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Impact of childhood maltreatment on adult mental health trajectories during the COVID-19 pandemic

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Highlights

- Childhood maltreatment increases odds of severe mental health vulnerability (OR 4.66).
- Exposed individuals faced higher baseline and worsening mental health burdens.
- Early adversity highlights need for targeted support during health crises.

Abstract

The relationship between changes in mental health during the severe and sustained stresses of the COVID-19 pandemic and exposure to childhood maltreatment is not well-characterized despite the recognition of early life adversity as a pervasive risk factor for

adverse mental health outcomes throughout the lifespan. To determine whether a history of childhood maltreatment was associated with vulnerable mental health trajectories during the pandemic, we analyzed data from the CovSocial study, a longitudinal online study that assessed 3,522 adult respondents from Berlin, Germany at seven time points during the pandemic, including two lockdowns. Exposure to childhood maltreatment was assessed with the Childhood Trauma Questionnaire. The main outcome was membership in one of four latent mental health profile classes identified in a previous study from dynamic changes of resilience-vulnerability factor scores that captured variance in longitudinal measures of vulnerability (depression, anxiety, stress, burdens) and resilience (coping, optimism, social support). Exposure to childhood maltreatment significantly increased the odds of belonging to the most vulnerable compared to the most resilient latent class (OR, 4.66 [95% CI, 3.57, 5.98]). On average, individuals with exposure had a greater mental health burden at baseline compared to non-exposed individuals ($p < 0.001$, Cohen's $d = 0.24$) and increasing mental health problems during the second sustained lockdown ($p = 0.003$, Cohen's $d = 0.18$). Our results suggest that individuals who experienced childhood maltreatment are at increased risk for mental health problems during the pandemic, emphasizing the need for detection of cases and targeted interventions during future crises.

Introduction

The COVID-19 pandemic represented a severe and sustained stressor of global scale that required substantial adjustment and coping in the population (Gruber et al., 2021, Holman et al., 2020, Pierce et al., 2020, Silveira et al., 2022b). Recent longitudinal studies found that mental health responses during the pandemic were heterogeneous among subgroups of individuals (Carr et al., 2022; Fernández et al., 2022; Gambin et al., 2021; Godara et al., 2023; Laham et al., 2021; Reis et al., 2023; Rosa et al., 2022; Shevlin et al., 2021). There is growing interest in identifying preexisting predictors for pandemic-related mental health problems for post-pandemic mental care and future crisis interventions. Initial findings indicate that factors like female gender, lower income, younger age, preexisting mental health problems, and low emotional support increase the risk for more vulnerable mental health trajectories (Godara et al., 2023, Reis et al., 2023). The relationship between changes in mental health during the pandemic and exposure to childhood maltreatment is not well-characterized despite the recognition of early life adversity as a pervasive risk factor for adverse physical and mental health outcomes throughout the lifespan (Anda et al., 2005, Brown et al., 2009, Felitti et al., 1998, Hughes et al., 2017, McLaughlin et al., 2012, Norman et al., 2012, Pirkola et al., 2005, Raposo et al., 2014, Schaefer et al., 2022, Shonkoff et al., 2012).

Exposure to childhood maltreatment in the form of abuse or neglect is alarmingly common. A recent *meta*-analysis of 206 studies with 546,458 adult participants across 22 countries estimated the global prevalence of adverse childhood experiences, including childhood maltreatment, at about 60 % (Madigan et al., 2023). Among the participants who reported adversity in childhood, 22.4 % reported one event category, 13 % reported two, 8.7 % reported three and 16 % reported four or more event categories. The study also showed a higher prevalence of most severe maltreatment burden in populations with a history of mental illness and substance abuse, as well as among individuals from low-income households and minoritized groups. In the German population, the prevalence is lower yet no less concerning. One in three individuals reported exposure to at least one type of maltreatment in childhood (Klinger-König et al., 2023, Witt et al., 2017), with a slightly lower prevalence for younger adults (Kasinger et al., 2024) according to recent studies that used the Childhood Trauma Questionnaire (CTQ) (Bernstein et al., 2003, Klinitzke et al., 2012) or its short version, the Childhood Trauma Screener (CTS) (Grabe et al., 2012).

Adversity during sensitive periods of development can induce profound and persistent changes in the developing nervous system and regulatory systems, including endocrine, autonomic, and immune alterations (Heim et al., 2019, Heim and Binder, 2012, Heim and Nemeroff, 2001, Smith and Pollak, 2020). These alterations can persist into adulthood, interfering with an individual's ability to successfully adapt to or cope with subsequently encountered stressful challenges. There exists a dose-response relationship with increasing rates of unfavorable outcomes as the number of reported maltreatment categories increases. Results in the German National Cohort (NAKO), for example, suggest that greater maltreatment burden is linked to more severe symptoms of depression, anxiety, and perceived stress later in life (Klinger-König et al., 2023).

Few studies have examined associations of childhood maltreatment with pandemic-related mental health. Two online studies in the early phase of the pandemic found that adolescents and young adults in the United States who reported childhood maltreatment initially showed higher levels of depressive symptoms and perceived stress (Doom et al., 2021, Gotlib et al., 2020). A recent longitudinal study with older adults in the UK found similar effects but limited analyses to psychological distress collapsed across multiple assessment time points (Taylor et al., 2022). To our knowledge, no longitudinal studies have yet investigated the link between dynamic mental health changes throughout the pandemic and childhood maltreatment in a large community sample of a wide age range.

The CovSocial project is a large longitudinal cohort study of a community sample in Berlin, Germany that examined mental health trajectories during the pandemic using resilience (coping, optimism, social support) and vulnerability (depression, anxiety, stress, burdens) measures (Singer et al., 2021). As illustrated in Fig. 1, this study covered

the period from January 2020 to June 2021, encompassing one shorter state-mandated lockdown in March/April 2020, and one lockdown with severe social restrictions lasting several months from November 2020 to March/April 2021. The researchers identified a resilience-vulnerability factor (Silveira et al., 2022a) and analyzed individual differences in its trajectory over time (Godara et al., 2023). The trajectories were characterized by an immediate decline in mental health in response to the first lockdown ('acute lockdown effect') and sustained worsening of mental health throughout each month of the second lockdown in Germany ('pandemic fatigue effect') (Godara et al., 2023, 2022).

Interestingly, latent class analysis revealed four distinct trajectory profiles, reflecting the speed of mental health recovery after the first lockdown and the severity of pandemic fatigue effects, which ranged from 'most vulnerable', 'more vulnerable', 'more resilient', to 'most resilient' (Godara et al., 2023).

The present study investigated whether exposure to childhood maltreatment is a risk factor for more adverse mental health trajectories during the COVID-19 pandemic using data from the CovSocial study. Specifically, we tested whether maltreatment status predicted membership in more vulnerable latent mental health profile classes as identified by Godara et al. (2023). Additionally, we tested links with acute lockdown and pandemic fatigue effects to better characterize the relationship between maltreatment and pandemic-related mental health. Based on previous work and our With:Resilience Model (Godara et al., 2022), exposure to childhood maltreatment was hypothesized to be associated with higher odds of exhibiting more vulnerable mental health profiles and with greater decline in mental health in response to the first lockdown (acute lockdown effect), reduced recovery after the first lockdown, and greater worsening as the pandemic continued (pandemic fatigue effect). Finally, this study offers critical data on the prevalence of different types of childhood maltreatment in Berlin, Germany, providing a resource for future intervention strategies.

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Section snippets

Materials and methods

The current investigation used data from the CovSocial study on the longitudinal mental health effects of the COVID-19 pandemic in a community sample of adult residents in

Berlin, Germany, incorporating both retrospective and prospective assessments. The study was approved by the Ethics Committee of Charité – Universitätsmedizin Berlin (#EA4/172/20 and #EA1/345/20) and was conducted in accordance with the Declaration of Helsinki. The main study hypothesis—that maltreatment would be linked to ...

Results

Of the 3,522 participants assessed at baseline (65% females; mean age = 44.0 ± 12.7 years), 35.3% reported exposure to at least one type of maltreatment defined as exposure above the moderate-to-severe cutoff in the CTQ, 25.4% reported 1–2 types, and 10.9% reported 3 or more types. Sociodemographic covariates differed significantly between individuals with and without exposure to childhood maltreatment (Table 1). Individuals with exposure to childhood maltreatment were more likely to be ...

Discussion

This study examined a community sample from Berlin, Germany, assessed across seven time points during the COVID-19 pandemic, incorporating both retrospective and prospective assessments. It found that individuals with a history of childhood maltreatment were more likely to exhibit the most vulnerable mental health trajectories throughout the pandemic. This suggests that individuals who experienced childhood maltreatment may have an increased susceptibility to heightened psychological distress ...

Uncited reference

Silveira et al. (2023a). ...

CRedit authorship contribution statement

Johannes Julius Mohn: Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data curation. **Malvika Godara:** Writing – review & editing, Project administration, Methodology, Formal analysis, Data curation, Conceptualization. **Sarita Silveira:** Writing – review & editing, Project administration, Methodology, Data curation, Conceptualization. **Hannah Matthaeus:** Writing – review & editing, Project administration, Data curation, ...

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. ...

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References (50)

E.D. Beatriz *et al.*

[Urbanicity matters in self-reported child maltreatment prevalence: Findings from a nationally representative study](#)

Child Abuse Negl (2018)

D.P. Bernstein *et al.*

[Development and validation of a brief screening version of the childhood trauma questionnaire](#)

Child Abuse Negl (2003)

D.W. Brown *et al.*

[Adverse childhood experiences and the risk of premature mortality](#)

Am J Prev Med (2009)

V.J. Felitti *et al.*

[Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences \(ACE\) study](#)

Am J Prev Med (1998)

R. Gilbert *et al.*

Burden and consequences of child maltreatment in high-income countries

The Lancet (2009)

C. Heim *et al.*

Current research trends in early life stress and depression: Review of human studies on sensitive periods, gene–environment interactions, and epigenetics

Exp Neurol (2012)

C. Heim *et al.*

Translating basic research knowledge on the biological embedding of early-life stress into novel approaches for the developmental programming of lifelong health

Psychoneuroendocrinology (2019)

C. Heim *et al.*

The role of childhood trauma in the neurobiology of mood and anxiety disorders: Preclinical and clinical studies

Biol Psychiatry (2001)

K. Hughes *et al.*

The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis

Lancet Public Health (2017)

M. Pierce *et al.*

Mental health before and during the COVID-19 pandemic: a longitudinal probability sample survey of the UK population

Lancet Psychiatry (2020)



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