Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Post-Crisis Health Reality and Wellbeing of Children Within Syria: A Scoping Review of Research from 2012 to 2024	1
ABSTRACT			
Structured summary	2	Background Syrian children, among the most vulnerable groups, have faced profound physical and psychological consequences due to the protracted conflict. This review assesses the health and well-being of children living within Syria, with particular attention to internally displaced populations (IDPs). Objectives To synthesize research on child health in Syria from 2012 to 2024, identify key health challenges, assess study characteristics and geographical distribution, and highlight gaps to inform future policies and interventions. Design We conducted a scoping review in December 2024 using the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews) methodology. We searched five academic databases (Medline Ovid, PubMed, Scopus, Web of Science, and Global Health) and selected studies published between January 2012 and December 2024. The search strategy followed the JBI Population–Concept–Context framework. Eligible studies included primary and secondary research, published in English or Arabic, that examined the health of children under 19 years old living within Syria in the context of the ongoing conflict. Grey literature was also retrieved from major organizational repositories (e.g., WHO, UNICEF, MSF, SAMS). Results A total of 1,189 records were retrieved, with 647 remaining after removing duplicates. After screening, 30 studies met the inclusion criteria. Most were observational, including cross-sectional (63.3%) and retrospective cohort (26.7%) designs. Surveys and medical records were the main data sources; oral examinations were common in dental studies, while anthropometry, blood tests, and interviews were less frequent. Data sources varied significantly by region ($p < 0.001$), with government-controlled areas relying on state institutions and non-government-controlled areas drawing on humanitarian data. Due to substantial heterogeneity, meta-analysis was not feasible. Notably, 80% of studies reported no external funding. Conclusion This review highlights major research gaps in child health within Syria, particularly among IDPs and in underserved regions. Most studies were observational, unfunded, and regionally concentrated, limiting broader applicability. Despite these constraints, this is the first comprehensive synthesis of health research focused on children within Syria, providing a foundation for future research, policy action, and targeted humanitarian	2

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		interventions in conflict-affected settings.	
INTRODUCTION			
Rationale	3	The rationale for conducting this scoping review is rooted in the extensive and prolonged impact of the Syrian conflict on children's health and well-being. As noted in the introduction, thirteen years into the Syrian crisis, the conflict has placed severe strain on the country's health system, exacerbated by economic deterioration and large-scale displacement. Despite increased research into health outcomes post-crisis, only 34% of the literature published between 2011 and 2019 specifically focused on the health of Syrians residing within Syria, with a notable gap in studies related to child health and maternal health. This highlights a critical shortfall in research and the need for a more comprehensive examination of child health issues. The review aims to fill this gap by systematically mapping out existing studies on the health and well-being of children affected by the conflict within Syria, including those who are internally displaced persons (IDP). The primary objective is to document health challenges, identify research gaps, and highlight the geographical disparities in child health research. We anticipated that the existing literature on child health in post-crisis Syria would be highly heterogeneous in scope, methodology, and focus, while also being limited in both quantity and quality. Given these constraints, we conducted a scoping review to systematically map the body of research in this field, analyze prevailing trends, and identify critical gaps in knowledge.We anticipated that the existing literature on child health in post-crisis Syria would be highly heterogeneous in scope, methodology, and focus, while also being limited in both quantity and quality. Given these constraints, we conducted a scoping review to systematically map the body of research in this field, analyze prevailing trends, and identify critical gaps in knowledge.	3-4
Objectives	4	Under the previous described circumstances, the main aims of this scoping review are: To document the health status of the Syrian children within Syria including IDP To draw a clear picture of the obstacles facing children life and drag attentions to the poor reality of childhood in Syria. To determine the study characteristics, study types and designs and contents To identify gaps in the existing literature on child health research in Syria. This review will help guide the upcoming research in the future and implementing effective interventions in the field of child health and protection.	4
METHODS			

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Protocol and registration	5	In December 2024, we conducted a scoping review of articles focused on the health of Syrian children living within Syria during the years of war. The review was carried out using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses—Extension for Scoping Reviews (PRISMA-ScR) methodology, Registered on 16/01/2025 in PROSERO, number: CRD42025634285.	4
Eligibility criteria	6	Inclusion criteria: ● Studies on Syrian children (<19 years) affected by the conflict. ● Research published between January 2012 – December 2024. ● Quantitative, qualitative, and mixed-methods studies (systematic reviews, observational studies, cross-sectional surveys, cohort studies). Exclusion criteria: ● Studies not focusing on Syrian children. ● Articles published before 2012 or not in English/Arabic. ● Editorials, letters, case reports, and conference proceedings.	4-5
Information sources*	7	● Databases searched: Medline Ovid, PubMed, Scopus, Web of Science, Global Health. ● Grey literature sources: WHO, UNICEF,and several non-governmental organizations (NGOs) such as Save the Children, Médecins Sans Frontières (MSF), and the Syrian American Medical Society (SAMS).	4-5
Search	8	The search strategy followed the PCC framework (Population, Concept, Context) and included MeSH terms and keywords for child health in Syria. (Full search strategy included in supplemental appendix S2). Example: Pubmed Search Strategy (Literature Search performed: 2025/1/15, by two researchers) Syria[Mesh] OR Syrian Child[Mesh] OR Children OR Pediatric OR Adolescen[Mesh] OR Infant[Mesh] Internally Displaced Persons[Mesh] OR war-affected OR post-conflict OR humanitarian crisis 1 AND 2 3 OR 4 Wounds and Injuries[Mesh] OR Trauma Violence[Mesh] OR Abuse OR War-related injuries Malnutrition[Mesh] OR Undernutrition OR Wasting OR Stunting OR Severe Acute Malnutrition OR Nutritional Deficiencies OR Food Insecurity Micronutrient Deficiencies OR Iron Deficiency Anemia OR Vitamin Deficiency Communicable Diseases[Mesh] OR Infectious Diseases OR Diarrhea OR Respiratory infections OR Tuberculosis[Mesh] OR Measles[Mesh] OR Polio[Mesh]	6

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		OR Leishmaniasis[Mesh] Vaccine-preventable diseases OR Outbreak Noncommunicable Diseases[Mesh] OR Chronic Disease OR Cardiovascular Disease OR Diabetes[Mesh] OR Hypertension OR Asthma[Mesh] OR Epilepsy Mental Health[Mesh] OR Psychological Stress[Mesh] OR Depression[Mesh] OR Anxiety Disorders[Mesh] OR PTSD OR Post-Traumatic Stress Disorder[Mesh] Oral Health[Mesh] OR Dental Caries[Mesh] OR Gingivitis 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 Health Services Accessibility[Mesh] OR Healthcare Utilization OR Healthcare Disparities OR Barriers to Care Humanitarian Aid[Mesh] OR Relief Work OR Emergency Medical Services 5 AND 15 18 AND (16 OR 17) Limit 19 to: English Language, Humans, Child (birth-18 years), Year = 2012/1/1 - 2024/12/31	
Selection of sources of evidence†	9	Two researchers independently reviewed all titles, abstracts, and full-text articles, extracting relevant data. In cases of disagreement or uncertainty, they consulted a third researcher to review the content and make a final decision on contentious articles. The main review team, consisting of seven authors (SH, FA, LK, IH, RK, RA, and LZ), collaboratively discussed initial findings and resolved any disagreements between reviewers, ultimately agreeing on the publications for full-text review. PRISMA flow diagram included in the review (shows study selection process).	6
Data charting process‡	10	Data extraction was done in duplicate using a predefined template. Extracted data included: Study location, methodology, intervention components, demographics, outcomes, key findings, funding sources, and affiliations. Any disagreements were resolved by a third reviewer.	8-13
Data items	11	Data items extracted: ● Study characteristics: Year, author, affiliation. ● Methodology: Study design, intervention type. ● Population details: Age, region, sample size. ● Health outcomes measured.	8-10
Critical appraisal of individual sources of evidence§	12	A quality assessment was conducted to evaluate study reliability and limitations. Due to the heterogeneous nature of included studies, formal risk of bias assessment was not applicable.	Click here to enter text.
Synthesis of results	13	Health focus (mental health, communicable diseases, oral health, malnutrition). Geographical distribution (government vs. non-government-controlled areas). Methodological trends (observational vs. interventional studies).	8-14
RESULTS			
Selection of	14	1189 records identified,	8-9

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sources of evidence		537 records remained after duplicates were removed, 51 full-text articles reviewed, 30 articles included in final synthesis. (PRISMA flow diagram provided).	
Characteristics of sources of evidence	15	Studies varied in methodology, location, and health focus. 68.1% of studies were in government-controlled areas, 77.1% were observational studies. Funding was limited (only 27.5% of studies received financial support). Table 2	14-20
Critical appraisal within sources of evidence	16	Formal critical appraisal was not conducted, but study limitations were noted	Click here to enter text.
Results of individual sources of evidence	17	Results were thematically grouped in Table 3, summarizing key findings on: Mental health and PTSD prevalence. Childhood malnutrition rates. Oral health deterioration. Gaps in research on non-communicable diseases. Non-communicable diseases and child injuries remain understudied	14-20
Synthesis of results	18	The results are categorized into the following key thematic areas: physical trauma and injuries, mental health disorders, malnutrition, non-communicable diseases (NCDs), communicable diseases (CDs), and oral health concerns. Each theme provides a comprehensive analysis of the identified health challenges affecting children in post-crisis Syria, drawing on the extracted evidence to highlight prevalence patterns, risk factors, and healthcare implications.	8-20
DISCUSSION			
Summary of evidence	19	This review offers a comprehensive mapping of child health research in Syria, highlighting critical gaps, particularly in general pediatric health and conflict-related health outcomes. The findings underscore the need for further research to address these gaps and inform evidence-based interventions.	21-29
Limitations	20	Discuss the limitations of the scoping review process.	29-30
Conclusions	21	Given the geographic constraints, heterogeneity, and moderate quality of available evidence, a precise analysis of specific child health parameters in Syria remains challenging. However, this review makes a valuable contribution to the literature on child health and rights violations in conflict settings. The findings highlight methodological, financial, and logistical barriers to research in conflict zones, along with significant gaps in medical research, particularly concerning children within Syria, conflict-affected areas, and internally displaced populations (IDPs). Despite these limitations, this is the first review to explicitly examine the post-crisis health realities of children in Syria.	30
FUNDING			

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Funding	22	The authors confirm the independence of this research completely from any governmental or non-governmental authorities or local /international organizations, and the research is self-funded by the authors.	31

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