

## Epidemiology of *Toxoplasma gondii* Infection in Animals of the Arabian Peninsula: A Systematic Review and Meta-Analysis

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**Abstract :** Background: *Toxoplasma gondii* (*T. gondii*) is a zoonotic parasite that can be transmitted from animals to humans, with felids acting as its definitive host. Thus, understanding the epidemiology of this parasite in animal populations is vital to controlling its transmission to humans as well as to other animal groups. Objectives: This systematic review and meta-analysis aim to summarise and analyse reports of *T. gondii* infection in animal species residing in the Arabian Peninsula. Methods: It was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), with relevant studies being retrieved from MEDLINE/PubMed, Scopus, Cochrane Library, Google Scholar and ScienceDirect. All articles published in Arabic or English languages between January 2000 and December 2020 were screened for eligibility. The random effects model was used to calculate the pooled prevalence of *T. gondii* infection in different animal populations which were found to harbour this infection. The critical appraisal tool for prevalence studies designed by the Joanna Briggs Institute (JBI) was used to assess the risk of bias in all included studies. Results: A total of 15 studies were retrieved, reporting prevalence estimates from 4 countries in this region and in 13 animal species. A quantitative meta-analysis estimated a pooled prevalence of 43% in felids [95% confidence interval (CI) = 23-64%, I<sup>2</sup> index = 100%], 48% in sheep (95% CI = 27-70%, I<sup>2</sup> = 99%) and 21% in camels (95% CI = 7-35%, I<sup>2</sup> = 99%). Evidence of possible publication bias was found in both felids and sheep. Conclusions: This meta-analysis estimates a high prevalence of *T. gondii* infection in animal species that are of high economic and cultural importance to countries of this region. Hence, these findings provide valuable insight to public health authorities as well as economic and animal resources advisors in countries of the Arabian Peninsula.

**Keywords :** Arabian Peninsula, *toxoplasma gondii*, animals; meta-analysis, toxoplasmosis

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