

Caregiver Burden related to Rotavirus Gastroenteritis: methods and findings overview based on a systematic literature review

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Background

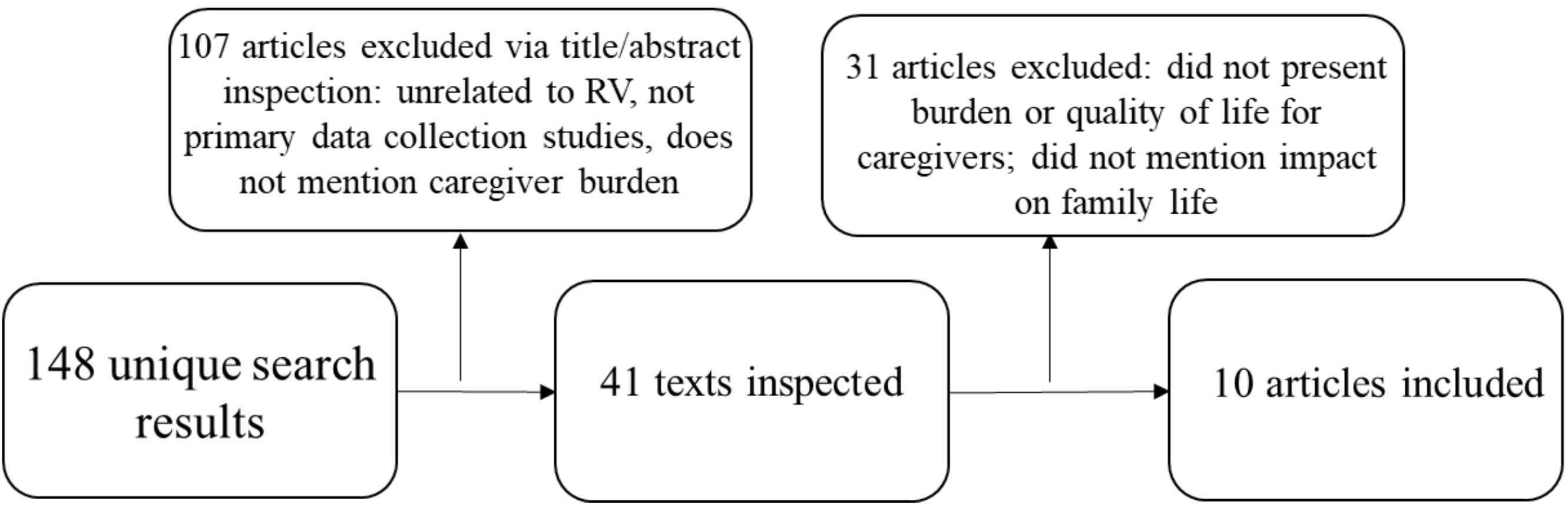
- Rotavirus Gastroenteritis (RVGE) and associated disease burden is well recognized in young children¹. However, caregiver family spillover effects have only recently been recognized. Quantifying family spillover effects is important when analyzing interventions to decrease the burden of RVGE.
- In this review, we identify the methods that have been used to quantify caregiver burden of RGE and summarize the findings..

Methods

- On June 2020, we performed a systematic literature review on caregiver and family burden of RGE using PubMed and Scopus. We selected studies that estimated or related the impact of RGE on the family via interviews, and administration of surveys or instruments. We focused on the caregiver and family's subjective experience and so included only studies that related caregiver associated disutility weights, reports, stress, or emotional outcomes. .
- The searches included the MeSH terms rotavirus infection and Rotavirus Infections/psychology and free-range terms family, caregiver, impact, utility, stress, disutility, QALY, QALYs, or burden in PubMed. In Scopus the searches included words in the title/abstract/keywords, including rotavirus, family, caregiver, impact, utility, stress, disutility, QALY, QALYs, or burden. We filtered to results in English (PubMed and Scopus) and related to Humans (PubMed).

Results

Systematic Literature Review results



Results

Table 1: Caregiver utility decrements for caring for patients with Rotavirus Gastroenteritis (RGE) obtained using the EQ-5D and the Visual Analogue Scale (VAS).

Study	Country	Place of recruitment	Baseline utility	Utility at time of RGE episode
Brisson, 2010 ^a	Canada	Outpatient clinics	Via EQ-5D: 0.95 (n=186) Via VAS: 0.81 (n=186)	Via EQ-5D: 0.88 (n=186) Via VAS: 0.73 (n=186)
Hoffman, 2011	Denmark	General Physician clinics and one Hospital	Not reported	Via EQ-5D-5L: 0.818 (n=225) Via VAS: 0.785 (n=225)
Marlow, 2015 ^b	United Kingdom	Emergency Department	Via EQ-5D-5L: 0.86 (n=48) Via VAS: 0.84 (n=48)	Via EQ-5D-5L: 0.68 (n=77) Via VAS: 0.70 (n=77)
Rochanathimoke, 2018	Thailand	Hospital	Via EQ-5D-3L: 0.96 (n=460) Via VAS: 0.97 (n=460)	Via EQ-5D-3L: 0.61 (n=460) Via VAS: 0.63 (n=460)

- a) Authors report caregiver utility 1 week, and 2 weeks after the initial encounter. Baseline utility was considered to be the utility two weeks after the outpatient encounter.
- b) Authors present results for both primary and secondary carer. For comparison with other studies, we present results for the primary carer only.

- EQ-5D and the VAS were the most used instruments to measure caregiver burden, having been used to evaluate caregiver burden in the UK, Denmark, Canada, and Thailand (Table 1). Caregiver utility at time of illness varied between 0.61 (caregivers of hospitalized children, Thailand), and 0.88 (caregivers of children enrolled at outpatient clinics, Canada).
- Caregiver burden was also measured in Spain (3), Italy (3), Belgium, France, Germany, Latvia, Poland, United States, Sweden, Taiwan and Vietnam, via stress scales (2), especially designed questionnaires (2), and interviews (2).
- RGE was found to significantly disrupt family activities, cause emotional stress and worry on caregivers of patients with RGE. Also, the impact of RGE was found to increase with the severity of RGE, and consequent changes in infant behavior and increased disruption to family routines.

Discussion

- The analyses of the utility weights suggests decreasing quality of life with increasing disease rotavirus gastroenteritis severity. Caregiver quality of life was most affected when caring for hospitalized patients, followed by caregivers surveyed in the emergency department, followed by outpatient cases.
- Utility weight decrements for caregivers of infants that visit the Emergency Department are similar to utility decrements of adults with mixed anxiety depressive disorder in the UK²;
- While caregiver burden has been studied in a variety of countries and settings, the fact that multiple methods were used hinders comparison between different countries and incorporating the results in economic models.
- Future analyses should consider multiple family members, and if/how results vary with other concerns.

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