Burden of respiratory syncytial virus diseases among under 5 children in Sub-Saharan Africa: A systematic review and meta-analysis

Fiseha Wadilo Wada (PhD fellow)
Armauer Hansen Research Institute, Addis Ababa, Ethiopia
fisehawadilo@yahoo.com
Burden of RSV diseases among under 5 children in Sub-Saharan Africa: A systematic review and meta-analysis

• In sub-Saharan African countries, approximately 312,417 children under five died in 2016, which is 47.9% of global under five deaths attributable to lower respiratory infections.

• We conducted a systematic review and meta-analysis of case–control studies to estimate the etiological role of RSV to ALRIs in under 5 years children in sub-Saharan Africa.
Burden of RSV diseases among under 5 children in Sub-Saharan Africa: 
A systematic review and meta-analysis

• The study protocol has been registered – PROSPERO with registration code CRD42022361757
• **Inclusion and exclusion criteria**
  
  • We included studies that fulfilled our strict eligibility criteria

• **statistical analysis** were conducted using STATA version 17 software
Burden of RSV diseases among under 5 children in Sub-Saharan Africa: A systematic review and meta-analysis

Figure 1: PRISMA flow diagram showing the selection process of eligible articles for systematic review and meta-analysis

- Records identified from Databases
  - PubMed= 153
  - Google Scholar= 364
  - EMBASE= 223
  - SCOPUS= 196
  - Web of Science= 231

- Duplicate records removed (154)
  - EMBASE= 28
  - SCOPUS= 41
  - Web of Science= 35
  - PubMed= 50

- Reports excluded:
  - Reason 1 (n = 264) conducted in > 5 years children or older adults
  - Reason 2 (n = 256) conducted out of sub-Saharan African countries
  - Reason 3 (n = 347) case definition was not ALRTIs
  - Reason 4 (n = 132) not case-control study design

- Reports assessed for eligibility (n = 1,013)

- 14 studies included
Burden of RSV diseases among under 5 children in Sub-Saharan Africa: A systematic review and meta-analysis

The Pooled prevalence of RSV among controls

The Pooled prevalence of RSV among cases/ALRIs
The pooled OR was **7.04 [95% CI (4.41-11.24)]**, indicating a significant association between RSV and ALRIs in children in sub-Saharan Africa.
Burden of RSV diseases among under 5 children in Sub-Saharan Africa: *A systematic review and meta-analysis*

<table>
<thead>
<tr>
<th>Attributable fraction among the exposed (AFE)</th>
<th>population attributable fraction (PAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>85.8% [95% CI (77.3-91.1)]</td>
<td>20.2% [95% CI (16-24.1)]</td>
</tr>
</tbody>
</table>

shows clear associations between this virus and ALRI hospitalization in young children. indicates the potential for substantive reductions in the number of ALRI cases in young children using preventive measures such as vaccination.
Burden of respiratory syncytial virus diseases among under 5 children in Sub-Saharan Africa: A systematic review and meta-analysis

Fiseha Wadilo Wadno, Minyahi Tadesse Boltena, Rowleigh Howe, Fithamlak Bistegen Solomon, Adey Feleke, Tamrayeshu Seyoum, Andargachew Mulu, Adane Mihret
Thank you so much