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Post-traumatic Stress Disorder in Children after Discharge from the Pediatric Intensive Care Unit: A Scoping Review

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ADMINISTRATIVE INFORMATION**Support** - grant no. 21PJ055.**Review Stage at time of this submission** - Data analysis.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY2023110068

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 November 2023 and was last updated on 17 November 2023.

INTRODUCTION

Review question / Objective To systematically investigate the prevalence of PTSD, tools used to measure PTSD, and risk factors of PTSD in children following PICU discharge through a scoping review.

Background It is known that children may develop post-traumatic stress disorder (PTSD) after being discharged from the Pediatric Intensive Care Unit (PICU); however, research on this topic remains limited. This study aimed to systematically investigate the prevalence of PTSD, tools used to measure PTSD, and risk factors of PTSD in children following PICU discharge through a scoping review.

Rationale The "rationale" for the study on the potential development of Post-Traumatic Stress Disorder (PTSD) in children after discharge from the Pediatric Intensive Care Unit (PICU) explains

why this research is being conducted. It underscores the limited existing research in the field, specifies the study's objectives, emphasizes its significance, and mentions the use of a systematic review approach to address knowledge gaps in the research domain.

METHODS

Strategy of data synthesis In this study, the strategy of data synthesis involved employing a narrative descriptive synthesis approach to analyze and summarize the findings derived from the scoping review. Given the diverse nature of the included studies, characterized by variations in inclusion criteria, study designs, assessment tools, post-discharge follow-up duration, and outcomes, a decision was made against conducting a pooled analysis. Instead, the researchers opted for a narrative approach, which allows for a qualitative exploration and presentation of the synthesized data. This method enables the organization and

discussion of patterns, themes, and variations observed across the studies, providing a comprehensive overview of the prevalence of PTSD, tools used for measurement, and associated risk factors in children following discharge from the Pediatric Intensive Care Unit (PICU). The choice of a narrative descriptive synthesis aligns with the scoping review's aim to offer a broad understanding of the available evidence in this specific research domain.

Eligibility criteria Inclusion Criteria:

Studies included in this systematic review encompass a temporal range up to September 2023, inclusive. The review focuses on articles written in English or Chinese to ensure linguistic consistency and accessibility. Included studies must fall under the category of medical or psychological articles, employing qualitative or quantitative research methodologies, and may include observational or interventional designs. The primary or secondary outcomes of interest in the articles should be related to Post-Traumatic Stress Disorder (PTSD). The targeted population comprises patients under 18 years old who were admitted to the Pediatric Intensive Care Unit (PICU). Additionally, studies included in this review should have a follow-up duration of at least 1 week to allow for the examination of longer-term PTSD outcomes.

Exclusion Criteria:

Studies conducted after September 2023 will be excluded from this review. Additionally, articles not written in English or Chinese will not be considered. Non-primary literature, such as case reports, case series, reviews, conference papers, meta-analyses, and commentary articles, will be excluded from the analysis. Articles lacking objectives or outcomes specifically related to PTSD will be excluded.

Source of evidence screening and selection

Search Methods

Using key search descriptors, databases were searched, including PubMed, Web of Science, Ovid, ScienceDirect, Springer, Scopus, CNKI, and WANFANG. An example keyword search strategy from PubMed is presented in Table 3.

Study Selection

All identified article references were imported into the EndNote X9 citation management software (Thomson Reuters, Philadelphia, PA, USA). Subsequently, one researcher conducted duplicate removal and independently assessed the articles based on their titles and abstracts to gauge their relevance to the research question (Figure 1). Full-text articles were then retrieved and independently screened by two researchers before undergoing a

joint review to make the final decisions on their inclusion in the scoping review.

Following the inclusion and exclusion criteria, a considerable number of articles were deemed ineligible (860), due to inappropriate study subjects (469), inappropriate research setting (225), and being abstract-only publications (104) or duplicates (62). A total of 87 papers were chosen for a thorough review. Of these, 56 publications were excluded due to inappropriate study subjects (30), inappropriate research setting (19), and being abstract-only publications (4) or duplicates (3). Seven further articles were discovered through alternative sources. Ultimately, 31 articles were incorporated into this review. Figure 1 shows an illustration of the literature search process.

Data management Data Collection

Standardized data collection forms were created by the research team. Two reviewers independently extracted and compared the data. The abstract information encompassed details such as the author, publication year, study location, research design, assessment tools, and follow-up time. Table 4 summarizes the included studies and provides insights into the attributes and outcomes of each study.

Quality Assessment

An assessment of the quality of the studies included in this review was conducted using the Mixed Methods Appraisal Tool (MMAT) (Souto et al., 2015). The MMAT serves as a valuable quality assessment instrument applicable to a range of study types, including quantitative, qualitative, and mixed-method research. Various factors, such as incomplete reporting, which hinders reproducibility and methodological transparency, as well as potential sources of selection bias, such as low response rates (<60%), trial contamination, measurement errors, etc., can contribute to lower quality ratings. The MMAT provided a single quality assessment tool for the evaluation of all included studies. Although the MMAT was employed to assess study quality, no studies were excluded solely based on their scores.

Data Analysis

We employed a narrative descriptive synthesis approach to summarize the findings. Given the diversity in the study inclusion criteria, study designs, assessment tools, post-discharge follow-up duration, and outcomes, conducting a pooled analysis was deemed unsuitable.

Language restriction English and Chinese.

Country(ies) involved China, Malaysia, Australia.

Keywords pediatric post-traumatic stress disorder; pediatric intensive care unit; scoping review; risk factors; mental health.

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