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A Scoping Review Priori Protocol of RSV Immunization Coverage and Challenges Among Infants in Türkiye: Addressing the Limitations of Open-Access Databases and the Role of Gray Literature in Advancing Research

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Abstract

This scoping review aims to map the available evidence on RSV immunization coverage and challenges among infants aged 0–24 months in Türkiye, addressing gaps caused by limited access to paid academic databases and underutilization of gray literature. Using a structured search strategy guided by PRISMA-ScR, the review will include both peer-reviewed and gray literature in English and Turkish, sourced from PubMed, national health platforms, and gray literature databases. The review will highlight existing coverage data, implementation barriers, and the value of including nontraditional sources to strengthen the evidence base and inform future research and policy on RSV prevention in Türkiye.

Attachments

DOCX

Scoping Review Proto...

38KB

Materials

Appendix 1 Search Strategy PubMed 03.23.2025

	#5			Search: **#1 AND #2 AND #3 AND #4**	1	10:29:40
	#4			Search: **"respiratory syncytial virus vaccines"[MeSH Terms] OR "respiratory syncytial virus vaccines*"[tiab]**	1,255	10:28:35
	#3			Search: **"Respiratory Syncytial Virus, Human"[Mesh] OR "Respiratory Syncytial Virus Vaccines"[Mesh] OR "respiratory syncytial virus immune globulin intravenous" [Supplementary Concept] OR "Respiratory Syncytial Viruses"[Mesh] OR "Respiratory Syncytial Virus"[TIAB] OR "RSV"[TIAB] OR "Human Respiratory Syncytial Virus"[TIAB] OR "Respiratory Syncytial Virus Infection"[TIAB] OR "RSV Infection"[TIAB] OR "Respiratory Syncytial Virus Vaccine"[TIAB] OR "RSV Vaccine"[TIAB] OR "Respiratory Syncytial Virus Immunization"[TIAB] OR "RSV Immunization"[TIAB] OR "Respiratory Syncytial Virus Immune Globulin"[TIAB] OR "RSV Immune Globulin"[TIAB] OR "Respiratory Syncytial Viruses"[TIAB]**	25,856	10:28:20
	#2			Search: **"Turkey*"[tiab] OR "Türkiye*"[tiab] OR "Turkiye*"[tiab] OR "Turk*"[tiab]**	77,348	10:28:06
	#1			Search: **"Infant"[Mesh] OR "Infant*"[tiab]**	1,452,457	10:27:52

Research Question:

1 In infants aged 0-24 months in Türkiye, what are the challenges and coverage rates of RSV immunization, and how do the limitations of open-access databases and the inclusion of gray literature affect the evidence base on these issues?

Objectives:

2 To identify and synthesize available literature on RSV immunization coverage and challenges among infants aged 0-24 months in Türkiye, using open-access academic databases and gray literature sources, due to the limited availability of free-to-access academic research databases.

Background

3 Respiratory syncytial virus (RSV) is an enveloped RNA virus which causes acute lower respiratory infections (ALRI) and bronchiolitis in young children [1]. And it is responsible for more than 3 million hospitalizations and over 65000 deaths globally each year [2]. Although over 80% of infants have experienced at least one RSV infection by the age of 2 years, infants in their first year of life are more likely to experience a severe infection requiring hospitalization [3]. RSV-related complications other than bronchiolitis include pneumonia, acute otitis media and conjunctivitis [4]. Despite over 50years of effort, a licensed vaccine is still not available for RSV [5]. Specific anti-RSV antibodies are positive in the majority (87%) of infants aged 18 months and in all children aged three years [6]. Currently, there is no effective and safe medication or vaccine for RSV infections, and infection with this virus continues to be a clinical problem worldwide. Prophylaxis with palivizumab, which is an RSV-neutralizing monoclonal antibody and administered in high-risk groups in epidemic seasons, is the only preventive method [7]. Respiratory syncytial virus infection occurs most commonly in children aged below 24 months. Its prevalence is 5.2/1000 (26/1000 at the age below 1 month). The first six months is the critical period and the most severe disease is observed during these months. Hospitalization occurs with a 3-fold higher frequency in preterm babies [8]. More than 20% of hospitalizations due to RSV occur in the first 2 months, more than 50% occur in the first three months, and more than 70% occur in the first six months [9].

In Turkey, the prevalence of RSV was found as 37.9% in 671 patients aged below 24 months who were hospitalized because of LRTI; babies aged between 0 and three months constituted 38.3% of these patients. In addition, RSV was found to be positive in 41% of the cases of acute bronchiolitis and in 34% of the cases of pneumonia [3]. In a multi-center study conducted by the Turkish Neonatal Society (TNS), RSV was found with a rate of 16.9% in 3464 patients aged below 24 months who had LRTI and

were not receiving prophylaxis, and it was observed that RSV peaked in babies aged between 0 and 3 months and between the months of January and March [10]. The prevalence of RSV was found as 19.6% in newborns who were hospitalized because of acute LRTI in a study conducted by the TNS TÜRKNİCU-RSV Study Group in 2016 in 44 neonatal intensive care units; term babies constituted 68.4% of these patients and the RSV-related mortality rate was 1.2% [11].

Expanded Rationale for the Scoping Review on RSV Vaccination in Türkiye Among Infants

Respective research on SRV immunization in Turkiye are still limited to academics in the major academic databases and through the grey literature in the Turkish and English languages.

Regarding the Health and Biomedical Library Services HBLS of Brown University, the guideline Evidence Synthesis in the Health Sciences, among the academic databases, only PubMed is freely accessible and includes peer-reviewed biomedical literature. Other major academic databases (Scopus, Global Health, Embase, CINAHL, Web of Science) require paid access, limiting comprehensive systematic searches. To ensure validity, at least one academic database (PubMed) will be used as a core source. Whereas Gray Literature Helps reduce publication bias by including non-commercially published research. Includes theses, dissertations, clinical trials, conference proceedings, preprints, and government reports. Reliable sources for grey literature include: ClinicalTrials.gov (RSV vaccine trials) WHO IRIS (global RSV immunization policies), Google Scholar & Mednar (deep
web sources) [12]. The aim of this review is to provide a comprehensive mapping that addresses the knowledge gap. This review will consolidate available research on RSV immunization in Türkiye, using both academic and gray literature. Accessibility-Driven Approach: The reliance on open-access databases ensures that findings can be replicated and accessed by policymakers, researchers, and healthcare providers. Additionally, identifying gaps in vaccine coverage and challenges can inform national immunization strategies.

4 **Targeted Databases for the scoping review:**

Health-based databases:

PubMed (https://pubmed.ncbi.nlm.nih.gov):
For peer-reviewed articles related to RSV immunization, including studies from Turkey.

Policy-based database and reports:

Ministry of Health of the Republic of Turkey (https://www.saglik.gov.tr):
For national vaccination guidelines, policies, and data on RSV immunization in Turkey.
Turkish Neonatal Society Guidelines (https://neonatology.org.tr/en/guidelines)
World Health Organization IRIS (WHO) (**https://iris.who.int/**
): For global and regional data on immunization policies and coverage, including RSV.

Other Open-Access Grey Literature

Google Scholar

Clinicaltrial.gov

5 Search Strategy:

To build up the Search Strategy & Selection Process: Literature selection will follow PRISMA-ScR

guidelines, ensuring systematic screening. Open-access sources will be prioritized to enhance accessibility and transparency. Two independent reviewers will assess sources, resolving disagreements through consensus or a third reviewer.

5.1 **PubMed Search Strategy[1]**

A logbook for documenting theprocess of searching through each database was prepared by the researcher. Starting with analyzing the aspects of the research question. Organizing and prioritizing all the aspects relying on PICO (Problem/Population – Intervention– Comparison - Outcome) format. The respective search blocks are built through two components (Mesh term and the Tie-up terms).

	Population	Intervention	Comparison	Outcome
	Infants aged 0-24 months in Türkiye	RSV immunization (vaccination)	Not applicable (since this is a scoping review focused on coverage, rather than a comparative analysis)	Immunization coverage

PICO Format

Search Block:

MeSH terms

	#1 Infants	"Infant"[Mesh]
	2 # Turkey	NA
	3 # RSV	"Respiratory Syncytial Virus, Human"[Mesh] OR "Respiratory Syncytial Virus Vaccines"[Mesh] OR

		"respiratory syncytial virus immune globulin intravenous" [Supplementary Concept] OR "Respiratory Syncytial Viruses"[Mesh]
	4 # Respiratory Syncytial Virus Vaccines	"respiratory syncytial virus vaccines"[MeSH Terms]

Search Block - MeSH Terms

TIAB term

	#1 Infants	"Infant*"[tiab]
	2 # Turkey	"Turkey*"[tiab] OR "Türkiye*"[tiab] OR "Turkiye*"[tiab] OR "Turk*"[tiab]
	3 # RSV	"Respiratory Syncytial Virus*"[TIAB] OR "RSV*"[TIAB] OR "Human Respiratory Syncytial Virus*"[TIAB] OR "Respiratory Syncytial Virus Infection*"[TIAB] OR "RSV Infection*"[TIAB] OR "Respiratory Syncytial Virus Vaccine*"[TIAB] OR "RSV Vaccine*"[TIAB] OR "Respiratory Syncytial Virus Immunization*"[TIAB] OR "RSV Immunization*"[TIAB] OR "Respiratory Syncytial Virus Immune Globulin*"[TIAB] OR "RSV Immune Globulin*"[TIAB] OR "Respiratory Syncytial Viruses*"[TIAB]
	4 # Respiratory Syncytial Virus Vaccines	"respiratory syncytial virus vaccines*"[tiab]

Search Block - TIAB Terms

Combining MeSH and Tiab Terms to build the search block:

1 #

"Infant"[Mesh] OR "Infant*"[tiab]

2 #

"Turkey*"[tiab] OR "Türkiye*"[tiab] OR "Turkiye*"[tiab] OR "Turk*"[tiab]

3 #

"Respiratory Syncytial Virus, Human"[Mesh] OR
"Respiratory Syncytial Virus Vaccines"[Mesh] OR "respiratory
syncytial virus immune globulin intravenous" [Supplementary Concept] OR
"Respiratory Syncytial Viruses"[Mesh] OR "Respiratory Syncytial
Virus*"[TIAB] OR
"RSV*"[TIAB] OR
"Human Respiratory Syncytial Virus*"[TIAB] OR
"Respiratory Syncytial Virus Infection*"[TIAB] OR "RSV Infection*"[TIAB] OR
"Respiratory Syncytial Virus Vaccine*"[TIAB] OR "RSV Vaccine*"[TIAB] OR
"Respiratory Syncytial Virus Immunization*[TIAB] OR "RSV Immunization*"[TIAB] OR
"Respiratory Syncytial Virus Immune Globulin*"[TIAB] OR "RSV Immune Globulin*"
[TIAB] OR
"Respiratory Syncytial
Viruses*"[TIAB]

4 #

"respiratory
syncytial virus vaccines"[MeSH Terms] OR "respiratory syncytial virus
vaccines*"[tiab]

5 #

1 # AND 2 # AND 3 # AND 4 #

5.2 **Policy-Based Database and Other Grey Literature Search Strategy:**

The search for grey literature will be conducted using a combination of broad and specific keywords, such as RSV, respiratory syncytial virus, vaccine, immunization, and respiratory infections. Boolean operators (AND, OR, NOT) will be employed to refine the search and combine relevant terms. Filters for document type, region, year, and language will be applied to limit results to the most relevant publications. The Advanced Search function will be utilized to combine multiple criteria for a more targeted approach. Subject headings and synonyms will also be considered to expand the search. Additionally, citation tracking will be used to identify related studies and grey literature. This approach will ensure a comprehensive and focused search of grey literature relevant to the review topic. The strategy search will be as the following steps:

1. **Using Keywords**:

- Starting with broad keywords (e.g., RSV, respiratory syncytial virus, immunization, vaccines)
- Combining terms using AND, OR, and NOT for more precise searches.

Example:

- "RSV" AND "vaccine"

- "respiratory syncytial virus" AND "immunization"

2. **Using Filters**:

- Filtering by Document Type (e.g., reports, guidelines, publications).
- Filter by region or country to narrow down the results (e.g., Turkey).
- Filtering by Year for recent publications or studies.

Advanced Search:

- Use the **Advanced Search** feature (if available) to combine multiple criteria:
- Keywords
- Date range
- Document type
- Author or publisher
- Language (e.g., English, Turkish)

3. **Checking Subject Headings**:

- Searching for specific subject terms such as "Vaccine Development," "Immunization Coverage,"
  "Viral Infections" to focus on relevant topics.

4. **Citation Search**:

- Using the Cited by feature to find publications that have cited specific articles of interest.

5. **Using Synonyms**:

- Example, instead of just "RSV," trying to use "Respiratory Syncytial Virus", or combining it with
  related terms like "bronchiolitis" or "viral pneumonia." In both English and Turkish languages.

Inclusion and exclusion criteria

6 **Inclusion Criteria:**

This scopingreview will include studies that focus on RSV immunization, vaccination coverage, and challenges among infants aged 0-24 months in Türkiye, published in English or Turkish, regardless the date of publication. Studies should be accessible through open-access platforms or gray literature sources such as government reports, preprints, and other non-commercial publications. Only those that directly address immunization, vaccination coverage, or related challenges will be included.

Exclusion Criteria:

Studies that focus on populations outside of infants, those unrelated to RSV immunization, or not addressing vaccination coverage or challenges will be excluded. Research accessed through paid academic databases (e.g., McMaster, Ovid) or those requiring institutional logins will also be excluded. Additionally, case reports, anecdotal evidence.

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