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Transition to emerging adulthood during the COVID-19 pandemic: Changes in anxiety and the role of inclusion/exclusion experiences

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ABSTRACT

The study investigated a developmentally sensitive group, emerging adults going through a critical post-secondary educational transition in tandem with the first wave of the COVID pandemic in Finland. The participants (n = 330) were surveyed initially during their first year in secondary education, and again during the pandemic, right after their graduation in summer 2020. According to latent change score models, there was a small mean level increase in anxiety but interestingly, the increase was stronger among individuals with fewer prior anxiety symptoms and fewer prior experiences of loneliness. However, during-pandemic experiences of social inclusion and living with parents were protective against an increase in anxiety symptoms. Findings from this longitudinal study add to the understanding of the complexity of the COVID impact on mental health and the intertwined dynamics of social relations and mental well-being among emerging adults.

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KEYWORDS Anxiety; COVID-19; educational transition; resilience; social inclusion

Introduction

The transition from adolescence to adulthood is a normative life transition, but one that has been claimed to be critical (Schulenberg et al., 2004). Transitions have been considered inherently stressful (Dornbusch, 2000), and the transition to emerging adulthood involves major contextual and social role changes. Emerging adults can be expected to experience changes in their sense of autonomy and belongingness in relation to

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their families, peer groups, and the society. They represent a particular at-risk population regarding mental health, as the symptoms of chronic problems such as anxiety and depression typically begin before the age of 24 years old (Kessler et al., 2007).

However, post-secondary transition may be a positive experience as well. Actually, Bell and Lee (2008) found low levels and a decreasing trend in stress during the transition to adulthood among young women. They concluded that it is only when changes are unpredictable, and the transition fails to conform to the social norms for the life stage that stress transpires (see also, Pearlin, 2010).

The COVID pandemic represents an unexpected event. For the graduates who were finalizing their secondary education in spring 2020, the pandemic restrictions resulted in many potentially stressful disruptions like rapid re-organization of final high school exams, university entrance exams, and final internships for vocational graduates. Simultaneously, the job market changed drastically leaving many graduates unemployed. Moreover, the fear of infection and pandemic restrictions resulting in unforeseen social and physical isolation represented important stress factors for mental health.

The accumulation of educational, social, economic, health, and identity-related stressors during the transition in tandem with the pandemic may have contributed to mental health problems. Recent meta-analyses on COVID impact on adolescents have indicated a worrying increase especially in anxiety symptoms (Jones et al., 2021; Panchal et al., 2021; Racine et al., 2021). However, studies among secondary school postgraduates are scarce and mostly cross-sectional (AlAzzam et al., 2021; Émon et al., 2021; Giannopoulou et al., 2021; Yu et al., 2021). The present longitudinal study fills this gap by following emerging adults from their first study year to their expected graduation in the midst of the pandemic.

According to current resilience literature, successful adjustment to stress (i.e., resilience) is not only a question of personal traits, but a process that draws on resources distributed across multiple systems, including biological, psychological, social, and ecological ones (Ungar, 2021; Ungar et al., 2013). Interactions across these multiple contexts, availability of multilevel coping resources, and individuals' capability to utilize those resources all affect individuals' response to stressful conditions (Burt & Paysnick, 2012).

The current study focused on psychosocial factors, and more specifically on subjective experiences related to social inclusion and exclusion,

as the pandemic offers a natural experiment setting to examine the impact of unforeseen social isolation. Taking a systemic perspective, we applied the macro-level concept of social inclusion, which has lately gained attention as a subjective individual-level experience associated with health and well-being (Coombs et al., 2013; Leemann et al., 2022). Despite a lack of consensual definition, a recent systematic review (Cordier et al., 2017) highlights three main domains brought up in the literature: (1) participation, (2) sense of belonging and connectedness, and (3) citizenship and rights, including notions of agency and responsibility. Thus, social inclusion as a subjective experience reflects individuals' relations and agency within the socio-ecological system. The importance of adolescents' agency when facing stress has been noticed in recent lockdown studies (Gittings et al., 2021; Henkens et al., 2022; Marchini et al., 2021).

Adolescents' experiences related to social exclusion such as being bullied or feeling lonely have well-known long-lasting associations with internalizing symptoms (see, e.g., Holt-Lunstad et al., 2015; Klomek et al., 2015). Several studies have highlighted loneliness as a key correlate of anxiety and depression during the pandemic (Loades et al., 2020). According to a recent Danish study, loneliness was found to be a key mediator between different types of social disconnectedness and mental health outcomes among high schoolers (Santini et al., 2021). In addition, emerging adults living alone or lacking parental support have been found to be more negatively affected by the pandemic (Panchal et al., 2021; Racine et al., 2021). Furthermore, pre-pandemic bullying victimization has been found to predict internalizing problems during pandemic (Shanahan et al., 2022). Correspondingly, victimization at school has been identified as a major risk factor for anxiety disorder in adulthood (Stapinski et al., 2014).

According to the stress sensitization hypothesis (Hammen et al., 2000; Rutter, 2012), individuals become sensitized to stress over time, such that those with more prior exposure to adversities have a lower threshold for developing a negative emotional reaction to successive stressors. Consistently, prior disorder status is typically the strongest predictor of having the same disorder later (Copeland et al., 2009). Correspondingly, recent studies on COVID impact on youth have showed that those with pre-existing anxiety have suffered from anxiety symptoms also during pandemic (see, e.g., Essau & de la Torre-Luque, 2021; Giannopoulou et al., 2021; Gittings et al., 2021; Morales et al., 2021). However, findings

regarding whether an *increase* in anxiety symptoms has been higher among those with pre-existing symptoms or those without, are inconsistent (Haikalis et al., 2022; Hamza et al., 2021; Morales et al., 2022).

An alternative and less explored hypothesis from resilience research states that a prior adversity may have a strengthening 'steeling' effect in relation to the response to later stress or adversity (Rutter, 2012). More specifically, exposure to *moderate* stressors earlier in life may protect individuals from risk for psychopathology in the face of subsequent stress (Liu, 2015; Stroud, 2020). Thus, social isolation during the pandemic may have been especially stressful for those with no prior experiences of loneliness.

Current study

We examined the mental well-being of Finnish emerging adults by analysing longitudinal changes in anxiety symptoms. Further, we explored how disruptions caused by the pandemic and prior or present experiences related to social inclusion/exclusion were associated with anxiety change. First, we expected a mean-level increase in anxiety from the first study year to the pandemic (Hypothesis 1). Secondly, we expected pandemic disruptions to be positively associated with the change (Hypothesis 2). Next, we investigated two contrasting hypotheses. Following the stress sensitization model, we tested whether prior adversities (pre-pandemic anxiety, loneliness, and peer victimization history) predicted increases in anxiety symptoms (Hypothesis 3A). Contrastingly and in line with the 'steeling effect' (Rutter, 2012), we tested whether the prior adversities protected from an increase in anxiety (Hypothesis 3B). Finally, we explored during-pandemic experiences of social inclusion and living with parents and expected them to be negatively related with increase in anxiety (Hypothesis 4).

Method

Participants and procedure

The current study comprises 330 emerging adults (M_{age} = 19.1, SD = 0.4, 67% female) finishing their secondary education in a Finnish high school or vocational institute. They were surveyed initially during their first study year (fall 2017) in the context of another project and again during the pandemic first wave in summer 2020, right after their (expected)

graduation. In total, 330 individuals participated in both waves and provided informed consent. Compared to the initial survey (N= 3007 at Time 1), respondents in the final longitudinal sample were more likely to be females (67% vs. 53%, $\chi 2 = 27.92$, $p < .000$) and from high school (73% vs. 56%, $\chi 2 = 34.91$, $p < .000$). Regarding age, maternal education level, pre-pandemic anxiety, and pre-pandemic loneliness no significant differences were found. The pre-pandemic survey used a planned missingness design (Little & Rhemtulla, 2013) meaning that participants were randomly assigned to have missing items (~33%) in measures for anxiety and loneliness.

Measures

Demographic factors included gender, age, school type (vocational/high school) and maternal education level. Response options for mother's highest level of completed education were: (1) primary education; (2) secondary education; (3) secondary education with additional vocational studies; (4) university education; (5) I don't know (defined as missing values).

The 7-item Generalized Anxiety Disorder Scale (GAD-7) was used to assess the symptoms of generalized anxiety disorder and the severity during the preceding two weeks, with response scale from 1 (not at all) to 4 (nearly every day) both before ($\alpha = .91$) and during the pandemic ($\alpha = .92$). Sample items are 'Feeling nervous, anxious or on edge' and 'Trouble relaxing'.

Pre-pandemic loneliness was measured with a 12-item version of the UCLA loneliness scale, with response scale 1–4 ($\alpha = .90$) ranging from 'Strongly disagree' to 'Strongly agree'. Sample items are 'I feel left out.' and 'I feel part of a group of friends.'

Peer victimization history was measured retrospectively during pandemic with a question 'Have you been bullied by other students during your school years?'. The response scale ranged from 1 (not at all) to 4 (a lot). Two items were used: (a) during basic education and (b) during vocational/high school. The two items ($r = 0.30$, $p < .001$) were combined and summed.

Pandemic disruptions were measured with three questions. 1)'Did the pandemic situation affect your studies in any of the following ways?' with 6 items, sample items: "I got worse exam results than I would have without pandemic.", and 'My graduation was postponed.'

and response options yes/no. 2)"Did the pandemic restrictions hamper your transition to further studies?" with response yes/no, and 3)"Did the pandemic restrictions hamper your employment?" with response options 'I lost a summer job' and 'I lost some other part-time or full-time job' and 'My income or working hours decreased' coded as 'yes' and options 'Not much' and 'I don't know' coded as 'no'. The composite was dummy-coded (0 = no disruptions, 1 = one or more disruptions).

Experiences of social inclusion (Leemann et al., 2022) were measured during the pandemic with 10 items (e.g., 'I belong to a group or community that is important for me.', 'I get help when I really need it.') with a 5-point response scale from strongly disagree to strongly agree (α = .91). Living arrangements during pandemic were enquired by asking whether the respondent lived in same household with their guardians, alone, or with some other person. The responses were dummy-coded (1 = living with parents/guardians, 0 = not).

Statistical analysis

As for investigating change in anxiety, we used latent change score modelling (LCS; McArdle & Hamagami, 2001). LCS models are a class of structural equation models (SEM) where the latent change score factor represents the average intraindividual change and interindividual differences in change from time 1 to time 2. With the first LCM model, we tested whether there was a significant mean level increase in anxiety, and whether pre-pandemic levels of anxiety were predictive to the change. Further, we conducted three LCS models to test whether pandemic disruptions, pre-pandemic vulnerability factors, or during-pandemic protective factors were predictive of changes in anxiety, while controlling for demographic factors. Before conducting LCS models, we first tested the fit of the one-factor model in a confirmatory factor analysis (CFA). Results revealed a good model fit, ($\chi 2$ (81) = 187.943, $p < .05$, *CFI* = .940, *RMSEA* = .063, *TLI* = .933, *SRMR* = .068). Next, we tested for longitudinal measurement invariance, which was supported (see Supplementary Table S1). With all models, continuous predictors were centred at the sample mean and analyses were conducted in Mplus software version 8.6, with robust maximum likelihood estimator and full information maximum likelihood to deal with missing values. As for the measures of anxiety,

loneliness, and social inclusion, we investigated latent variables based on measurement models to correct for measurement error (for CFA results, see Supplementary Table S2).

Results

Descriptive statistics

The correlations among observed variables are presented in Table 1. During-pandemic anxiety correlated statistically significantly with all other variables, most strongly with experiences of social inclusion ($r = -.54$, $p < .001$), pre-pandemic anxiety ($r = .36$, $p < .001$), and pandemic disruptions ($r = .29$, $p < .001$).

Longitudinal change in anxiety

In the first step, an unconditional LCSM without predictor variables was estimated to investigate change in anxiety (χ 2 (81) = 187.943, $p < .05$, *CFI* = .940, *RMSEA* = .063). In line with Hypothesis 1, the pre-pandemic mean latent anxiety score of 1.85 increased by 0.11 ($p< .05$). Higher increases in anxiety were significantly associated with lower pre-pandemic anxiety (covariance = −0.35, $p < 0.001$).

Concerning our predictor variables, three LCSM models were conducted (Table 2). As for LCS Model 1, no statistically significant relationship between demographic factors (i.e., gender, age, and maternal education level) and anxiety change was found. However, school type was associated with the change in anxiety ($ß = -0.19$, $SE = 0.08$, $p = 0.009$), such that vocational school students showed more increase in anxiety than high school students. Unexpectedly (Hypothesis 2), pandemic disruptions were unrelated to change in anxiety ($ß = -0.01$, $SE = 0.06$, $p = 0.922$) when controlling for demographic factors, despite the fact

Table 1. Descriptive statistics.

Variable	Scale	M	SD	1	2	3	4	5	6	7
1 During-pandemic anxiety	1–4	1.80	0.77		**.36**	**.22**	**.14**	**.29**	**−.54**	**−.21**
2 Pre-pandemic anxiety	1–4	1.68	0.71			**.19**	**.36**	**.30**	**−.26**	.02
3 Peer victimization history	1–4	1.48	0.51				**.16**	**.19**	−.11	**−.20**
4 Pre-pandemic loneliness	1–4	1.55	0.49						**−.33**	.03
5 Pandemic disruptions	0–1	0.69	0.46						**−.13**	−.02
6 Experiences of social inclusion	1–5	3.89	0.70							.11
7 Living with parents	0–1	0.80	0.40							

Note. Statistically significant correlations (p < .05) written **in bold**. Results for observed variables.

Table 2. Results of the LCS Models: Regression of Mean Change of Anxiety (GAD-7) on Pandemic disruptions (Model 1), Pre-pandemic vulnerability factors (Model 2), and During-pandemic protective factors (Model 3), Controlling for Demographic Factors.

	Pre-pandemic Anxiety		During-pandemic Anxiety		Anxiety Latent Change	
	B (SE)	Std. β	B (SE)	Std. β	B (SE)	Std. β
Model 1: Demographics and pandemic disruptions (χ2 = 230(138), CFI = 0.949, RMSEA = 0.049, SRMR = 0.058)						
Gender (0 = male, 1 = female)	**0.45 (0.09)**	0.27	**0.52 (0.10)**	0.30	0.10 (0.12)	0.05
Age	−0.06 (0.10)	−0.03	−0.10 (0.14)	−0.04	−0.07 (0.16)	−0.03
School type (0 = vocat., 1 = high)	0.24 (0.12)	0.13	−0.14 (0.13)	−0.07	**−0.40 (0.17)**	−0.19
Maternal education level	−0.01 (0.06)	−0.01	0.10 (0.06)	0.11	0.10 (0.08)	0.11
Pandemic disruptions	**0.24 (0.09)**	0.14	**0.22 (0.10)**	0.13	−0.01 (0.13)	−0.01
r^2		**0.14**		**0.13**		0.03
Model 2: Demographics and pre-pandemic vulnerability factors (χ2 = 612(413), CFI = 0.927, RMSEA = 0.041, SRMR = 0.074)						
Peer victimization history	**0.10 (0.05)**	0.14	**0.13 (0.05)**	0.16	0.03 (0.07)	0.03
Pre-pandemic loneliness	**0.68 (0.13)**	0.40	**0.31 (0.12)**	0.17	**−0.38 (0.15)**	−0.19
r^2		**0.30**		**0.18**		0.07
Model 3: Demographics, pre-pandemic vulnerability and during-pandemic protective factors (χ2 = 1156(784), CFI = 0.913, RMSEA = 0.041, SRMR = 0.074)						
Peer victimization history	**0.11 (0.05)**	0.15	**0.10 (0.04)**	0.13	−0.01 (0.06)	−0.01
Pre-pandemic loneliness	**0.63 (0.13)**	0.37	−0.04 (0.10)	−0.02	**−0.67 (0.15)**	−0.35
Experiences of Social Inclusion	−0.11 (0.10)	−0.09	**−0.82 (0.14)**	−0.61	**−0.71 (0.16)**	−0.48
Living with parents	0.11 (0.10)	0.06	**−0.29 (0.12)**	−0.15	**−0.40 (0.13)**	−0.18
r^2		**0.29**		**0.47**		**0.29**

Note. *Statistically significant results (p < .05) written **in bold**. All models controlled for demographic factors.*
Std. β = standardized slope.
Supplementary material for: Transition to Emerging Adulthood during the COVID-19 Pandemic: Changes in Anxiety and the Role of Inclusion/Exclusion Experiences

that pandemic disruptions were associated with anxiety at both measurement points. We also tested an alternative model with individual disruption items as predictors instead of a composite. None of the items were significantly associated with the latent anxiety change score. As the disruptions were not associated with anxiety change, we excluded the variable from further analyses.

In LCS model 2, we tested the effects of pre-pandemic vulnerability factors while controlling for demographic factors. Lower increases in anxiety were related to higher levels of pre-pandemic loneliness ($ß = -0.19$, $SE = 0.07$, $p = 0.008$), in line with the Hypothesis 3B. In other words, the less lonely the participants had been before the pandemic, in the beginning of secondary education, the more their anxiety had increased during pandemic. However, pre-pandemic loneliness was still positively associated with pre- and during-pandemic anxiety levels ($ß = 0.40$ and $ß = 0.17$, respectively). Peer victimization history had no significant effect on anxiety change ($ß = 0.03$). Nevertheless, it was positively associated with anxiety both before and during pandemic ($ß = 0.14$ and $ß = 0.16$, respectively).

LCS model 3 testing during-pandemic protective factors indicated expectedly (Hypothesis 4) that higher increases in anxiety were associated with lower levels of experiences of social inclusion ($ß = -0.48$, $SE = 0.07$, $p < 0.001$) and living without parents ($ß = -0.18$, $SE = 0.06$, $p = 0.002$). Both predictors were negatively associated also with during-pandemic anxiety scores ($ß = -0.61$, $ß = -0.15$, correspondingly). In this model, pre-pandemic loneliness was still negatively related to mean level change in anxiety, however not anymore with during-pandemic anxiety.

Discussion

The present study focused on emerging adults with a unique stress condition, namely graduation in the middle of the pandemic. We explored longitudinal change in anxiety from the first study year to the pandemic and how pandemic disruptions and prior or present inclusion/exclusion experiences were related to anxiety change.

Firstly, we found an expected yet a small mean-level increase in anxiety symptoms, which was expected and in line with recent meta-analyses among adolescents (Panchal et al., 2021; Racine et al., 2021). However unexpectedly, the intraindividual increase in anxiety was not related to

self-reported pandemic disruptions like difficulties with graduation, employment, or transition to further studies. Still, anxiety-prone individuals were keener to report pandemic disruptions.

Interestingly, individuals with lower levels of pre-existing anxiety had higher increases in anxiety symptoms. This finding is in contrast with the stress-sensitization hypothesis (Hammen et al., 2000), and common expectations in the field (see, e.g., Yao et al., 2020) suggesting that individuals higher in prior anxiety would be more affected by the stressors related to the pandemic. However, the finding is in line with at least three recent lockdown studies among emerging adults (Haikalis et al., 2022; Hamza et al., 2021; Morales et al., 2022).

Moreover, prior experiences of peer victimization were not predictive of anxiety change but those with less prior experiences of loneliness had higher increase in anxiety than others. This result indicates that the lockdown conditions in tandem with the transition were more adverse for students with fewer prior experiences of being alone (see also, Hamza et al., 2021), and may imply a 'steeling effect' (Rutter, 2012). Following Entringer and Gosling (2021), one could expect that for individuals more accustomed to feeling isolated or alone the social-contact restrictions represented a smaller deviation from their typical situation. Moreover, the lockdown may have brought relief to those being victimized in school (Repo et al., 2022), or finding social situations stressful in general (Asbury et al., 2021; Morales et al., 2022). Some evidence exists that the lockdown has had more negative emotional effects on extroverts compared to introverts (Rettew et al., 2021; Wijngaards et al., 2020).

Moreover, the post-secondary transition is a period of individuation and increasing time spent alone, even without pandemic restrictions. In general, whether increased aloneness turns into an unpleasant experience depends on one's subjective perception and attitude towards being alone (Laursen & Hartl, 2013). Individuals with past experiences of loneliness may have developed some affinity for being alone, while for others, strong aversion for aloneness may have elevated symptoms of anxiety (Vanhalst et al., 2013). Further research should explore how (overcoming) past adversities like loneliness or experiences of social isolation may build resilience for future crises and life transitions, and which factors (e.g., coping resources and social support) moderate this effect.

The abovementioned does not imply that lack of social connectedness would not have a negative concurrent effect on mental well-being. As our results showed expectedly, during-pandemic experiences of social

inclusion and living with parents were protective against increases in anxiety. These findings are in line with the socio-ecological perspective on resilience (Ungar, 2021), and corroborate with emergent literature on how the pandemic has intensified existing social inequalities (see e.g., Gittings et al., 2021; National Student Clearinghouse Research Center, 2021; Silva et al., 2021).

Strengths and limitations

The study has several strengths. Firstly, it pinpointed a sensitive and hard-to-reach group of emerging adults after graduation. Secondly, the study used longitudinal data while the majority of lockdown studies are cross-sectional (Vaillancourt et al., 2021). Thirdly, it investigated subjective experiences of social inclusion, not often explored in lockdown or resilience studies. But the findings should be interpreted considering several limitations. First, as the sample was not population-based, it cannot be regarded as representative. Secondly, the results should not be generalized to the entire length of the pandemic. Internalizing problems might be increasing as the crisis continues (Racine et al., 2021). Thirdly, we used (latent) difference score as an indicator of change, an approach which can be debated because of issues such as regression to the mean or a possible ceiling effect (Thomas & Zumbo, 2012). Lastly, it is impossible to completely disentangle the pandemic-induced stress from other stress related to post-secondary transition. Nevertheless, the findings make a novel contribution to understanding the complexity of COVID impact and intertwined dynamics of emerging adults' social relations and mental health.

Conclusion

To conclude, social relations seem to play an important yet complex role in adjusting to stressful life events during the pandemic. Our findings suggest that the greatest deterioration in anxiety in the context of the COVID pandemic in tandem with post-secondary transition may have been experienced by individuals with low prior symptoms of anxiety and scarce prior experiences of loneliness. Yet those high in prior symptoms and vulnerabilities continued to have heightened anxiety during the pandemic. These findings suggest a more nuanced approach to understanding the dynamics of social relations and mental health among

emerging adults during stressful life events. Post-secondary transition during the pandemic may have created new vulnerable groups and deepened the existing disparities. These pathways might turn out to be significant in steering the subsequent trajectories in later life. Generally, as an especially vulnerable group of emerging adults, the ones who graduated during the pandemic are particularly worthy of support and attention in the future.

Disclosure statement

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Data availability statement

Data is available from the first author upon request.

Ethics approval

The procedure followed the ethical standards of the University of Turku Ethics Committee for Human Sciences, Finnish National Board of Research Integrity (TENK, National Advisory Board on Research Ethics 2009), and the Finnish Personal Data Act (523/1999). The data collection procedure was consistent with the Finnish Human Subjects Protection regulations. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments. Informed consent was obtained from all individual participants included in the study.

References

AlAzzam, M., Abuhammad, S., Abdalrahim, A., & Hamdan-Mansour, A. M. (2021). Predictors of depression and anxiety among senior high school students during COVID-19 pandemic: The context of home quarantine and online education. *The Journal of School Nursing*, *37*(4) 241–248 https://doi.org/10.1177/1059840520988548

Asbury, K., Fox, L., Deniz, E., Code, A., & Toseeb, U. (2021). How is COVID-19 affecting the mental health of children with special educational needs and disabilities and their families? *Journal of Autism and Developmental Disorders*, *51*(5), 1772–1780. https://doi.org/10.1007/s10803-020-04577-2

Bell, S., & Lee, C. (2008). Transitions in emerging adulthood and stress among young Australian women. *International Journal of Behavioral Medicine*, *15*(4), 280–288. https://doi.org/10.1080/10705500802365482

Burt, K. B., & Paysnick, A. A. (2012). Resilience in the transition to adulthood. *Development and Psychopathology*, *24*(2), 493–505. https://doi.org/10.1017/S0954579412000119

Coombs, T., Nicholas, A., & Pirkis, J. (2013). A review of social inclusion measures. *Australian and New Zealand Journal of Psychiatry*, *47*(10), 906–919. https://doi.org/10.1177/0004867413491161

Copeland, W. E., Shanahan, L., Costello, E. J., & Angold, A. (2009). Childhood and adolescent psychiatric disorders as predictors of young adult disorders. *Archives of General Psychiatry*, *66*(7), 764–772. https://doi.org/10.1001/archgenpsychiatry.2009.85

Cordier, R., Milbourn, B., Martin, R., Buchanan, A., Chung, D., Speyer, R., & Renzaho, A. M. N. (2017). A systematic review evaluating the psychometric properties of measures of social inclusion. *PLoS ONE*, *12*(6), e0179109. https://doi.org/10.1371/journal.pone.0179109

Dornbusch, S. M. (2000). Transitions from adolescence: A discussion of seven articles. *Journal of Adolescent Research*, *15*(1), 173–177. https://doi.org/10.1177/0743558400151009

Émon, A., Greene, J., & Timonen, V. (2021). Generation covid: Experiences of the coronavirus pandemic among secondary school graduates of 2020 in Ireland. *Cogent Education*, *8*(1), 1947014. https://doi.org/10.1080/2331186X.2021.1947014

Entringer, T. M., & Gosling, S. D. (2021). Loneliness during a nationwide lockdown and the moderating effect of extroversion. *Social Psychological and Personality Science*, *13*(3), 769–780. https://doi.org/10.1177/19485506211037871

Essau, C. A., & de la Torre-Luque, A. (2021). Adolescent psychopathological profiles and the outcome of the COVID-19 pandemic: Longitudinal findings from the UK Millennium Cohort Study. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *110*, 110330. https://doi.org/10.1016/j.pnpbp.2021.110330

Giannopoulou, I., Efstathiou, V., Triantafyllou, G., Korkoliakou, P., & Douzenis, A. (2021). Adding stress to the stressed: Senior high school students' mental health amidst the COVID-19 nationwide lockdown in Greece. *Psychiatry Research*, *295*, 113560. https://doi.org/10.1016/j.psychres.2020.113560

Gittings, L., Toska, E., Medley, S., Cluver, L., Logie, C. H., Ralayo, N., & Mbithi-Dikgole, J. (2021). 'Now my life is stuck!': Experiences of adolescents and young people during

COVID-19 lockdown in South Africa. *Global Public Health*, *16*(6), 947–963. https://doi.org/10.1080/17441692.2021.1899262

Haikalis, M., Doucette, H., Meisel, M. K., Birch, K., & Barnett, N. P. (2022). Changes in college student anxiety and depression from pre-to during-COVID-19: Perceived stress. *Academic Challenges, Loneliness, and Positive Perceptions. Emerging Adulthood*, *10*(2), 534–545. https://doi.org/10.1177/21676968211058516

Hammen, C., Henry, R., & Daley, S. E. (2000). Depression and sensitization to stressors among young women as a function of childhood adversity. *Journal of Consulting and Clinical Psychology*, *68*(5), 782–787. https://doi.org/10.1037/0022-006X.68.5.782

Hamza, C. A., Ewing, L., Heath, N. L., & Goldstein, A. L. (2021). When social isolation is nothing new: A longitudinal study on psychological distress during COVID-19 among university students with and without preexisting mental health concerns. *Canadian Psychology/Psychologie Canadienne*, *62*(1), 20. https://doi.org/10.1037/cap0000255

Henkens, J., Visser, K., Finkenauer, C., Vermeulen, S. T., & Stevens, G. (2022). "I Think It'll All Blow Over in the End": How Young People Perceive the Impact of COVID-19 on Their Future Orientations. *Young*. https://doi.org/10.1177/11033088221085137

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, *10*(2), 227–237. https://doi.org/10.1177/1745691614568352

Jones, E. A., Mitra, A. K., & Bhuiyan, A. R. (2021). Impact of COVID-19 on mental health in adolescents: A systematic review. *International Journal of Environmental Research and Public Health*, *18*(5), 2470. https://doi.org/10.3390/ijerph18052470

Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., Lee, S., & Ustun, T. B. (2007). Age of onset of mental disorders: A review of recent literature. *Current Opinion in Psychiatry*, *20*(4), 359. https://doi.org/10.1097/YCO.0b013e32816ebc8c

Klomek, A. B., Sourander, A., & Elonheimo, H. (2015). Bullying by peers in childhood and effects on psychopathology, suicidality, and criminality in adulthood. *The Lancet Psychiatry*, *2*(10), 930–941. https://doi.org/10.1016/S2215-0366(15)00223-0

Laursen, B., & Hartl, A. C. (2013). Understanding loneliness during adolescence: Developmental changes that increase the risk of perceived social isolation. *Journal of Adolescence*, *36*(6), 1261–1268. https://doi.org/10.1016/j.adolescence.2013.06.003

Leemann, L., Martelin, T., Koskinen, S., Härkänen, T., & Isola, A. M. (2022). Development and psychometric evaluation of the experiences of social inclusion scale. *Journal of Human Development and Capabilities*, *23*(3), 400–424. https://doi.org/10.1080/19452829.2021.1985440

Little, T. D., & Rhemtulla, M. (2013). Planned missing data designs for developmental researchers. *Child Development Perspectives*, *7*(4), 199–204. https://doi.org/10.1111/cdep.12043

Liu, R. T. (2015). A developmentally informed perspective on the relation between stress and psychopathology: When the problem with stress is that there is not enough. *Journal of Abnormal Psychology*, *124*(1), 80. https://doi.org/10.1037/abn0000043

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 & Adolescent Psychiatry*, *59*(11), 1218–1239. https://doi.org/10.1016/j.jaac.2020.05.009

Marchini, S., Zaurino, E., Bouziotis, J., Brondino, N., Delvenne, V., & Delhaye, M. (2021). Study of resilience and loneliness in youth (18–25 years old) during the COVID-19 pandemic lockdown measures. *Journal of Community Psychology*, *49*(2), 468–480. https://doi.org/10.1002/jcop.22473

McArdle, J. J., & Hamagami, F. (2001). Latent difference score structural models for linear dynamic analyses with incomplete longitudinal data. In L. M. Collins & A. G. Sayer (Eds.), *New methods for the analysis of change* (pp. 139–175). American Psychological Association. https://doi.org/10.1037/10409-005

Morales, S., Zeytinoglu, S., Buzzell, G. A., Valadez, E. A., Troller-Renfree, S. V., Bowers, M. E., & Fox, N. A. (2021). Neurocognitive profiles in adolescence predict subsequent anxiety trajectories during the COVID-19 Pandemic. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, *7*(2), 192–200. https://doi.org/10.1016/j.bpsc.2021.06.004

Morales, S., Zeytinoglu, S., Lorenzo, N. E., Chronis-Tuscano, A., Degnan, K. A., Almas, A. N., & Fox, N. A. (2022). Which anxious adolescents were most affected by the COVID-19 pandemic? *Clinical Psychological Science*. https://doi.org/10.1177/21677026211059524

National Advisory Board on Research Ethics. (2009). Ethical principles of research in the humanities and social and behavioural sciences and proposals for ethical review. TENK: Helsinki https://www.tenk.fi/sites/tenk.fi/files/ethicalprinciples.pdf

National Student Clearinghouse Research Center. (2021). *High school benchmarks 2021: National college progression rates*. https://nscresearchcenter.org/wp-content/uploads/2021_HSBenchmarksReport.pdf

Panchal, U., Salazar de Pablo, G., Franco, M., Moreno, C., Parellada, M., Arango, C., & Fusar-Poli, P. (2021). The impact of COVID-19 lockdown on child and adolescent mental health: Systematic review. *European Child & Adolescent Psychiatry*, Aug 18, 1–27. https://doi.org/10.1007/s00787-021-01856-w

Pearlin, L. I. (2010). The life course and the stress process: Some conceptual comparisons. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *65*(2), 207–215. https://doi.org/10.1093/geronb/gbp106

Racine, N., McArthur, B. A., Cooke, J. E., Eirich, R., Zhu, J., & Madigan, S. (2021). Global prevalence of depressive and anxiety symptoms in children and adolescents during COVID-19: A meta-analysis. *JAMA Pediatrics*, *175*(11), 1142–1150. https://doi.org/10.1001/jamapediatrics.2021.2482

Repo, J., Herkama, S., & Salmivalli, C. (2022). Bullying interrupted. Rates of victimization and previously victimized students' experiences of remote schooling during the COVID-19 pandemic. in review.

Rettew, D. C., McGinnis, E. W., Copeland, W., Nardone, H. Y., Bai, Y., Rettew, J., Devadenam, V., & Hudziak, J. J. (2021). Personality trait predictors of adjustment during the COVID pandemic among college students. *PLOS ONE*, *16*(3), e0248895. https://doi.org/10.1371/journal.pone.0248895

Rutter, M. (2012). Resilience as a dynamic concept. *Development and Psychopathology*, *24*(2), 335–344. https://doi.org/10.1017/S0954579412000028

Santini, Z. I., Pisinger, V. S., Nielsen, L., Madsen, K. R., Nelausen, M. K., Koyanagi, A., & Meilstrup, C. (2021). Social disconnectedness, loneliness, and mental health among adolescents in Danish high schools: A nationwide cross-sectional study. *Frontiers in Behavioral Neuroscience*, *15*, 632906. https://doi.org/10.3389/fnbeh.2021.632906

Schulenberg, J. E., Sameroff, A. J., & Cicchetti, D. (2004). The transition to adulthood as a critical juncture in the course of psychopathology and mental health. *Development and Psychopathology*, *16*(4), 799–806. https://doi.org/10.1017/S0954579404040015

Shanahan, L., Steinhoff, A., Bechtiger, L., Murray, A. L., Nivette, A., Hepp, U., Ribeaud, D., & Eisner, M. (2022). Emotional distress in young adults during the COVID-19 pandemic: Evidence of risk and resilience from a longitudinal cohort study. *Psychological Medicine*, *52*(5), 824–833. https://doi.org/10.1017/S003329172000241X

Silva, A. N. D., Guedes, C. R., Santos-Pinto, C. D. B., Miranda, E. S., Ferreira, L. M., & Vettore, M. V. (2021). Demographics, socioeconomic status, social distancing, psychosocial factors and psychological well-being among undergraduate students during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, *18*(14), 7215. https://doi.org/10.3390/ijerph18147215

Stapinski, L. A., Bowes, L., Wolke, D., Pearson, R. M., Mahedy, L., Button, K. S., Araya, R., & Araya, R. (2014). Peer victimization during adolescence and risk for anxiety disorders in adulthood: A prospective cohort study. *Depression and Anxiety*, *31*(7), 574–582. https://doi.org/10.1002/da.22270

Stroud, C. B. (2020). The stress sensitization model. In K. Harkness & E. P. Hayden (Eds.), *The Oxford handbook of stress and mental health* (Oxford University Press) 348–370 . https://doi.org/10.1093/oxfordhb/9780190681777.013.16

Thomas, D. R., & Zumbo, B. D. (2012). Difference scores from the point of view of reliability and repeated-measures ANOVA: In defense of difference scores for data analysis. *Educational and Psychological Measurement*, *72*(1), 37–43. https://doi.org/10.1177/0013164411409929

Ungar, M. (2021). Mapping the Resilience Field: A Systemic Approach. In Clark, J. N., Ungar, M. (Eds.),*Resilience, Adaptive Peacebuilding and Transitional Justice: How Societies Recover after Collective Violence* (Cambridge University Press), 23. https://doi.org/10.1017/9781108919500

Ungar, M., Ghazinour, M., & Richter, J. (2013). Annual research review: What is resilience within the social ecology of human development? *Journal of Child Psychology and Psychiatry*, *54*(4), 348–366. https://doi.org/10.1111/jcpp.12025

Vaillancourt, T., Brittain, H., Krygsman, A., Davis, A., Farrell, A., Desmarais, R., Sanderson, C., Karasz, S., Morgan, R., Ritchie, A., & Sanderson, C. (2021). Assessing the quality of research examining change in children's mental health in the context of COVID-19. *University of Ottawa Journal of Medicine*, *11*(1). https://doi.org/10.18192/uojm.v11i1.5950

Vanhalst, J., Goossens, L., Luyckx, K., Scholte, R. H., & Engels, R. C. (2013). The development of loneliness from mid-to late adolescence: Trajectory classes, personality traits, and psychosocial functioning. *Journal of Adolescence*, *36*(6), 1305–1312. https://doi.org/10.1016/j.adolescence.2012.04.002

Wijngaards, I., de Zilwa, S. C. S., & Burger, M. J. (2020). Extraversion moderates the relationship between the stringency of COVID-19 protective measures and depressive symptoms. *Frontiers in Psychology*, *11*, 568907. https://doi.org/10.3389/fpsyg.2020.568907

Yao, H., Chen, J. H., & Xu, Y. F. (2020). Patients with mental health disorders in the COVID-19 epidemic. *The Lancet Psychiatry*, *7*(4), e21. https://doi.org/10.1016/S2215-0366(20)30090-0

Yu, Y., Yu, Y., & Hu, J. (2021). COVID-19 among Chinese high school graduates: Psychological distress, growth, meaning in life and resilience. *Journal of Health Psychology*, *27*(5), 1057–1069. https://doi.org/10.1177/2F1359105321990819