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Scoping Review: Digital Mental Health Interventions for Children and Adolescents Affected by War

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Objective: More than 200 million children and adolescents live in countries affected by violent conflict, are likely to have complex mental health needs, and struggle to access traditional mental health services. Digital mental health interventions have the potential to overcome some of the barriers in accessing mental health support. We performed a scoping review to map existing digital mental health interventions relevant for children and adolescents affected by war, to examine the strength of the evidence base, and to inform the development of future interventions.

Method: Based on a pre-registered strategy, we systematically searched MEDLINE, Embase, Global Health, APA PsychInfo, and Google Scholar from the creation of each database to September 30, 2022, identifying $k = 6,843$ studies. Our systematic search was complemented by extensive consultation with experts from the GROW Network.

Results: The systematic search identified 6 relevant studies: 1 study evaluating digital mental health interventions for children and adolescents affected by war, and 5 studies for those affected by disasters. Experts identified 35 interventions of possible relevance. The interventions spanned from universal prevention to specialist-guided treatment. Most interventions directly targeted young people and parents or carers/caregivers and were self-guided. A quarter of the interventions were tested through randomized controlled trials. Because most interventions were not culturally or linguistically adapted to relevant contexts, their implementation potential was unclear.

Conclusion: There is very limited evidence for the use of digital mental health interventions for children and adolescents affected by war at present. The review provides a framework to inform the development of new interventions.

Diversity & Inclusion Statement: We actively worked to promote sex and gender balance in our author group.

Study preregistration information: Digital mental health interventions for children and young people affected by war: a scoping review; <https://osf.io/hrny9>.

Key words: war; mental health; children; adolescents; digital intervention

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More than 200 million children and adolescents live in countries affected by violent conflict.¹ Most recently, the Russian invasion of Ukraine has brought war to European soil, leaving more than 5 million children and adolescents in need of humanitarian assistance.²

Children and adolescents affected by war have complex mental health needs.³⁻⁶ Direct or indirect exposure to

multiple traumatic events can disrupt psychosocial development⁷ and lead to a range of mental health problems, including not only post-traumatic stress disorder (PTSD) but also depressive disorder, anxiety disorders, conduct disorder, substance misuse, and others.^{3,8} Such trauma-related psychopathology can interrupt education and result in self-harm and suicide attempts.^{8,9} During and after war, these effects are compounded by ongoing threat, grief

following the loss of loved ones, and parental psychopathology.¹⁰ Furthermore, in response to the war, some young people may be able to remain in their home communities, whereas others may be internally displaced or may have to leave their countries as asylum seekers or refugees—with increasing levels of displacement, separation from their families, and disruption of their routines.

Six decades of research have produced effective interventions for youth mental health disorders and problems.^{11,12} However, these beneficial interventions cannot be accessed by many young people in war-affected regions because of multiple barriers to providing mental health services and delivering psychosocial support.

Some barriers are psychological. Common trauma-related emotions (eg, shame, guilt), cognitions (eg, distrust, hopelessness), and behaviors (eg, avoidance, inactivity) may reduce engagement with mental health services, even when universal access to care is available.¹³

Some barriers are cultural. Limited mental health knowledge, stigma around mental illness, or concern about being stigmatized by others may prevent detection of mental health needs or make certain interventions unacceptable. These barriers are major impediments to mental health help-seeking in young people globally and are particularly prominent in some cultures.¹⁴

Other barriers are structural. War-related disruption of transportation systems (eg, by shelling) and of family and community networks (eg, because of displacement) can impede access to mental health services,¹⁵ and refugees displaced to other countries may be hosted in asylum centers in remote areas with scarce local service provision. Countries in which refugees are resettled usually do not have enough mental health professionals speaking the language of refugees, and access to funding for trained translators is limited.¹⁶ Furthermore, the limited specialist workforce trained in child and adolescent psychiatry or psychology can be easily overwhelmed by a rapid rise in demand for services.^{15,17} Moreover, in this specialist workforce, training in assessment and treatment of trauma-related psychopathology is often inadequate to meet demand even in peacetime.¹³

Digital mental health interventions¹⁸ have the potential to help overcome some key barriers to delivering mental health and psychosocial support to children affected by war. For example, they can provide free, engaging psycho-educational materials to reduce stigma and increase help-seeking.¹⁹ They can be promptly delivered with no or minimal contact with mental health professionals, directly reaching children and parents at times and places that are most convenient for them.²⁰ They can also widen the reach of the existing specialist and non-specialist workforce by supporting remote and/or asynchronous delivery of

treatment and enabling training and supervision in assessment and treatment of trauma-related psychopathology.²¹ Finally, they are supported by growing empirical evidence from randomized clinical trials showing that brief digital interventions, even those consisting of only a single session, can produce substantial mental health benefit.²²

There are also important limitations of digital intervention that need to be considered in development and implementation phases. Although there has been a rapid growth in mobile communication and Internet access in low-and-middle-income (LMIC) countries that are more often affected by war,²³ access can be unequal (digital divide), so that more vulnerable and/or affected individuals may struggle more to use a mobile network, find charging facilities, and understand the functioning of devices or applications. Of course, the impact of war can also affect the availability or reliability of Internet access at the population level.

Based on this developing evidence, the World Psychiatry Association's (WPA) Commission on the Future of Psychiatry has named digital psychiatry as a key priority area for improving global mental health in the next decade.²⁴ This WPA Commission statement has been extended with a focus on child and adolescent mental health by the WPA Section on Child and Adolescent Psychiatry, the International Association for Child and Adolescent Psychiatry and Allied Professions (IACAPAP), the World Association for Infant Mental Health (WAIMH), the International Society for Adolescent Psychiatry and Psychology (ISAPP), the UN Special Rapporteur on the Right to Health, and representatives of the World Health Organization (WHO) Department of Mental Health and Substance Abuse.²⁵

We have undertaken this scoping review to map and to describe the available digital mental health interventions that may be relevant for children and adolescents affected by war, and to provide evidence related to the global agenda of the WPA and other key stakeholders. We aimed to identify evaluations of digital mental health interventions in this area. We also aimed to identify promising resources that could be further tested in future studies or inform the development of new interventions. As such, we also reviewed digital mental health interventions developed in the context of natural disasters, which may be similar in scale and for the involvement of entire communities but which also typically differ for the acute, non-interpersonal nature of the trauma and the greater availability of local support infrastructures.

METHOD

The scoping review was conducted in accordance with the Joanna Briggs Institute (JBI) Reviewer Manual²⁶ and the

framework suggested by Arksey and O'Malley.²⁷ The protocol was registered on the Open Science Framework (<https://osf.io/hrny9/>). The scoping review is reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Table S1).²⁸

We undertook an extensive consultation within the Global Resources fOr War-affected youth (GROW) Network, our large, multidisciplinary, international group of experts in the areas of emergency and disaster psychology, child and adolescent mental health, and digital mental health. This consultation assisted in planning the systematic database search and additionally enabled us to identify further studies and relevant resources (hereafter collectively referred to as interventions) not identified in our systematic search.

Interventions were included based on expert opinion if it included content that met the following criteria: (1) addressed presentations, concerns, and types of psychopathology relevant to war-affected young people; (2) were of good quality (ie, reflected safe and/or evidence-based principles); (3) were easy to understand (ideally co-produced with young people and families); (4) targeted different levels on needs in the population and delivery methods (ranging from self-guided psycho-education to delivery by specialist workers); and (5) were ideally available in multiple languages. Overall, the aim was to identify interventions that, albeit not developed or tested in the context of war, could be adapted and tested in further research.

Eligibility Criteria for the Systematic Search

Inclusion Criteria. Studies were included if they met the following criteria: (1) they considered digital mental health interventions, defined as the use of information and communications technology in support of mental health²⁹; (2) they included evaluation of these interventions (eg, experimental designs, Non-controlled trials, randomized controlled trials); (3) the interventions aimed to improve promotion of well-being, or prevention or treatment of any mental illness (symptoms or disorders); (4) the interventions targeted children or adolescents (0-18 years of age); (5) the interventions might be relevant to children or adolescents affected by war (ie, living in war-affected countries, or internally or externally displaced); and (6) information on the interventions was published (eg, in scientific journals or on websites), without restrictions to language or geographic area.

Exclusion Criteria. Studies were excluded if they targeted only adults, or if they focused on digital tools for diagnosis,

screening, monitoring, communication, or data management.

Search Strategy

We systematically searched MEDLINE, Embase, Global Health, and APA PsychInfo from the creation of each database to September 30, 2022 through Ovid (<https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi>). To retrieve gray literature of studies not published through traditional models, we also conducted a Google Scholar search and screened the first 10 pages of relevancy-ranked results (200 results).

We undertook 3 searches, progressively expanding the search terms (see <https://osf.io/hrny9/>). We used results from the last and most comprehensive systematic search, which included the following search terms: (telemedicine OR telehealth OR mobile health OR mhealth OR m-health OR digital health OR tele* OR digital* OR remote* OR video* OR Ehealth OR e-health OR electronic health OR virtual* OR Internet OR mobile app* OR web-based OR website OR online) AND (PTSD OR post traumatic* OR posttraumatic* OR post-traumatic* OR trauma OR traumat* OR stress OR depress* OR anxiety OR anxious OR mental health OR mental disorder OR psychological OR psychosocial OR wellbeing OR well-being OR coping) AND (child* OR adolescen* OR young people OR teen* OR youth* OR parent* OR famil*) AND (prevention OR intervention* OR treatment OR therapy) AND (war OR armed conflict OR community violence OR political violence OR disaster* OR displace* OR refugee* OR terror* OR sexual abuse OR rape OR loss OR grief).

Study Selection

The studies identified through the systematic search were deduplicated and downloaded into Rayyan.³⁰ Title, abstract, and full-text screening was conducted by 2 independent reviewers (DM, BLL). Discrepancies were reviewed in consultation with a third reviewer (AD), when required. If any retrieved article was in a language unknown to the authors, the article was translated into English by a native network member or by using Google Translate.

Data Extraction

A standardized form was developed for documenting extracted relevant information, which was modified after piloting on a small sample of articles. Information extracted for each study included the following: intervention name, author, description of the intervention, target of the intervention, intended audience, delivery method, settings for the intervention, country in which the intervention was

developed, language, digital elements, platform required to access the intervention, fees to access the intervention, access restriction, evidence for efficacy, link to intervention, and link to evaluation study.

For studies identified in our systematic search, 2 reviewers (BR and MYK) independently extracted the relevant data. Discrepancies were resolved in consultation with a third reviewer (AD), when required.

For additional interventions identified by GROW Network expert opinion, 3 reviewers (ED, EK, SM) each extracted data from one-third of the identified articles and then checked a third of another reviewer's data extraction. Discrepancies were resolved in consultation with a fourth reviewer (JRW), when required.

Data Synthesis

As in previous reviews and editorials on (non-digital) interventions for children and adolescents affected by war,^{10,31,32} we have organized the results of the scoping review according to the Inter-Agency Standing Committee (IASC) intervention pyramid, as explained below.³³

Levels 1 and 2 include universal interventions that are self-guided or guided by non-specialists and thus are typically aimed at children (or their parents/carers) who do not have current psychiatric symptoms, are at risk for developing symptoms, or have mild or transient symptoms.

Level 3 includes targeted interventions that are self-guided or guided by non-specialists and thus are typically aimed at children (or their parents/carers) who already have high level of symptoms.

Level 4 includes targeted interventions that are guided by specialists and thus are typically aimed at children (or their parents/carers) who either have persistently high level of symptoms or meet criteria for a disorder.

RESULTS

Search Results

The systematic search process is displayed in Figure 1. The systematic search identified 6 studies evaluating digital mental health interventions relevant for children and adolescents affected by war,³⁴⁻³⁹ which are summarized in Table 1. Experts from the GROW Network identified 35 additional interventions,⁴⁰⁻⁷⁴ which are summarized in Table 2. We therefore considered a total of 41 interventions.

Target Outcome

The interventions were aimed at 4 main targets. A total of 19 interventions focused on addressing specific psychological

symptoms or disorders (9 on anxiety and on depression, 5 on PTSD, 2 on behavioral difficulties, and 1 on alcohol use, anger, or insomnia; in addition, 2 covered many of these symptoms and a broad range of other specific difficulties). A total of 15 interventions focused on coping with traumatic or stressful experiences (7 on war/displacement-related experiences, 6 on generic traumatic or stressful experiences, and 2 on rape). Six interventions focused on normalization and/or psycho-education. One intervention focused on managing emotional and behavioral difficulties in individuals with special needs, such as learning disabilities.

Level of Intervention

The majority of interventions (27) were for level 1 or 2 of the IASC intervention pyramid—universal interventions that are self-guided or guided by non-specialists, and thus are typically aimed at children (or their parents/carers) who do not have current psychiatric symptoms, are at risk for developing symptoms, or have mild or transient symptoms.

Fifteen interventions were for level 3 of the IASC intervention pyramid—targeted interventions that are self-guided or guided by non-specialists and thus are typically aimed at children (or their parents or carers/caregivers) who already have high levels of symptoms.

Ten interventions were for level 4 of the IASC intervention pyramid—targeted interventions that are guided by specialists and thus are typically aimed at children (or their parents/carers) who either have persistently high level of symptoms or meet criteria for a disorder.

Audience

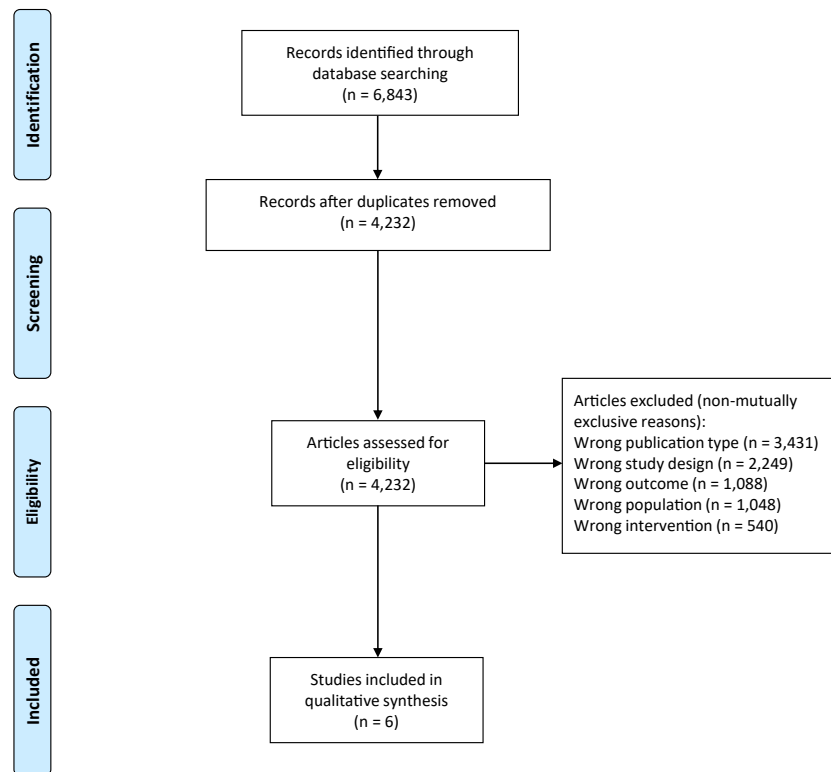
The interventions were mainly for adolescents (24) or parents/carers (22), and a few (12) focused on children (we classified children and adolescents as participants younger than 12 years of age or between 12 and 18 years, respectively, or as described by the interventions when age range was not clearly provided). Of these, 8 interventions were for both adolescents and parents/carers and 5 were for children and parents. Three interventions were for non-specialist workers, and 3 were for specialist workers.

Settings

Most interventions (30) were developed in the general population, 8 in the context of war and/or displacement, and 3 in the context of natural disasters.

Country

A total of 15 interventions were developed (and, where relevant, examined) in the United States, 9 in the United Kingdom, 5 in the Netherlands, 3 in Norway, 2 in New

FIGURE 1 PRISMA Flow Diagram for the Systematic Search

Zealand, and 1 intervention each in Australia, Canada, Denmark, Kenya, Poland, Sweden, Switzerland, or Ukraine.

Language

The majority of interventions (35) were available in English. Nine interventions were in Ukrainian, 4 in Arabic, Dutch or Russian, 3 in French or Norwegian, 2 in Farsi, German, Pashto, Spanish, or Vietnamese, and 1 in Chinese, Danish, Dari, Estonian, Finnish, Georgian, Greek, Hungarian, Italian, Korean, Japanese, Lithuanian, Malay, Myanmar, Romanian, Serbian, Slovak, Somali, Tigrinya, Tongan, Turkish, and Urdu.

Delivery

Most interventions (36) were delivered, or could be delivered, as self-guided interventions. Seven interventions were guided by a specialist worker, whereas 1 intervention was guided by a non-specialist worker.

Digital Elements

Most interventions relied on online text (33) and/or videos (25) to deliver their content, and some included online sound clips (4). Some used more interactive elements, such as games/exercises (17), messaging/chatbot (4), or phone calls (1).

Platforms

The majority of interventions (28) were hosted on websites that required only Internet and Web-browsing access, whereas some (13) required specific apps.

Fees

Most interventions (28) were freely available, whereas 5 had paid access and 8 had unclear costing.

Access

Most interventions (24) were open access, whereas 17 were restricted by either costs or geographic limitations (ie, they were openly available only in the country in which they had been developed).

Evidence

Most of the interventions (25) were not formally evaluated for their efficacy, whereas 11 were investigated with randomized controlled trials (RCTs) and 5 with non-controlled trials. Of the RCTs, 5 tested interventions at level 1 or 2, 6 tested interventions at level 3 (5 of them were self-guided, and 1 was guided by non-specialist workers), and 1 RCT tested an intervention at level 4 (the intervention was guided by a specialist worker but focused on a low-severity

TABLE 1 Studies on Digital Mental Interventions Relevant for Children and Adolescents Affected by War Identified by the Systematic Search

Name (author, year), reference)	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Race/ethnicity in sample (%)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
Bounce Back Now (Ruggiero, 2015) ³⁴	Modular CBT-based intervention in which adolescents and parents self-selected content from 4 multi-session modules for PTSD symptoms, depressive symptoms, alcohol use, and cigarette use	Specific symptoms (PTSD, depression, alcohol use)	1	Adolescents, parents/carers	Self-guided	Natural disaster	US (English)	62.5 White, 22.6 Black, 3.8 other, 2.7 Hispanic; 11.1 declined to report	Online text, sound clips, and videos, interactive games/exercises	Specific app	Free	Open	RCT with 987 young people affected by tornadoes and recruited irrespective of baseline mental health status. Intent-to-treat analyses found small improvements in PTSD symptoms ¹ (Cohen <i>d</i> = 0.19) and depressive symptoms ² (<i>d</i> = 0.14) and in alcohol use (<i>d</i> = 0.12) in adolescents at 12-mo follow-up	https://apple.com/gb/app/bounce-back-now/id1584368927	https://www.jaacap.org/article/S0890-8567(15)00433-5/fulltext
Unnamed (Resnick, 2007) ³⁵	Video delivered immediately before to a forensic medical examination in the aftermath of sexual assault including description of key aspects of the examination, psycho-education about possible reactions to rape, and coping skills	Coping with trauma or stressful experiences (rape)	1	Adolescents	Self-guided	General population	US (English)	50.7 White, 44.3 African American, 2.1 Asian, 1.4 Hispanic, 1.4 Native American	Online videos	-	Free	Restricted (videos not publicly available)	RCT with 140 female victims of sexual assault 15 y or older (mean age = 26 y). Intervention led to reduction in PTSD ³ (<i>d</i> = -0.14), anxiety ⁴ (<i>d</i> = -0.19), and depression symptoms ⁵ (<i>d</i> = -0.30) at 6 wk after baseline in those with previous rape history, but worsening in anxiety ⁴ (<i>d</i> = 0.16), depression ⁵ (<i>d</i> = 0.08), and PTSD ³ (<i>d</i> = 0.02) symptoms in those without previous rape history. No group differences at 6 mo follow-up	—	https://www.sciencedirect.com/science/article/pii/S0005796707001076?via%3Dihub

(continued)

TABLE 1 Continued

Name (author, year), reference)	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language) Race/ethnicity in sample (%)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
Happy Helping Hand (Schuler, 2022) ³⁶	Toolkit with simulations (with a psychologist or avatar) building coping skills in a series of life-like scenarios	Coping with trauma or stressful experiences (war, displacement)	3 or 4	Adolescents	Guided by specialist (or self-guided)	War, displacement	Norway (English, French, Norwegian, Ukrainian, Arabic) Race/ethnicity not reported	Online text and videos, games/interactive exercises	Specific app	Free	Open	Non-controlled trial with 125 Syrian adolescent refugee in Lebanon. Intervention associated with significant improvement in anxiety and depression symptoms ⁶ and in wellbeing ⁷ between pre- and post-treatment conditions	https://apps.apple.com/gb/app/happy-helping-hand/id1584828621	https://www.emerald.com/insight/content/doi/10.1108/IJMHS-07-2021-0060/full/html
Sonoma Rises (Heinz, 2022) ³⁷	CBT-based toolkit on coping with traumatic experiences based on the US National Center for PTSD / National Child Traumatic Stress Network Skills for psychological recovery and the PTSD Coach app	Coping with trauma or stressful experiences (generic)	3	Adolescents	Self-guided	Natural disaster	US (English, Spanish) 71.4 White, 13.2 Hispanic/Latino, 15.5 other	Online sound clips, interactive games/exercises	Specific app	Free	Restricted (App not available to download after 2020)	Multiple-baseline single-case experimental design with 7 adolescents with PTSD symptoms. Due to small sample size, efficacy not formally evaluated	https://www.mysonomastrong.com/index.php	https://psycnet.apa.org/doiLanding?doi=10.1037%2Fser0000576
Brave Online (Stasiak, 2016) ³⁸	CBT-based toolkit focused on anxiety symptoms	Specific symptoms (anxiety)	4	Children, adolescents, parents/carers	Guided by specialist	Natural disaster	New Zealand (English) Race/ethnicity not reported	Online text, sound clips and videos, interactive games/exercises	Internet	Free	Restricted (Australia)	Non-controlled trial with 42 young people 18 mo after earthquakes. Intervention associated with reduction in anxiety disorder diagnoses, ⁸ anxiety symptoms, mood symptoms, and improvements in quality of life at 6 mo after baseline	https://exp.psych.uq.edu.au/brave/	https://www.jaacap.org/article/S0890-8567(16)30911-X/pdf#relatedArticles

(continued)

TABLE 1 Continued

Name (author, year), reference)	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Race/ethnicity in sample (%)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
Interapy (De Haas, 2009) ³⁹	CBT-based intervention providing advice after trauma and stressful experiences through online sessions and messaging	Coping with trauma or stressful experiences (rape)	4	Adolescents	Guided by specialist	General population	Netherlands (Dutch) Race/ethnicity not reported	Messaging/ chatbox	Internet	Paid	Restricted (contact provider: www.interapy.nl)	Non-controlled trial with 8 adolescent victims of sexual assault 18 y or younger. Intervention associated with nominal reduction in PTSD, ⁹ anxiety, ¹⁰ and depressive ¹⁰ symptoms between pre- and post-treatment conditions	www.interapy.nl	https://www.interapy.nl/docs/wetenschap/de-haas-2009—interapy-behandeling-via-het-Internet-voor-jeugdige-slachtoffers-van-seksueel-geweld.pdf?sfvrsn=5e0fe2ac_2

Note: CBT = cognitive-behavioral therapy; IASC = Inter-Agency Standing Committee; PTSD = post-traumatic stress disorder; RCT = randomized controlled trial.

target, namely, depression onset). Of the non-controlled trials, none tested interventions at level 1 or 2, whereas 2 tested interventions at level 3, and 3 tested interventions at level 4.

Two of the 11 RCTs were identified by the systematic search. First, in an RCT of the Bounce Back Now modular CBT-based intervention with 987 adolescents affected by tornadoes and recruited irrespective of baseline mental health status, intention-to-treat analyses found small improvements in PTSD symptoms (Cohen $d = 0.19$) and depressive symptoms ($d = 0.14$) in adolescents at 12-month follow-up. Second, in an RCT of a psycho-educational intervention immediately preceding post-sexual assault examination with 140 female victims of sexual assault aged 15 years or older (mean age = 26 years), the intervention led to reduction in depression symptoms ($d = -0.30$), anxiety ($d = -0.19$), and PTSD ($d = -0.14$) at 6 weeks after baseline in those with a previous rape history but worsening in anxiety ($d = 0.16$), depression ($d = 0.08$), and PTSD ($d = 0.02$) symptoms in those without previous rape history; no group differences were found at 6-month follow-up. The remaining 9 RCTs were identified by experts from the GROW network to provide examples of interventions on a wide range of psychopathology (PTSD, depression, anxiety, sleep problems, disruptive behaviors) that might be adapted in the context of war.

DISCUSSION

This scoping review comprehensively mapped digital mental health interventions aimed at preventing or treating psychopathology among children and adolescents affected by war. Our focused systematic search identified a limited set of 6 relevant interventions, of which only 1 intervention focused directly on young people who experienced war, whereas others included young people who experienced disasters. The systematic search was complemented by input from topic experts, who identified several other interventions of potential relevance. This exercise has highlighted helpful resources and future challenges in the area.

Overall, the interventions identified span the different levels of the IASC intervention pyramid, from universal prevention to targeted and specialist-guided treatment. The interventions focused on normalization and/or psycho-education about psychological responses to stress, information on coping with traumatic or stressful experiences, and treatment for the different types of psychopathology that are typically seen in children and adolescents exposed to trauma and in those who are refugees and asylum seekers.³ However, the interventions do not specifically cover some issues that are common in the context of war, such as

TABLE 2 Digital Mental Health Interventions of Possible Relevance for Children and Adolescents Affected by War Identified by Expert Opinion

Name (author), reference	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
BBC Bitesize: How to Boost Positivity for Your Family at Home (Danese) ⁴⁰	Blog with CBT-based advice for families on how to boost positivity at home	Specific symptoms (depression)	1	Parents/carers	Self-guided	General population	UK (English)	Online text	Internet	Free	Open	None listed	https://www.bbc.co.uk/bitesize/articles/zykkvwx	—
Families Under Pressure (Danese) ⁴¹	Video animations delivering accessible CBT-based advice to support parents helping children and young people who are struggling with anxiety or depression	Specific symptoms (anxiety, depression, behavior difficulties)	1	Parents/carers	Self-guided	General population	UK (English, German)	Online text and videos	Internet	Free	Open	None listed	https://maudsleycharity.org/families-under-pressure-emotions/ ; www.familienunterdruck.de	—
Keep Cool (Danese) ⁴²	Videos co-produced with young people to provide CBT-based advice on coping with strong emotions (anger, anxiety, sadness)	Specific symptoms (anger, anxiety, depression)	1	Adolescents	Self-guided	General population	UK (English)	Online text and videos	Internet	Free	Open	None listed	https://www.kcl.ac.uk/research/keepcool	—
Dare to Share (Child Mind Institute) ⁴³	Videos of celebrities and young people describing their own challenges and how they asked for help in order to normalize help seeking	Normalization, psycho-education	1	Children, adolescents, parents/carers	Self-guided	General population	US (English)	Online text and videos	Internet	Free	Open	None listed	https://childmind.org/daretoshare/?utm_medium=email&utm_source=email&utm_campaign=dts_wk4_2022-06&utm_content=dare_to_share	—

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TABLE 2 Continued

Name (author), reference	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
Mental Health Is Health (MTV) ⁴⁴	Toolkit to normalize conversation on mental health and provide coping resources	Normalization, psycho-education	1	Adolescents, parents/carers	Self-guided	General population	US (English)	Online text and videos, interactive games/exercises	Internet	Free	Open	None listed	https://www.mentalhealthishealth.us	—
Sleepio (Big Health Inc) ⁴⁵	CBT-based programme to treat insomnia	Specific symptoms (insomnia)	1	Adolescents, parents/carers	Self-guided	General population	UK (English)	Online text and videos, interactive games/exercises	Specific app	Free	Restricted (UK)	Multiple RCTs	https://onboarding.sleepio.com/sleepio/nhs-sleepio/171#1/1	https://www.bighealth.co.uk/research/
Children and War Guide for Refugee Parents: Parent Guide (Children and War Foundation, Danish Red Cross) ⁴⁶	Phone app delivering parenting advice to support children through traumatic life events in a refugee situation	Coping with trauma or stressful experiences (war, displacement)	1	Parents/carers	Self-guided	War, displacement	Denmark / Norway (English, Danish, Norwegian, Pashto, Tigrinya, Serbian, Russian, Somali, Persian, Arabic, and Ukrainian)	Online text	Internet, specific app	Free	Open	None listed	https://apps.apple.com/us/app/parent-guide/id1247444812	—
Ukraine Parenting Response ⁴⁷	Online text with practical tips for parents to help themselves and their children cope during the current crisis in Ukraine	Coping with trauma or stressful experiences (war, displacement)	1	Parents/carers	Self-guided	War, displacement	UK (English, Russian, Ukrainian)	Online text and videos	Internet	Free	Open	None listed	https://ukraineparenting.web.ox.ac.uk/eng	—
Handhold (Massachusetts Department of Mental Health) ⁴⁸	Online text with practical tips for parents to help children and young people who are struggling with mental health difficulties	Normalization, psycho-education	1	Parents/carers	Self-guided	General population	US (English)	Online text and videos	Internet	Free	Open	None listed	https://handholdma.org	—

(continued)

TABLE 2 Continued

Name (author), reference	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
Beebo App (UNICEF Ukraine) ⁴⁹	Phone app delivering parenting advice on how to provide mental health support and practical support (feeding/nappies) children, and how to monitor child health (eg, vaccinations and milestones)	Normalization, psycho-education	1	Parents/carers	Self-guided	War, displacement	Ukraine (Ukrainian)	Online text and videos	Specific app	Free	Open	None listed	https://www.unicef.org/ukraine/en/press-releases/unicef-launches-bebbo-mobile-app-help-parents-care-children-during-war	—
Sesame Street ⁵⁰	Videos with coping skills for pre-school children in the context of war and crisis situations	Normalization, psycho-education	1	Children, parents/carers	Self-guided	General population	US (English, multiple translations for some episodes)	Online videos	Internet	Free	Open	None listed	https://sesamestreetincommunities.org/subtopics/resources-in-ukrainian/	—
Inside Out (Disney Pixar) ⁵¹	Feature film providing accessible information on emotions and coping skills for children	Normalization, psycho-education	1	Children, adolescents, parents/carers	Self-guided	General population	US (English, multiple translations)	Online videos	Internet	Paid	Restricted	None listed	https://www.pixar.com/feature-films/inside-out	—
Heroes (Safarzyńska-Płatos) ⁵²	Short therapy books for children discussing difficult emotions related to war and fleeing to another country	Coping with trauma or stressful experiences (war, displacement)	1	Children	Self-guided	War, displacement	Poland (Ukrainian)	Online text	Internet	Free	Open	None listed	https://potrzebafantazji.com/bohaterowie/?fbclid=IwAR1ji2TdcjBJFf1Q15xZeeGHDMqjPvokWRbtmXwaCyvxCyAzjSOQrHcG6o0	—

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Name (author), reference	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
MindEd, Trauma and Coping Page (Danese) ⁵³	Online text/video providing psycho-education on responses to trauma and coping strategies	Coping with trauma or stressful experiences (generic)	1	Parents/carers	Self-guided	General population	UK (English)	Online text and videos	Internet	Free	Open	None listed	https://mindedforfamilies.org.uk/Content/trauma_and_coping/#/id/5e3150ac12321b4bca7242d7	—
Safe Place App (Barnen; Save the Children) ⁵⁴	Toolkit of coping skills to support young people who had difficult experiences, stress, difficulty sleeping and worries	Coping with trauma or stressful experiences (generic)	1	Children, adolescents	Self-guided	General population	Sweden (English, Swedish, Ukrainian)	Online text and videos, interactive games/exercises	Specific app	Free	Open	None listed	https://apps.apple.com/de/app/safe-place/id1445174667	—
Do to Learn ⁵⁵	Toolkit for young people with special needs including social skills and behavioral regulation activities and guidance	Managing emotional and behavioral difficulties and improving skills relevant to those with special needs	1	Parents/carers, non-specialist workers	Self-guided	General population	US (English)	Online text and videos, interactive games/exercises	Internet	Free	Open	None listed	https://do2learn.com/	—
Lifeline for Kids (UMASS) ⁵⁶	Videos providing parenting advice to support children after challenging experiences	Coping with trauma or stressful experiences (generic)	1	Parents/carers	Self-guided	General population	US (English)	Online videos	Internet	Free	Open	None listed	https://www.umassmed.edu/cttc/pair-a-docs-video-series/	—

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TABLE 2 Continued

Name (author), reference	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
Doing What Matters in Times of Stress (WHO) ⁵⁷	Online text/ cartoons providing information on helpful coping skills to use at times of stress	Coping with trauma or stressful experiences (generic)	1	Children, adolescents, parents/ carers	Self-guided	General population	Switzerland (Arabic, Chinese, Dari, English, Estonian, Farsi, French, German, Georgian, Greek, Hungarian, Italian, Korean, Japanese, Lithuanian, Romanian, Russian, Spanish, Slovak, Tongan, Turkish, Ukrainian, Urdu, Vietnamese)	Online text and sound clips	Internet	Free	Open	None listed	https://www.who.int/publications/item/9789240003927	—
Cool Little Kids (Rapee) ⁵⁸	Online text/ videos delivering parenting advice to support shy or anxious children	Specific symptoms (social anxiety)	1	Parents/carers	Self-guided	General population	Australia (English)	Online text and videos	Internet	None listed	Restricted (contact authors)	RCT with 433 parents of children 3-6 y of age with inhibited temperament. Intervention led to improvement in child anxiety symptoms at 24 wk after baseline	https://coollittlekids.org.au/login	www.science.direct.com/science/article/pii/S0890856717301065
E-Health Programs ⁵⁹	Toolkit for children and adolescents with a range of mental health problems	Specific symptoms (very broad range)	1-3	Children, adolescents	Self-guided	General population	Netherlands (Dutch)	Online text and videos, games/ interactive exercises, messaging/ chatbox	Internet	Paid	Restricted	None listed	https://therapieland-nl.translate.google.com/programas/?_x_tr_sl=nl&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=wapp	—

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TABLE 2 Continued

Name (author), reference	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
First Aid to Terror ⁶⁰	Telegram-based chatbot for Ukrainians affected by war based on psychological first aid from WHO	Coping with trauma or stressful experiences (war, displacement)	1-3	Non-specialist workers	Self-guided	War, displacement	Netherlands (English, Ukrainian)	Online text, messaging/ chatbox	Specific app	Free	Open	None listed	http://firstaidtoterror.com/	—
MindReSolve (Watkins) ⁶¹	CBT-based toolkit targeting rumination to prevent depression in at-risk adolescents/ young adults	Specific symptoms (worry, rumination)	1 or 4	Adolescents	Self-guided (or guided by specialist)	General population	UK (English)	Online text and videos	Internet	None listed	Restricted (contact authors)	RCT with 235 high-risk university students. Guided and non-guided intervention led to reduction in risk of depression onset	https://www.minddistrict.com/catalogue/reducing-worry-rumination-and-stress-mindresolve	https://www.jmir.org/2019/5/e11349/
Family Skills Programmes (United Nations) ⁶²	Set of programs providing parenting skills training across a range of scenarios and needs	Coping with trauma or stressful experiences (war, displacement, natural disaster)	1-4	Parents/carers	Self-guided	War, displacement, natural disaster	UK (English, Malay, Myanmar, Pashto, Russian, Ukrainian, Vietnamese)	Online text	Internet	Free	Open	None listed	https://www.unodc.org/unodc/en/prevention/family-skills.html	-
Dossier Oekraïne (EMDR Europe) ⁶³	Set of guidelines for EMDR healthcare professionals and hosts/ carers to support young people from Ukraine	Coping with trauma or stressful experiences (war, displacement)	1-4	Parents/carers, non-specialist workers	Self-guided	War, displacement	Netherlands (English, Dutch)	Online text	Internet	Free	Open	None listed	https://www.emdr.nl/dossier-oekraïne/#richtlijnen-emdr-europe	—
Project Empower (Schleider) ⁶⁴	Single session intervention for anxious parents to reduce parental accommodation	Specific symptoms (anxiety)	3	Parents/carers	Self-guided	General population	US (English)	Online text, interactive games/ exercises	Internet	Free	Open	RCT with 301 parents who reported elevated anxiety symptoms and had children aged 4-10 y. Intervention led to reduction in parental	www.schleiderlab.org/empower	https://mental.jmir.org/2021/7/e29538/

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TABLE 2 Continued

Name (author), reference	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
Project YES (Schleider) ⁶⁵	Single-session intervention on growth mindset and behavioral activation for adolescents with emotional symptoms	Specific symptoms (anxiety, depression)	3	Adolescents	Self-guided	General population	US (English)	Online text	Internet	Free	Open	accommodation of child anxiety and overall distress tolerance from baseline to 2-wk follow-up in parents RCT in 2,452 adolescents aged 13-16 y. Intervention led to reduction in depressive symptoms at 3 mo	www.schleiderlab.org/yes	https://www.nature.com/articles/s41562-021-01235-0
Project Shamiri (Osborn) ⁶⁶	Single session intervention on growth mindset, gratitude, and value affirmation for adolescents with emotional symptoms	Specific symptoms (anxiety, depression)	3	Adolescents	Self-guided	General population	Kenya (English, French, Arabic)	Online text	Internet	Free	Open	RCT in 103 adolescents. Intervention led to reduction in depressive symptoms at 2-wk follow-up. No significant effects on anxiety symptoms, well-being, or happiness	https://thrive-online.shamiri.institute	https://psycnet.apa.org/doi/Landing?doi=10.1037%2Fccp00000505
SPARX (Merry) ⁶⁷	CBT-based intervention to reduce depressive symptoms in help seeking adolescents	Specific symptoms (depression)	3	Adolescents	Self-guided	General population	New Zealand (English)	Interactive games/exercises	Specific app	None listed	Restricted (contact authors)	RCT of 187 help-seeking adolescents in primary care. Intervention was not inferior to TAU with face-to-face contact after treatment and at 3-mo follow-up	https://www.sparx.org.nz/home	https://www.bmj.com/content/344/bmj.e2598

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TABLE 2 Continued

Name (author), reference	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
Coping Coach (Kassam-Adams) ⁶⁸	CBT-based game on coping with traumatic experiences for young people physically recovering following injury or sudden illness	Coping with trauma or stressful experiences (generic)	3	Children, adolescents	Self-guided	General population	US (English)	Interactive games/exercises	Internet	None listed	Restricted (contact authors)	RCT with 72 children over 6 wk. Most children used the intervention; half completed it. Intervention led to reduction in PTSD symptoms at 6 wk and 12 wk	https://injury.research.chop.edu/blog/posts/coping-coach-web-based-game-help-children-recover	https://www.science.direct.com/science/article/pii/S0005796707001076?via%3Dihub
Strongest Families Intervention (Sourander) ⁶⁹	Parent training program for parents of children with disruptive behavioral problems	Specific symptoms (behavioral difficulties)	3	Parents/carers	Guided by non-specialist	General population	Canada (English, Finnish)	Online text and videos, phone call	Phone, Internet	None listed	Restricted (to referred families)	RCT with 464 parents of children 4 y of age with high level of disruptive behavioral problems identified through whole-population screening. Intervention led to improvement in externalizing and internalizing symptoms in children at 12 mo after baseline	https://strongestfamilies.com	https://jamanetwork.com/journals/jama-psy/psychiatry/fullarticle/2494708

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TABLE 2 Continued

Name (author), reference	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
TF-CBT Triangle of Life ⁷⁰	App to assist therapists in delivering trauma-focused cognitive—behavioral therapy to children and adolescents	Specific symptoms (PTSD)	4	Children, adolescents, specialist workers	Guided by specialist	General population	US (English)	Online text, interactive games/exercises	Specific app	None listed	Restricted (US)	None listed	https://apps.apple.com/us/app/tf-cbt-triangle-of-life/id978441894	—
Min hverdag (My Everyday Life; Birkeland) ⁷¹	App to assist therapists in delivering trauma-focused cognitive—behavioral therapy to children and adolescents	Specific symptoms (PTSD)	4	Children, adolescents, specialist workers	Guided by specialist	General population	Norway (Norwegian)	Online text, interactive games/exercises	Specific app	None listed	Restricted (contact authors)	None listed	https://www.nkvt.no/english/project/my-everyday-life/	https://osf.io/2hdp4
VEVO (Processing and Strengthening Online; Omgeving) ⁷²	App to assist therapists in delivering trauma-focused cognitive—behavioral therapy to children and adolescents	Specific symptoms (PTSD)	4	Children, adolescents, specialist workers	Self-guided	General population	Netherlands (Dutch)	Online text and videos, interactive games/exercises	Specific app	None listed	Restricted (contact authors)	None listed	https://www-jouwomgeving.nl.translate.google/nieuws/2017/7/18/nieuwe-module-versterken-en-verwerken-online/?_x_tr_sl=nl&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=wapp	—
Minddistrict ⁷³	Toolkit for adolescents and parents/carers with various mental health problems	Specific symptoms (very broad range)	1-4	Adolescents, parents/carers	Self-guided (or guided by specialist)	General population	UK (English)	Online text and videos, interactive games/exercises, messaging/chatbox	Internet, specific app	Paid	Restricted	None listed	https://www.minddistrict.com/catalogue/interventions?filter=Youth	—

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TABLE 2 Continued

Name (author), reference	Description	Key targets	Level of IASC intervention pyramid	Audience	Delivery	Settings	Country of development (language)	Digital elements	Platform	Fees	Access	Evidence	Intervention link	Study link
LIFT (Jaycox) ⁷⁴	CBT-based school-based program for adolescents with symptoms of anxiety, depression, or PTSD	Specific symptoms (anxiety, depression, PTSD)	3	Adolescents	Self-guided	General population	US (English)	Online text and videos, interactive games/exercises	Internet	Paid	Restricted	Non-controlled trial with 51 adolescents with anxiety, depression, or PTSD symptoms. Intervention associated with improvements in PTSD symptoms but not in depressive or anxiety symptoms	https://www.lift-program.org	https://www.science.com/science/article/pii/S0005796707001076?via%3Dihub

Note: CBT = cognitive-behavioral therapy; EMDR = eye movement desensitization and reprocessing; IASC = Inter-Agency Standing Committee; PTSD = post-traumatic stress disorder; RCT = randomized controlled trial; TAU = treatment as usual; WHO = World Health Organization.

TABLE 3 Recommendations for the Development of New Digital Mental Health Interventions

- To develop and/or adapt interventions so that they are culturally and developmentally appropriate—ie, engaging communities affected by war and particularly young people, in locally spoken languages.
- To test interventions adequately (eg, with RCTs in war-related settings), particularly those targeting higher levels of the IASC intervention pyramid and, thus, greater severity of the conditions and greater associated risks.
- To include content on war-related issues, eg, separation from one or both parents, worry about a parent who is on a battlefield, and ongoing loss and grief.
- To consider upfront common barriers to implementation, such as cost, data protection, culpability, and digital poverty/divide.
- To consider the integration with the broader range of scalable psychosocial interventions used in humanitarian contexts.

Note: IASC = Inter-Agency Standing Committee; RCTs = randomized controlled trials.

separation from 1 or both parents, worry about a parent who is on a battlefield, or ongoing loss and grief. Of note, most interventions directly targeted young people and parents/carers and were self-guided, thereby potentially improving access to psychological support without increasing demand on typically limited and strained clinical services. As such, the interventions have the potential to enhance mental health care capacity in a cost-effective fashion.²⁴ To fulfill this premise, future studies will need to ensure efficacy and support implementation. A summary of our recommendations is displayed in Table 3.

Only a quarter of the interventions identified were formally tested for their efficacy through randomized controlled trials. Universal, low-intensity interventions (levels 1 and 2), which provide normalization messages and essential psycho-educational materials, are typically conceptualized as useful and safe, and therefore are often implemented even without a strong evidence base.¹⁹ However, only 6 of the 15 interventions at level 3 (40%) and 1 of the 10 interventions at level 4 (10%) were tested in RCTs. Because of the greater severity of the conditions targeted at higher levels of the IASC intervention pyramid and greater associated risks, it is crucial to further test digital mental health interventions before large-scale implementation.

With regard to targeted interventions that are either self-guided or guided by non-specialist workers (level 3), there is initial evidence in adults that self-guided interventions may be effective in reducing PTSD symptoms and comorbid depressive and anxiety symptoms.⁷⁵ However, it is unknown whether the findings generalize to children and adolescents, and specifically those affected by war. In addition, there is evidence in adults to suggest that self-guided interventions for depression may lead to smaller improvement when compared to guided interventions.⁷⁶ Therefore, it is important also to develop new digital mental health interventions involving non-specialist workers already working with children and adolescents (eg, teachers,

nurses, etc). Building on the task-shifting paradigms frequently used in LMIC countries,^{24,77,78} these interventions could boost the delivery of targeted and guided interventions even when the local specialist clinical capacity is limited.

With regard to targeted interventions that are guided by specialist workers (level 4), preliminary evidence in adults suggests that such interventions might be beneficial for general⁷⁹ and trauma-related psychopathology.⁸⁰ However, it is again unknown whether the findings generalize to children and adolescents affected by war. Ongoing trials of specialist-guided digital mental health interventions for trauma-related psychopathology in children and adolescents (eg, Smith *et al.*⁸¹) will make an important contribution to the field.

Overall, there remain many open questions about the efficacy of digital mental health interventions for children and adolescents affected by war, including effects in controlled trials, non-inferiority to face-to-face interventions, digital placebo effects, optimal levels of guidance, cost-effectiveness, adverse events, mechanisms of change, and predictors of efficacy and dropout. Future research will require closer collaboration among clinicians, app developers, statisticians, young people, and their families.

Beyond the focus on efficacy, it is important to consider potential barriers to implementation of digital mental health interventions⁸² to maximize their dissemination in relevant settings.⁸³ Common barriers to the dissemination of digital mental health interventions, such as cost, data protection, and culpability, are also relevant here.⁸⁴

There are also several compounded challenges regarding the appropriateness or acceptability of, and engagement with, existing digital interventions. It is unclear whether existing interventions are appropriate to the mental health needs of children and adolescents affected by war. First, the majority of interventions identified (80%) were not developed in the context of war and/or displacement, and those

that have been developed in relevant settings are low-intensity interventions (lower levels of the IASC intervention pyramid) and untested. Three additional interventions (at higher levels) were developed in the context of natural disasters, but their generalizability to the context of war and/or displacement is unclear because of the differences in traumatic experiences (non-interpersonal and acute vs interpersonal and chronic, respectively) and related clinical presentations^{8,85} and in the presence of local support infrastructures.¹⁹ Second, most interventions were not culturally or linguistically adapted to the relevant contexts. Less than 10% of the interventions were developed in LMIC countries in which war and/or displacement typically occur. Furthermore, most interventions are not available in languages other than English, which is not fluently spoken in many areas affected by war and/or displacement. Future work will need to focus on strategies for efficiently translating—both linguistically and culturally—well-tested interventions, with attention to retaining the effective functions of the interventions,⁸⁶ if the interventions are to cross national and regional boundaries to address the needs of young people in diverse parts of the world.

Future work will also need to more directly target uptake and continued engagement, which are typically low for digital mental health interventions^{18,87,88} and are recognized as a specific challenge in trauma-exposed individuals.⁸⁹ Only a small minority of interventions were specifically co-designed and co-produced with children and adolescents. However, the creation of psycho-educational messages and interventions for children and adolescents has to be responsive to the particular developmental needs of these age groups, the language that they use, their ways of conceptualizing mental health problems, and their preferences for interventions.⁹⁰ To maximize engagement, co-design and co-production should be recognized as a necessary component of new digital mental health interventions.⁹¹ Furthermore, most interventions identified relied on online text or videos to deliver their content, simply digitizing content that was previously available in leaflets or books. This is useful because of the wealth of information available in these formats. It may even be necessary in contexts in which digital poverty makes access to more complex digital resources impossible. However, there may be further opportunities to engage the audience and to increase adoption of the interventions through interactive features, such as games/exercises or messaging/chatbot.⁹²

The development and implementation of digital mental health interventions for war-affected children and adolescents must be integrated within the broader range of scalable psychosocial interventions used in humanitarian

contexts. Current preventative psychological and social interventions do not show evidence of efficacy in children and adolescents affected by humanitarian crises.⁹³ In contrast, treatment interventions in the same contexts show some evidence of efficacy for PTSD but not for depression or anxiety.⁹⁴⁻⁹⁶ In particular, there is initial evidence for the efficacy of group interventions for children and adolescents with PTSD.⁹⁷⁻¹⁰² At the same time, trauma-focused evidence-based treatments, such as trauma-focused cognitive-behavioral therapy (TF-CBT) or eye movement desensitization and reprocessing (EMDR), have been demonstrated to be effective in children who have experienced war trauma.¹⁰³ Although they are normally delivered in person, they can be adapted for online and remote delivery to children and their families (TF-CBT: <https://tfcbt.org/telehealth-resources/>; EMDR: <https://globalchildemdralliance.com>). Digital technologies have the potential to significantly expand the delivery of such interventions⁸³ through both self-guided and non-specialist-guided interventions that can reach children, adolescents, and their families at convenient times and places. However, it is necessary to thoroughly evaluate the new digital technologies to ensure that they do not inappropriately divert resources from alternative, non-digital approaches.²⁹

Major public health emergencies, such as those triggered by war, can provide both the impetus and the opportunity to innovate and to advance existing health care systems. Our review of the literature did not find digital mental health interventions that have a sufficient evidence base to be readily implemented in current conflict areas, including Ukraine. To realize the potential of digital mental health interventions for children and adolescents affected by war, future work will need to address the development and implementation challenges highlighted by our review.

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