., Normand, S. L., Manderscheid, R. W., Walters, E. E., & Zaslavsky, A. M. (2003). Screening for serious mental illness in the general population. *Archives of General Psychiatry*, *60*(2), 184–189. https://doi.org/10.1001/archpsyc.60.2.184

Kline, R. B. (2016). *Methodology in the social sciences principles and practice of structural equation modeling*. Guilford Press.

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*(9), 606–613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

Lalani, N., Dongjuan, X., Cai, Y., & Arling, G. W. (2023). Structural equation model of coping and life satisfaction of community-dwelling older people during the COVID-19 pandemic. *Journal of Patient-Reported Outcomes*, *7*(1), 46. https://doi.org/10.1186/s41687-023-00583-x

Laurier, C., Pascuzzo, K., & Beaulieu, G. (2021). Uncovering the personal and environmental factors associated with youth mental health during the COVID-19 pandemic: The pursuit of sports and physical activity as a protective factor. *Traumatology*, *27*(4), 354–364. https://doi.org/10.1037/trm0000342

Loades, M. E., Chatburn, E., Higson-Sweeney, N., Reynolds, S., Shafran, R., Brigden, A., Linney, C., McManus, M. N., Borwick, C., & Crawley, E. (2020). Rapid systematic review: The impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. *Journal of the American Academy of Child and Adolescent Psychiatry*, *59*(11), 1218–1239.e3. https://doi.org/10.1016/j.jaac.2020.05.009

Lu, X., & Lin, Z. (2021). Covid-19, economic impact, mental health, and coping behaviors: A conceptual framework and future research directions. *Frontiers in Psychology*, *12*, 759974. https://doi.org/10.3389/fpsyg.2021.759974

Manea, L., Gilbody, S., & McMillan, D. (2012). Optimal cut-off score for diagnosing depression with the patient health questionnaire (PHQ-9): A meta-analysis. *Canadian Medical Association Journal*, *184*(3), E191–E196. https://doi.org/10.1503/cmaj.110829

Mental Health Commission of Canada. (2021). *The impact of COVID-19 on rural and remote mental health and substance use*. https://mentalhealthcommission.ca/wp-content/uploads/2021/10/The-Impact-of-COVID-19-on-Rural-and-Remote-Mental-Health-and-Substance-Use.pdf.pdf

Métais, C., Burel, N., Gillham, J. E., Tarquinio, C., & Martin-Krumm, C. (2022). Integrative review of the recent literature on human resilience: From concepts, theories, and discussions towards a complex understanding. *Europe's Journal of Psychology*, *18*(1), 98–119. https://doi.org/10.5964/ejop.2251

Moffitt, P., Aujla, W., Giesbrecht, C. J., Grant, I., & Straatman, A.-L. (2022). Intimate partner violence and COVID-19 in rural, remote, and northern Canada: Relationship, vulnerability and risk. *Journal of Family Violence*, *37*(5), 775–786. https://doi.org/10.1007/s10896-020-00212-x

Octavius, G. S., Silviani, F. R., Lesmandjaja, A., Angelina, Juliansen, A., & Juliansen, A. (2020). Impact of COVID-19 on adolescents' mental health: A systematic review. *Middle East Current Psychiatry*, *27*(1), 72. https://doi.org/10.1186/s43045-020-00075-4

Orben, A., Tomova, L., & Blakemore, S.-J. (2020). The effects of social deprivation on adolescent development and mental health. *The Lancet Child & Adolescent Health*, *4*(8), 634–640. https://doi.org/10.1016/S2352-4642(20)30186-3

O'Reilly, A., Tibbs, M., Booth, A., Doyle, E., McKeague, B., & Moore, J. (2021). A rapid review investigating the potential impact of a pandemic on the mental health of young people aged 12–25 years. *Irish Journal of Psychological Medicine*, *38*(3), 192–207. https://doi.org/10.1017/ipm.2020.106

Otanga, H., Tanhan, A., Musılı, P. M., Arslan, G., & Buluş, M. (2022). Exploring college students' biopsychosocial spiritual wellbeing and problems during COVID-19 through a contextual and comprehensive framework. *International Journal of Mental Health and Addiction*, *20*(1), 619–638. https://doi.org/10.1007/s11469-021-00687-9

Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health & Social Behavior*, *19*(1), 2–21. https://doi.org/10.2307/2136319

Polatcı, S., Antalyalı, Ö. L., Alparslan, A. M., & Yastıoğlu, S. (2023). Young people's happiness in the context of negative life events and coping strategies: A latent profile and latent class analysis. *BMC Psychology*, *11*(1), 335. https://doi.org/10.1186/s40359-023-01343-8

Radomski, A., Cloutier, P., Gardner, W., Pajer, K., Sheridan, N., Sundar, P., & Cappelli, M. (2022). Planning for the mental health surge: The self-reported mental health impact of COVID-19 on young people and their needs and preferences for future services. *Canadian Journal of Community Mental Health*, *41*(1), 46–61. https://doi.org/10.7870/cjcmh-2022-006

Roberts, N. P., Kitchiner, N. J., Lewis, C. E., Downes, A. J., & Bisson, J. I. (2021). Psychometric properties of the PTSD checklist for DSM-5 in a sample of trauma exposed mental health service users. *European Journal of Psychotraumatology*, *12*(1), 1863578. https://doi.org/10.1080/20008198.2020.1863578

Sharma, V., Reina Ortiz, M., & Sharma, N. (2020). Risk and protective factors for adolescent and young adult mental health within the context of COVID-19: A perspective from Nepal. *Journal of Adolescent Health*, *67*(1), 135–137. https://doi.org/10.1016/j.jadohealth.2020.04.006

Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin*, *129*(2), 216–269. https://doi.org/10.1037/0033-2909.129.2.216

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–1097. https://doi.org/10.1001/archinte.166.10.1092

Statistics Canada. (2021a). *Survey on COVID-19 and mental health, September to December 2020*. https://www150.statcan.gc.ca/n1/daily-quotidien/210318/dq210318a-eng.htm

Statistics Canada. (2021b). *Survey on COVID-19 and mental health, February to May 2021*. https://www150.statcan.gc.ca/n1/daily-quotidien/210927/dq210927a-eng.htm

Statistics Canada. (2023a). *Survey on COVID-19 and mental health (SCMH)*. https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5330

Statistics Canada. (2023b). *Labour force survey, May, 2023: Highlights*. Retrieved November 28, 2023, from https://www150.statcan.gc.ca/n1/daily-quotidien/230609/dq230609a-eng.htm

Statistics Canada. (2023c). *Sense of mastery: A psychological resource during the COVID-19 pandemic*. Retrieved November 28, 2023, from https://www.canada.ca/en/public-health/services/publications/diseases-conditions/infographic-sense-mastery-psychological-resource-during-covid-19-pandemic.html

Theron, L., Levine, D., Ungar, M., & Sarker, M. N. I. (2021). Resilience to COVID-19-related stressors: Insights from emerging adults in a South African township. *PLOS ONE*, *16*(12), e0260613. https://doi.org/10.1371/journal.pone.0260613

Thomas, S., & Wannell, B. (2009). Combining cycles of the Canadian community health survey. *Health Reports*, *20*(1), 53–58.

Wang, G. Y., & Tang, S. F. (2020). Perceived psychosocial health and its sociodemographic correlates in times of the COVID-19 pandemic: A community-based online study in China. *Infectious Diseases of Poverty*, *9*(1), 148. https://doi.org/10.1186/s40249-020-00770-8

Watkins-Martin, K., Orri, M., Pennestri, M. H., Castellanos-Ryan, N., Larose, S., Gouin, J. P., Ouellet-Morin, I., Chadi, N., Philippe, F., Boivin, M., Tremblay, R. E., Côté, S., & Geoffroy, M. C. (2021). Depression and anxiety symptoms in young adults before and during the COVID-19 pandemic: Evidence from a Canadian population-based cohort. *Annals of General Psychiatry*, *20*(1), 42. https://doi.org/10.1186/s12991-021-00362-2

World Health Organization. (2022). *Mental disorders*. Retrieved December 1, 2024, from https://www.who.int/news-room/fact-sheets/detail/mental-disorders

Zheng, J., Morstead, T., Sin, N., Klaiber, P., Umberson, D., Kamble, S., & DeLongis, A. (2021). Psychological distress in North America during COVID-19: The role of pandemic-related stressors. *Social Science & Medicine*, *270*, 113687. https://doi.org/10.1016/j.socscimed.2021.113687