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Psychological Trauma: Theory, Research, Practice, and Policy

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Parent-Reported Posttraumatic Stress Reactions in Children and Adolescents: Findings From the Mental Health of Parents and Children in Ukraine Study

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Background: Despite the long-standing ongoing war in Ukraine, information regarding war-related negative mental health outcomes in children is limited. A nationwide sample of parents in Ukraine was surveyed to assess posttraumatic stress disorder (PTSD) symptoms in their children and to identify risk factors associated with child PTSD status. **Method:** A nationwide opportunistic sample of 1,238 parents reported on a single randomly chosen child within their household as part of *The Mental Health of Parents and Children in Ukraine Study*. Data were collected approximately 6 months after the war escalation in February 2022. The prevalence of PTSD was estimated using the parent-reported Child and Adolescent Trauma Screen (CATS). **Results:** Based on parental reports, 17.5% of preschoolers and 12.6% of school-age children met Diagnostic and Statistical Manual of Mental Disorders (5th ed.) criteria for PTSD. Delay in milestone development (AOR = 2.38, 95% confidence interval [CI] [1.38–4.08]), having a parent affiliated with the emergency services or army (AOR = 2.13, [1.28–3.53]), parental PTSD/complex PTSD status (AOR = 1.88, [1.22–2.89]), and mean changes in parental anxiety (AOR = 1.98, [1.44–2.72]) were among the strongest predictors of increased risk of pediatric PTSD. **Conclusion:** Russia's war escalation in Ukraine resulted in an increased estimated prevalence of war-related PTSD in children of various ages. Urgent efforts to increase the capacity of national pediatric mental health services are critically needed to mitigate these challenges in an environment of limited financial and human resources.

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Karatzias, Philip Hyland, Mark Shevlin, and Igor Martsenkovsky contributed equally to formal analysis. Dmytro Martsenkovskiy, Thanos Karatzias, Philip Hyland, and Mark Shevlin contributed equally to methodology and data curation. Thanos Karatzias, Philip Hyland, Mark Shevlin, Menachem Ben-Ezra, Eoin McElroy, Enya Redican, Marylene Cloitre, Grace W. K. Ho, and Boris Lorberg contributed equally to writing—review and editing.

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Clinical Impact Statement

Based on parental reports, 54% of children living in Ukraine about 6 months after Russia's full-scale invasion had been exposed to a war-related stressor and 14% met criteria for a provisional Diagnostic and Statistical Manual of Mental Disorders (5th ed.) posttraumatic stress disorder (PTSD) diagnosis. Children with a history of developmental delay, emotional or behavioral problems, who were internally displaced, who have a parent affiliated with critical services and the army, and whose parents are experiencing traumatic stress, anxiety, and depression-related problems due to the war are at highest risk of PTSD.

Keywords: war, children, adolescents, posttraumatic stress disorder, mental health

Russia's full-scale invasion of Ukraine in February 2022 has led to the destruction of civil infrastructure, civilian displacement, and enormous human suffering. After the first 6 months of active fighting, approximately 14 million Ukrainians were displaced, among them 6.9 million had to leave the country, mostly children and women. Over 40% of schools were destroyed, and at least 972 children died or were severely injured due to war (United Nations Children's Fund, 2022). The ongoing war was accompanied by massive bombardments of civil infrastructure and medical facilities, including those located at a distance from the frontline (Goto et al., 2023; Haque et al., 2022), which along with the preexisting biomedical focus of treatment and low accessibility of mental health care, exacerbated by the forced evacuation of pediatric mental health specialists, reduced the already limited human resources, and accessibility of evidence-based mental health care both for children and adults (Martsenkovskiy et al., 2022; Roberts et al., 2019).

Just as in the adult population, posttraumatic stress disorder (PTSD) and depression are the most common mental disorders in war-affected children (Catani, 2018). Recent studies conducted by our research team after February 2022 reported both high levels of war-related exposure and posttraumatic stress reactions in parents of children living in Ukraine (Karatzias et al., 2023), and an increase in their internalizing and externalizing symptoms (Hyland et al., 2023). Considering such results in parents, similar results would be expected in the child population.

While exposure to traumatic events is the strongest risk factor for the onset of PTSD, others include various cultural, individual, and family factors (Catani, 2018). In the face of adversity, parents can serve as the buffer between their children and stress, hence moderating its effects on the child. Recent studies in war-exposed populations found significant changes in parenting practices after war exposure, particularly a decrease in warmth and an increase in harshness, which mediate the association between war exposure and poorer child adjustment, including posttraumatic stress symptoms, anxiety, and behavioral problems (Eltanamly et al., 2021). These, however, require careful interpretation and further confirmation in longitudinal studies as most of the data was derived from cross-sectional studies. In contrast, a meta-analysis in children with mixed types of trauma reported a less prominent effect size of parenting practice on child posttraumatic symptoms in longitudinal studies compared to cross-sectional (Williamson et al., 2017). These, however, should not be generalized to war-affected children, considering the difference in character and intensity of traumatic exposure, its duration, destruction of family structure and routine, and possibilities of access to social support. Changes in parenting practices and a decrease in the ability to provide social support to

children in war-affected populations are also significantly related to mental health impairment in their caregivers (Slone & Mann, 2016). While there is an abundance of literature on the relationship between parent and child mental health during war, the majority of evidence comes from studies of the Israeli–Palestinian conflict and Afghanistan (Eltanamly et al., 2021). This area of inquiry would benefit from further investigation in diverse cultural contexts.

The aims of this study were to estimate the prevalence of probable PTSD in both preschoolers (3–6 years old) and school-age children (7–17 years old) following Russia's invasion on February 24, 2022, and to identify key sociodemographic, war-related, and parent-related risk factors associated with elevated risk for pediatric PTSD.

Method

Participants and Procedures

This study is based on data collected as part of *The Mental Health of Parents and Children in Ukraine Study*, which aimed to understand the mental health and day-to-day life consequences of Russia's war on parents and their children in Ukraine. Respondents were invited to participate in the study if they (a) were aged 18 years or older, (b) were living in Ukraine, (c) had at least one child under the age of 18 years, and (d) could complete the survey in Ukrainian. The participants were recruited through email, in-app notification, or text messages by TGM Research from July 15 to September 5, 2022. TGM research maintains nationally representative survey panels in 130 countries, including Ukraine. Given the ongoing conflict and mass displacement of people in Ukraine, the collection of a nationally representative sample was not possible, therefore we used opportunistic sampling methods to recruit participants. However, we took steps to recruit participants of different sexes and ages, and living in different regions of Ukraine. Consenting participants completed the survey online and were remunerated for their time by the survey company. A total of 1,238 parents provided data on both themselves and one target child within the household (selected using the next birthday method). Sample characteristics are presented in Table 1. Ethical approval for the study was provided by State Institute "Institute of Psychiatry, Forensic Psychiatric Examination and Drug Monitoring of Ministry of Health of Ukraine", Kyiv, Ukraine.

Measures

PTSD

The presence of posttraumatic stress symptoms and classification of provisional PTSD status for the child was measured using the

Table 1
Sociodemographic Characteristics of the Sample (N = 1,238)

Variable	%	<i>n</i>
Child gender		
Female	49.20	609
Male	50.80	629
Child with delayed milestone development	11.3	140
Child with emotional or behavioral problems	12.76	158
Living location in Ukraine now		
Western Ukraine	24.72	306
Northern Ukraine	27.79	344
Central Ukraine	19.06	236
Eastern Ukraine	5.01	62
Southern Ukraine	23.42	290
Residential area		
Urban area	73.51	910
Rural area	26.49	328
Property type		
Apartment/house	96.37	1,193
Other (including emergency accommodation)	3.63	45
Forced to move to another part of Ukraine	28.43	352
Forced to move to another country	8.48	105
Marital status of parent		
Married or living with partner	78.43	971
Other	21.57	267
Highest education level		
Undergraduate degree or above	61.79	765
No degree	38.21	473
Employment status		
Full-time employed	38.45	476
Other	61.55	762
	<i>M</i>	<i>SD</i>
Child age	9.96	3.92
Number of children	1.50	0.69
Parent war-related stressors	9.02	4.31
Parent PTSD	10.48	4.79
Parent CPTSD	17.44	8.73
Parent change in depression	12.1	7.67
Parent change in anxiety	11.4	6.86
Study child exposure to war	53.80	666

Note. PTSD = posttraumatic stress disorder; CPTSD = complex posttraumatic stress disorder.

Child and Adolescent Trauma Screen (CATS)—Caregiver report form (Sachser et al., 2017). The CATS is a screening measure for posttraumatic stress symptoms based on self- or caregiver-report for children and adolescents aged 7–17 years old and caregiver-report for children aged 3–6 years old. The measure consists of 16 questions for 3–6-year-olds and 20 questions for 7–17-year-olds based on Diagnostic and Statistical Manual of Mental Disorders (5th ed.) (DSM-5) B, C, D, and E criteria. There are four (3–6-year-olds) and five (7–17-year-olds) questions assessing symptom interference with the psychosocial functioning of the child. Before completing the CATS, all participants were asked if their child had been exposed, directly or indirectly, to any event during the war that he or she found extremely scary. Caregivers were then asked to rate the presence of the symptoms during the past month on a 4-point Likert scale (never, once in a while, half the time, and almost always). Higher scores reflect higher symptom levels, and the internal consistency of the CATS scores was high for both 3–6 years old ($\alpha = .92$) and 7–17 years ($\alpha = .93$).

Classification of children with “provisional” PTSD in the study was determined based on: (a) meeting the required DSM-5 criteria

which include the presence of traumatic exposure, having at least one or more symptoms in the reexperiencing cluster and the avoidance cluster, two or more symptoms in the negative alterations in cognition and mood and hyperarousal clusters for children older than 6 years (or one or more symptoms from negative alterations/hyperreactivity clusters for those younger than 6 years old), and presence of functional impairment and (b) scoring over a cutoff of ≥ 15 for children 3–6 years old and of ≥ 21 for children and adolescents 7–17 years old.

Although the CATS is based on the DSM-5 criteria required for pediatric PTSD, the diagnosis should not be based solely on its results and requires a clinical interview for confirmation. Nevertheless, children in this study who meet the DSM-5 criteria and who score above the clinical cutoff on the CATS scale can be considered at high risk of PTSD and can be defined as having “provisional” PTSD.

Parental Changes in Mental Health

All parents completed modified versions of the generalized anxiety disorder 7-item scale (GAD-7; Spitzer et al., 2006), the patient health questionnaire-9 (PHQ-9; Kroenke et al., 2001), the three-item loneliness scale (TILS; Hughes et al., 2004), and the World Health Organization’s 10-item alcohol use disorders identification test (AUDIT-10; Babor et al., 1992) to capture changes in the symptoms of anxiety, depression, loneliness, and problematic alcohol, respectively. The wording of the instructions was altered to ask respondents to rate how much more frequently they had experienced each symptom since the war on Ukraine began on February 24, 2022. The response options were changed to analyze the magnitude of change based on Likert scale response ranging from “0”—*no change or less* to “4”—*a great deal more often* (Hyland et al., 2023). Higher scores indicate a greater increase in symptoms since the full-scale invasion. Internal consistency for the GAD-7 ($\alpha = .93$), PHQ-9 ($\alpha = .90$), TILS ($\alpha = .86$), and AUDIT-10 ($\alpha = .92$) in this sample were high.

Parental Posttraumatic Stress

Parents completed the international trauma questionnaire (ITQ; Cloitre et al., 2018) which is a self-report measure of ICD-11 PTSD and complex PTSD (CPTSD). Participants were instructed to complete the ITQ thinking about their most distressing war-related stressors. There are 12 items measuring PTSD/CPTSD symptoms using a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*), and a symptom is considered present based on a response of > 2 (*moderately*). Provisional diagnostic status for either PTSD or CPTSD includes exposure to a war-related stressor, one symptom from each PTSD cluster of reexperiencing in the here and now, avoidance, sense of current threat, and presence of functional impairment associated with these symptoms. The internal consistency of the PTSD ($\alpha = .83$) scale scores in this sample was satisfactory.

Analytic Plan

Descriptive statistics were used to report the severity of posttraumatic stress symptoms and the number of spheres of psychosocial functioning impaired in preschoolers and school-age children. An independent samples *t* test was used to determine the difference in

the mean number of spheres of psychosocial functioning affected between the children with provisional PTSD and without for both age groups.

Next, in a series of univariate logistic regressions, provisional PTSD status was regressed on the following predictor variables: child age (range = 3–17), sex (0 = *female*; 1 = *male*), milestones development delay (e.g., history of delay in speech development or motor skills in child; 0 = *no*, 1 = *yes*), parent-reported history of child emotional and behavioral disorders (0 = *no*, 1 = *yes*), living in the west of Ukraine before war onset (0 = *no*, 1 = *yes*), forced displacement to another part of Ukraine (0 = *no*, 1 = *yes*), forced displacement abroad (0 = *no*, 1 = *yes*), number of children in the household (range = 1–5), having a parent affiliated with emergency services or army (0 = *no*, 1 = *yes*), parent married or living with a partner (0 = *no*, 1 = *yes*), parent having education of a university undergraduate degree or higher (0 = *no*, 1 = *yes*), parent unemployed due to war (0 = *no*, 1 = *yes*), parent provisional PTSD status (0 = *no*, 1 = *yes*), and parental mean changes in depression, anxiety, alcohol consumption, and loneliness. Unadjusted associations are reported as odds ratio (*OR*). Finally, provisional PTSD status was simultaneously regressed on all predictor variables to estimate the adjusted, or unique, associations. These are reported as adjusted OR (*AOR*).

Results

Among children aged 3–6 years ($n = 302$), 49.7% ($n = 150$) were directly or indirectly exposed to war-related traumatic events based on caregivers' reports. The mean CATS total score was 10.45 ($SD = 7.87$; $Mdn = 8.00$) with a range from 0 to 42. In total, 17.5% ($n = 53$) of the sample met DSM-5 criteria for PTSD. The mean number of psychosocial spheres affected was 2.05 ($SD =$

1.41; $Mdn = 2.00$, range = 0–4). Compared to children who did not meet the criteria for PTSD ($M = 1.80$, $SD = 1.37$), children with provisional PTSD ($M = 3.23$, $SD = 0.95$) reported a significantly higher number of spheres of psychosocial functioning impairment, $t(300) = 7.19$, $p = .001$, and the effect size was “large” (Cohen's $d = 1.21$).

Among children aged 7–17 years ($n = 936$), 55.1% ($n = 516$) were directly or indirectly exposed to war-related traumatic events based on caregivers' reports. The mean CATS total score was 12.81 ($SD = 9.91$; $Mdn = 11.00$) with a range from 0 to 60. Overall, 12.6% ($n = 118$) met DSM-5 criteria for PTSD. The mean number of psychosocial spheres affected was 2.66 ($SD = 1.59$, $Mdn = 3.00$, range = 0–5). There was a significant difference in the mean number of spheres of psychosocial functioning impaired, $t(934) = 12.49$, $p = .001$ between those with provisional PTSD ($M = 4.30$, $SD = 0.92$) and those without ($M = 2.42$, $SD = 1.65$), and the effect size was “large” (Cohen's $d = 1.40$).

Of all children ($N = 1,238$), 53.8% ($n = 666$) were directly or indirectly exposed to a war-related stressor and 13.8% ($n = 171$) met DSM-5 criteria for PTSD. The unadjusted and adjusted ORs for all predictor variables of provisional child PTSD status are reported in Table 2. In the unadjusted analyses, 11 of the 17 predictor variables were significantly associated with child PTSD. In the adjusted analysis, $\chi^2(17) = 267.06$, $p < .001$, six variables were significantly associated with child PTSD: history of previous delay of child milestone development ($AOR = 2.38$, 95% confidence interval [CI] [1.38, 4.08]), forced displacement within Ukraine ($AOR = 1.67$, [1.1, 2.56]), parental affiliation with emergency service or army ($AOR = 2.13$, [1.28, 3.53]), parental PTSD status ($AOR = 1.88$, [1.22, 2.89]), parental changes in anxiety ($AOR = 1.98$, [1.44, 2.72]), and parental changes in depression ($AOR = 1.80$, [1.24, 2.63]).

Table 2

Association of Sociodemographic and Parental Mental Health Status With Probable Pediatric PTSD Based on Logistic Regression Among Children and Adolescents Located in Ukraine During the War ($N = 1,238$)

Variables	Unadjusted analysis			Adjusted analysis		
	OR	95% CI		OR	95% CI	
		Lower	Upper		Lower	Upper
Sociodemographic characteristics						
Child age	0.99	0.95	1.03	1.02	0.97	1.07
Female gender	0.89	0.64	1.23	1.04	0.71	1.53
Milestone development delay	3.35***	2.24	5.03	2.38**	1.38	4.08
Past history of emotional and behavioral problems	2.78***	1.87	4.13	1.76*	1.04	2.97
Living outside of west of Ukraine before war	1.76*	1.11	2.80	1.40	0.79	2.48
Forced to move to another part of Ukraine	2.42***	1.74	3.37	1.67*	1.1	2.56
Forced to move to another country	1.98*	1.22	3.23	1.13	0.62	2.19
Number of children in household	1.02	0.81	1.29	1.13	0.86	1.50
Parental sociodemographic characteristics						
Having parent affiliated with emergency services or army	2.29***	1.52	3.45	2.13**	1.28	3.53
Parent married or living with a partner	0.85	0.58	1.24	0.95	0.60	1.51
Education below a degree level	0.90	0.64	1.26	0.75	0.50	1.12
Parent unemployed due to war	1.51	1.04	2.18*	1.43	0.93	2.21
Parental mental health changes						
Parental probable PTSD or complex PTSD	4.88***	3.42	6.98	1.88**	1.22	2.89
Parental mean changes in anxiety	3.49***	2.86	4.27	1.98***	1.44	2.72
Parental mean changes in depression	3.94***	3.15	4.92	1.80**	1.24	2.63
Parental mean changes in alcohol consumption	1.60***	1.23	2.08	0.928	0.66	1.29
Parental mean changes in loneliness	1.86***	1.60	2.15	1.01	0.83	1.23

Note. PTSD = posttraumatic stress disorder.

* $p < .05$. ** $p < .005$. *** $p < .001$.

Discussion

The primary aim of this study was to estimate the prevalence of parent-reported war exposure and provisional PTSD among children living across Ukraine approximately 6 months after the onset of the full-scale invasion of Russian troops. In addition to being one of the first studies to report on childhood PTSD in the context of the Russian war on Ukraine, this study also represents one of the few studies assessing the prevalence of pediatric PTSD and its association with parental mental health during an active phase of war, and the prevalence of war-related PTSD in preschool-aged children.

We found that about half of all children were directly or indirectly exposed to war-related events, based on parental reports. When their parents were asked about their own exposure to war-related stressors, 100% reported being exposed to at least one such event (Karatzias et al., 2023). It is important to note that parents completed a multi-item assessment of exposure to stressful events during the war, whereas a single item was used to assess if their child had experienced any major stressor related to the war. While this methodological effect should be borne in mind, this finding suggests that parents may have been able to limit their children's exposure to war-related stressors to some extent. Nonetheless, it is striking that more than half of the children in our sample have been reported to have experienced an extremely stressful event because of this war.

Provisional PTSD was reported in 17.5% of preschool-age children and 12.6% of school-age children. In total, 13.8% of children met criteria for provisional PTSD. The prevalence of provisional PTSD in our study can be contextualized in relation to two recent findings. In a meta-analysis of refugee and asylum-seeking children and adolescents, Kien et al. (2019) reported an interquartile range of PTSD from 19.0% to 52.7%, which indicates that the rate of provisional PTSD observed in our sample was lower compared to other samples of young people exposed to war or social upheaval. This could be a result of the study methodology, particularly the fact that the presence of the symptoms was estimated based solely on parental reports that commonly may not recognize the presence of symptoms in their children (Dyb et al., 2003). On the other hand, the rates of PTSD observed in the current study were almost 2.5 times higher than those reported in a study assessing the impact of the early phases of the Russo-Ukrainian war on child mental health in 2016 in the highly exposed Donetsk region in eastern Ukraine and the city of Kropyvnytskyi (former Kirovograd) in central Ukraine (Osokina et al., 2023). Several explanations can be offered for this difference. First, the unprecedented escalation in violence of Russian aggression toward the civil population and infrastructure since February 24, 2022, has likely increased the rate of child PTSD across Ukraine. Second, the rate of PTSD reported by Osokina et al. (2023) may have been underestimated due to the short symptom reporting period and the use of child self-report measures (Danese & Martenskovskyi, 2023). Additionally, the age range of the Osokina et al. sample was older than ours, which is important to mention as we found a higher prevalence of PTSD in 3–6-year-old children than in 7–17-year-olds. Despite their methodological differences, collectively, these findings indicate that a substantial portion of children and adolescents in Ukraine are experiencing clinically relevant levels of PTSD as a direct consequence of the Russian invasion.

Children with provisional PTSD exhibited more day-to-day difficulties across various spheres of functioning than those without PTSD. These findings are in line with the previous studies showing

that child PTSD and war exposure are associated with greater impairments in social, academic, family, play, and other domains of life (Slone & Mann, 2016). Our findings indicate that those young people in Ukraine experiencing clinically relevant levels of PTSD are also experiencing more difficulties in their family life, education, and socializing. These children will therefore require considerable interventions to alleviate their posttraumatic distress and bring about improvements in their daily life.

As a second aim, we assessed the adjusted and unadjusted associations between provisional child PTSD status and a range of sociodemographic and parental mental health variables. History of parent-reported neurodevelopmental delay in a child was associated with a higher likelihood of PTSD, even controlling for all other factors. Delay of skills acquisition, including speech and motor skills, is a frequent sign of neurodevelopmental disorders, particularly autism spectrum disorder (ASD) and attention deficit hyperactivity disorder (ADHD; Dyck & Piek, 2014; Thurm et al., 2014). The sociocognitive features of neurodevelopmental disorders (e.g., deficits in trauma processing, memory, and emotion regulation) may account for the increased risks for PTSD (Rumball, 2019). Additionally, changes in routine for children with neurodevelopmental disorders can lead to an increase in challenging behavior, which may result in an inability to follow the required safety instructions and a higher risk of traumatic exposure. This explanation is partially supported by recent studies in children with ADHD (Schilpzand et al., 2018) reporting a higher prevalence of PTSD, as well as in adults with ASD suggesting the broader range of situations that were perceived as traumatic and a higher rate of PTSD compared to the general population (Rumball et al., 2020). Children who were forced to move to another region in Ukraine were 67% more likely to meet criteria for probable PTSD, a finding that is consistent with previous data from child refugees and asylum seekers (Bürgin et al., 2022).

Children of parents employed in the emergency services or the army were slightly more than twice as likely to meet criteria for provisional PTSD, adjusting for all other variables. The scale of Russian aggression in Ukraine required significant mobilization of human resources, including medical personnel, fire workers, police, social workers, and volunteers to respond to the massive destruction and human suffering. Previous studies demonstrated that children of first responders and active-duty soldiers had a higher rate of mental health impairment, including PTSD (Sharp et al., 2022). Our results are consistent with these findings, suggesting a positive association between parental affiliation with emergency services and/or the army and PTSD in their children.

Finally, we found a strong positive association between parental negative mental health and pediatric PTSD. These included parental PTSD/CPTSD status as well as an increase in anxiety and depressive symptoms since February 2022. Some studies suggest that this may be related to secondary traumatization, changes in child–parent relations, and decreased capacity of parents with trauma/affective/anxiety disorders to buffer negative traumatic experiences for their children (Creech & Misca, 2017; Scannell, 2021). However, these findings need to be considered with caution, as there is evidence that cognitive bias inherent in PTSD can lead to overperception of child symptoms (Dekel & Monson, 2010; Sullivan et al., 2016). Nevertheless, mental health professionals in Ukraine treating adults with mental health difficulties should be aware that their patient's children may also be at a heightened risk of mental health problems.

It is important to consider the study results in light of the several limitations. First, the study was conducted during the early active phase of the war that imposed limitations on our ability to use random probability sampling. Despite our attempts to recruit participants of different ages, sexes, and living in different regions of Ukraine, our sample is not representative of the Ukrainian population which limits the generalizability of our findings. Second, the diagnostic instruments used in the study were not validated in Ukrainian, although they were previously used successfully in routine clinical practice. Third, the rates of PTSD in the sample could be significantly higher, given the nature of the informant source and the tendency of parents to underestimate trauma exposure and its impacts on youth (Stover et al., 2010). This was supported by the initial study on the psychometric properties of CATS that demonstrated a moderate-to-high correlation between parental and child responses (Sachser et al., 2017). Fourth, our estimate of the prevalence of PTSD was based on the recent war-related traumatic event and did not account for nonwar-related trauma. Finally, the results of the regression analysis should be interpreted considering the cross-sectional design of our study that do not imply making non-biased causal associations between variables.

Conclusion

Despite these limitations, this study provides important preliminary estimates of the negative impact of the Russian invasion on child and adolescent mental health in Ukraine. Our findings suggest a relatively high prevalence of provisional PTSD among preschool-aged children and children of school age. We have identified several sociodemographic (developmental delays, forced migration, parental employment in the emergency services) and parental mental health variables (probable PTSD/CPTSD status, changes in anxiety and depression symptoms) potentially associated with increased risk of pediatric PTSD that may inform planning of critically needed mental health interventions for the pediatric population affected by the war in Ukraine. These, however, require careful assessment of current capabilities and needs. Although the Ukrainian population has been exposed to war exposure since 2014, the accessibility and utilization of mental health care were low, which was related to low psychoeducation, poor quality of services, and lack of financial capabilities to afford services (Roberts et al., 2019). The effective early steps may include the education of pediatric specialists in recognition of the consequences of war trauma, the development of digital interventions, and training in evidence-based trauma treatments to improve their accessibility, which were poorly represented in Ukraine before February 2022. While some of the needed projects are implemented or planned to be implemented (Frankova et al., 2022; Pfeiffer et al., 2023), the results of the current study may guide further projects to respond to the important but commonly neglected needs, for example, lack of trauma specialists working with children with neurodevelopmental delays.

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