

Integrating the Prevention and Control of Rheumatic Heart Disease into Country Health Systems: A Systematic Review



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Introduction

- Rheumatic heart disease (RHD) is a preventable chronic heart condition affecting the poorest populations around the world.
- In May 2018 the Resolution on Rheumatic Fever and Rheumatic Heart Disease was approved by the World Health Assembly.
- Ministries of Health are now committed to the eradication of RHD but require evidence-based guidance for scaling-up prevention and control.
- Historically, RHD services have run as stand-alone initiatives, but experts recommend an integrated approach.

Purpose

To determine the nature and extent of integration among RHD prevention and control programmes, and analyse how integration (or lack thereof) might affect programme success.

Methods

- English, 1 Jan 1990 – 31 July 2019.
- A health programme directed at populations at risk for Strep A infection, acute rheumatic fever, and/or RHD.
- Sufficient detail on at least 4 of the health system functions.

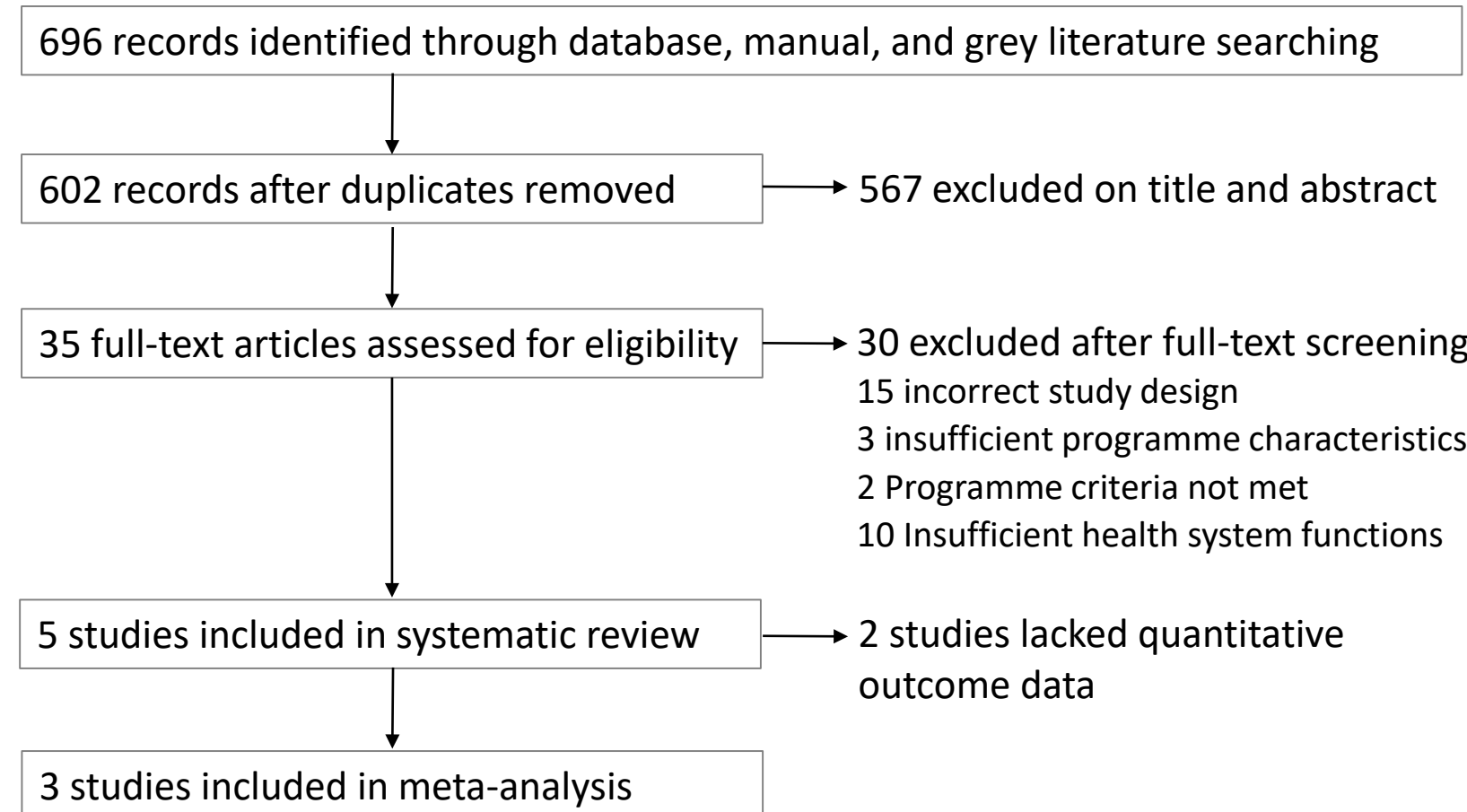


Figure 1: Flow diagram of study selection

- We used the critical health system functions described by Atun et al., to determine the extent (fully, partially, not, unknown) of integration for the included programmes.
- A random-effects meta-analysis was performed on 3 studies which measured the same outcome.

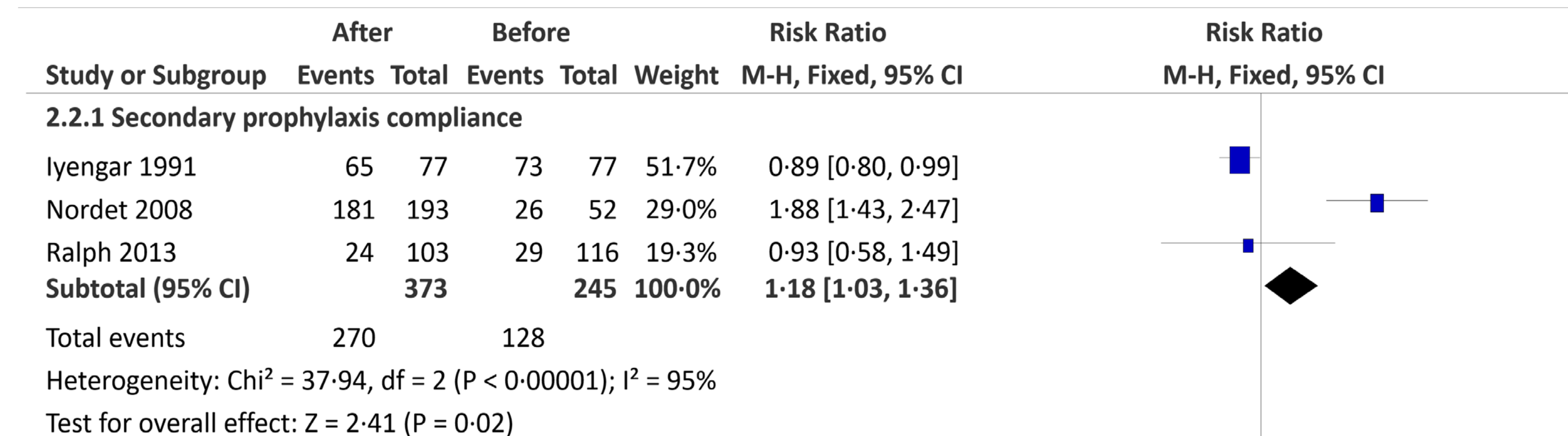
Results

	Critical health system function						Total integration score (/18)
	Stewardship & Governance	Financing	Planning	Service Delivery	Monitoring & Evaluation	Demand Generation	
Primary Prevention							
Cuba (Nordet 2008)	■	■	■	■	■	■	10
Secondary Prevention							
Australia (Ralph 2013)	■	■	■	■	■	■	10
Cuba (Nordet 2008)	■	■	■	■	■	■	10
India (Iyengar 1991)	■	■	■	■	■	■	9
Multiple countries (WHO 1992)	■	■	■	■	■	■	10
Tertiary care							
Rwanda (Kwan 2013)	■	■	■	■	■	■	9

Key

Fully integrated (score=3)	■	Partially integrated (score=2)	■
Not integrated (score=1)	■	Unknown (score=0)	■

Figure 2: The extent and nature (type of health system function) of programme integration into country health systems for the included studies. Sorted by level of prevention, each health system function received an integration score from which a composite score out of 18 was calculated. This score was similar across all the studies, meaning that none of the programmes were completely integrated into the health system across the health system functions.



Test for subgroup differences: Not applicable

Figure 3: The effect of partially integrated RHD programmes on secondary prophylaxis compliance, defined as receiving ≥80% of administered prophylaxis on a regular basis. Other outcomes were not amenable to meta-analysis.

Results

- The public sector usually took primary responsibility for financing programmes and for providing clinical care (service delivery).
- RHD programme planning was never coordinated with other disease programmes or general health services. Monitoring and evaluation was also not integrated into existing health systems.
- Demand generation was often executed separate from other health education activities (i.e. dedicated campaigns on RHD) but undertaken as part of the local government activities, making it partially-integrated.

18% Improvement in secondary prophylaxis compliance (p=0.02) among partially integrated programmes targeting secondary prevention (Figure 3).

Conclusion

- The programmes in this review were partially integrated, similar in the extent and nature of integration, and appear to be beneficial for RHD-related outcomes.
- We were not able to quantify the association between programme design, programme integration, and population health outcomes.
- This is a starting point for future RHD programmes and their implementation according to key health system functions.

Acknowledgements

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Literature Cited

- Atun R, de Jongh T, Secci F, Ohiri K, Adeyi O. Integration of targeted health interventions into health systems: a conceptual framework for analysis. *Health Policy Plan* 2010;25:104–11.
- Nordet P, Lopez R, Dueñas A, Sarmiento L, Duenas A, Sarmiento L. Prevention and control of rheumatic fever and rheumatic heart disease: the Cuban experience (1986-1996-2002). *Cardiovasc J Afr* 2008;19:135–40.
- Ralph AP, Fittock M, Schultz R, Thompson D, Dowden M, Clemens T, et al. Improvement in rheumatic fever and rheumatic heart disease management and prevention using a health centre-based continuous quality improvement approach. *BMC Health Serv Res* 2013;13:525. doi:10.1186/1472-6963-13-525.
- Iyengar SD, Grover A, Kumar R, Ganguly NK, Anand IS, Wahi PL. A rheumatic fever and rheumatic heart disease control programme in a rural community of north India. *Natl Med J India* 1991;4:268–71.
- Nordet P, WHO. WHO programme for the prevention of rheumatic fever/rheumatic heart disease in 16 developing countries: report from Phase I (1986-90). *Bull World Health Organ* 1992;70:213.
- Kwan GF, Bukhman AK, Miller AC, Ngoga G, Mucumbitsi J, Bavuma C, et al. A Simplified Echocardiographic Strategy for Heart Failure Diagnosis and Management Within an Integrated Noncommunicable Disease Clinic at District Hospital Level for Sub-Saharan Africa. *JACC Hear Fail* 2013;1:230–6. doi:10.1016/j.jchf.2013.03.006.