

Table S1. Full search strategies for databases searches

Date search performed	Database	Total articles retrieved	Search string /terms and limit
20 th July 2020	Google Scholar	402	Allintitle: Coenurosis OR Cenurosis OR "Cerebral coenurosis" OR " <i>Taenia multiceps</i> " OR " <i>Coenurus cerebralis</i> " OR Ormilo
20 th July 2020	PubMed	39	((Coenurosis [Title] OR Cenurosis [Title] OR "Cerebral coenurosis" [Title] OR " <i>Taenia multiceps</i> " [Title] OR " <i>Coenurus cerebralis</i> " [Title] OR Ormilo [Title]) AND (Africa*[Title/Abstract]))
20 th July 2020	EBSCOhost	86	TI (Coenurosis OR Cenurosis OR "Cerebral coenurosis" OR " <i>Taenia multiceps</i> " OR " <i>Coenurus cerebralis</i> " OR Ormilo) OR AB (Coenurosis OR Cenurosis OR "Cerebral coenurosis" OR " <i>Taenia multiceps</i> " OR " <i>Coenurus cerebralis</i> " OR Ormilo) AND GE(Africa*)
20 th July 2020	Research4life	47	((Title combined: (Coenurosis OR Cenurosis OR "Cerebral OR coenurosis" OR " <i>Taenia</i> OR <i>multiceps</i> " OR " <i>Coenurus</i> OR <i>cerebralis</i> " OR Ormilo)) OR (Abstract:(Coenurosis OR Cenurosis OR "Cerebral coenurosis" OR " <i>Taenia multiceps</i> " OR " <i>Coenurus cerebralis</i> " OR Ormilo)) OR (Subject Terms:(Coenurosis OR Cenurosis OR "Cerebral coenurosis" OR " <i>Taenia multiceps</i> " OR " <i>Coenurus cerebralis</i> " OR Ormilo))) AND ((Geographic Locations:(Africa*)))

Table S2. Full-text articles excluded, with reasons

Article ID	Title	Author(s)	Year	DOI	Criteria for exclusion
5	Coenurosis in slab-slaughtered sheep and goats in Ngorongoro district: prevalence and predisposing factors of the disease	Miran, Miran Bushelegi	2015	10.1007/s11250-015-0903-7	Duplicate
8	High mortality associated with tapeworm parasitism in geladas (<i>Theropithecus gelada</i>) in the Simien Mountains National Park, Ethiopia	Schneider-Crease, India; Griffin, Randi H.; Gomery, Megan A.; Bergman, Thore J.; Beehner, Jacinta C.	2017	10.1002/ajp.22684	No primary data/summary statistics are presented
33	"Ormilo disease" a disorder of zebu cattle in Tanzania: bovine cerebral theileriosis or new protozoan disease?	Catalano, Deborah; Biasibetti, Elena; Lynen, Godelieve; Di Giulio, Giuseppe; De Meneghi, Daniele; Tomassone, Laura; Valenza, Federico; Capucchio, Maria Teresa	2015	10.1007/s11250-015-0805-8	As o primary data/summary statistics are presented
40	Recent Findings from University of Glasgow Provide New Insights into Veterinary Medicine (<i>Taenia multiceps</i> coenurosis in Tanzania: a major and under-recognised livestock disease problem in pastoral communities)	Not set	2019	Not found	Duplicate

Table S2. Full-text articles excluded, with reasons cont...

Article ID	Title	Author(s)	Year	DOI	Criteria for exclusion
46	Review on cerebral coenurosis in small ruminants	Gashe, Misretaw; Sewalem, Moges	2017	DOI: 10.5829/idosi.apg.2017.130.138	As no primary data/summary statistics are presented
74	Coenurosis control-break the cycle	Desta, Hiwot; Alemu, Biruk; Alemayehu, Gezahegn; Wieland, Barbara	2016	Not found	As no primary data/summary statistics are presented
106	Cerebral coenurosis in small ruminants: a review	Abera, S; Wubit, T; Nejash, A	2016	10.5455/jasa.20160409121545	Fulltext not assessible
181	Systematic review and meta-analysis of metacestodes prevalence in small ruminants in Ethiopia	Asmare, Kassahun; Sibhat, Berhanu; Abera, Mesele; Haile, Aynalem; Degefu, Hailu; Fentie, Tsegaw; Bekele, Jemere; Terefe, Getachew; Szonyi, Barbara; Robertson, Lucy J.; Wieland, Barbara	2016	10.1016/j.prevetmed.2016.05.006	As no primary data/summary statistics are presented
182	Public health and economic significance cerebral coenurosis in sheep and goat: a review	Shiferaw, Abera; Abdela, Nejash	2016	10.5829/idosi.apg.2016.7.2.103108	As no primary data/summary statistics are presented
192	Major causes of organs and carcass condemnation in small ruminants slaughtered at Luna Export Abattoir, Oromia Regional State, Ethiopia	Regassa, Alemayehu; Moje, Nebyou; Megersa, Bekele; Beyene, Desta; Sheferaw, Dessie; Debela, Etana; Abunna, Fufa; Skjerve, Eystein	2015	10.1016/j.prevetmed.2012.11.020	As no primary data/summary statistics are presented

Table S2. Full-text articles excluded, with reasons cont...

Article ID	Title	Author(s)	Year	DOI	Criteria for exclusion
214	"Ormilo disease" a disorder of zebu cattle in Tanzania: bovine cerebral theileriosis or new protozoan disease?	Catalano, Deborah; Biasibetti, Elena; Lynen, Godelieve; Di Giulio, Giuseppe; De Meneghi, Daniele; Tomassone, Laura; Valenza, Federico; Capucchio, Maria Teresa	2015	10.1007/s11250-015-0805-8	Duplicate
233	Fitness impacts of tapeworm parasitism on wild gelada monkeys at Guassa, Ethiopia	Nguyen, Nga; Fashing, Peter J.; Boyd, Derek A.; Barry, Tyler S.; Burke, Ryan J.; Goodale, C. Barret; Jones, Sorrel C. Z.; Kerby, Jeffrey T.; Kellogg, Bryce S.; Lee, Laura M.; Miller, Carrie M.; Nurmi, Niina O.; Ramsay, Malcolm S.; Reynolds, Jason D.; Stewart, Kathrine M.; Turner, Taylor J.; Venkataraman, Vivek V.; Knauf, Yvonne; Roos, Christian; Knauf, Sascha	2015	10.1002/ajp.22379	As no primary data/summary statistics are presented
241	Clinical, pathological, and molecular data concerning <i>Coenurus cerebralis</i> in Sheep in Egypt	Amer, Said; ElKhatam, Ahmed; Fukuda, Yasuhiro; Bakr, Lamia I.; Zidan, Shereif; Elsify, Ahmed; Mohamed, Mostafa A.; Tada, Chika; Nakai, Yutaka	2018	10.1016/j.dib.2017.10.070	Duplicate
243	<i>Echinococcus granulosus</i> and other intestinal helminths in semi-stray dogs in Tunisia: infection and re-infection rates	Lahmar, Samia; Sarciron, Marie-Elisabeth; Rouiss, Mondher; Mensi, Mohamed	2017	10.1017/pao.2017.21	As no primary data/summary statistics are presented

Table S2. Full-text articles excluded, with reasons cont...

Article ID	Title	Author(s)	Year	DOI	Criteria for exclusion
255	Participatory Epidemiology of <i>Coenurus Cerebralis</i> Infections in Goats and Sheep kept by Pastoralists in Ngorongoro District, Tanzania	Miran, BM; Makundi, AE	2017	Not found	As no primary data/summary statistics are presented
399	Life Science Research; New Primatology Data Have Been Reported by Investigators at Leibniz Institute for Primate Research (Fitness Impacts of Tapeworm Parasitism on Wild Gelada Monkeys at Guassa, Ethiopia)	Not set	2015	Not found	As no primary data/summary statistics are presented
498	Coprological survey of alimentary tract parasites in dogs from Zambia and evaluation of a coproantigen assay for canine echinococcosis	Nonaka, N.; Nakamura, S.; Inoue, T.; Oku, Y.; Katakura, K.; Matsumoto, J.; Mathis, A.; Chembesofu, M.; Phiri, I. G. K.	2011	10.1179/2047773211Y.0000000001	Fulltext not available

Table S2. Full-text articles excluded, with reasons cont...

Article ID	Title	Author(s)	Year	DOI	Criteria for exclusion
503	Intestinal helminths of stray dogs from Tunisia with special reference to zoonotic infections	Lahmar, Samia; Arfa, Ines; Ben Othmen, Siddik; Jguirim, Walid; Saïd, Yousra; Dhibi, Aïda; Boufana, Belgees	2017	10.1017/pao.2017.21	As no primary data/summary statistics are presented
513	Coenurosis status in Afro-Asian region: A review	Sharma, D.K.; Chauhan, P.P.S.	2006	10.1016/j.smallrumres.2005.05.021	As no primary data/summary statistics are presented
552	Taeniasis in non-descript dogs in Ngorongoro, Tanzania: Prevalence and predisposing factors	Swai, Emmanuel S.; Miran, Miran B.; Kasuku, Ayubu A.; Nzalawahe, Jahashi	2016	10.4102/ojvr. v83i1.1013	As no primary data/summary statistics are presented
555	Prevalence and economic importance of Coenurus Cerebralis in sheep and goats in and around “Legahida” district of bale zone, south eastern Ethiopia	Aliye, J; Deressa, FB	2017	10.1007/s00580-017-2404-8	Duplicate

Table S3. PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			

Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	2-4
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	3-4
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	3
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	3
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	3-4 Table S1/Fig 1
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	3 Table S1/Fig 1
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	Fig 1
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	3
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	3

Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	Table S3
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	6
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	Figure 2
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	Table S3 and Table S4
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	Table S4
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	Figure 1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	Table 2
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	Table S4
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	Table 1
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	Figure 2
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	
DISCUSSION			

Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	8-9
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	9
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	9
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	9

Table S4. Table of criteria for quality and strength of evidence for determinants of prevalence of coenurosis as described by Alonso et al., 2016 with modification

Strong	Medium	Weak
Determinants of prevalence were included during the study design	If the determinants of prevalence were included during the study design	Determinants of prevalence were only mentioned

Determinants were included in the analysis	If these determinants were included in the analysis	Determinants of prevalence were not part of the analysis
Involved advanced statistics such as regression models and results were significant	Involved only in descriptive statistics and no advanced statistics carried out	No statistical analysis carried out

Table S5. List of identified determinants for *T. multiceps* coenurosis prevalence in small ruminants in Africa from years 2000-2019 as described from previous individual literature based on criteria mentioned in Table S3

Author	Country	Determinant of prevalence	Determinant of prevalence party of the study design? YES/NO	Included in the analysis	Type of analysis	Strength of evidence: , Strong, Medium, Weak
Hughes et al., 2019	Tanzania	Feeding brains to dogs	Yes	Yes	Regression analysis	Strong

Hughes et al., 2019	Tanzania	Dog ownership Livestock production	Yes	Yes	Regression analysis	Strong
Beskawy et al., 2018	Egypt	system	Yes	Yes	Bivariate analysis	Strong
Beskawy et al., 2018	Egypt	Dog ownership	Yes	Yes	Bivariate analysis	Strong
Beskawy et al., 2018	Egypt	Wild canid hosts Livestock production	Yes	Yes	Bivariate analysis	Strong
Beskawy et al., 2018	Egypt	system	Yes	Yes	Bivariate analysis	Strong
Aliye&Deressa, 2017	Ethiopia	Not worming dogs	Yes	Yes	Descriptive	Medium
Aliye and Deressa, 2017	Ethiopia	Dog ownership	Yes	Yes	Descriptive	Medium
Aliye and Deressa, 2017	Ethiopia	Dog feces management	Yes	Yes	Descriptive	Medium
Aliye and Deressa, 2017	Ethiopia	Feeding brains to dogs	Yes	Yes	Descriptive	Medium
Miran et al., 2015	Tanzania	Not worming dogs	No	No	None	Weak
Miran et al., 2015	Tanzania	Backyard slaughter Transmission and control	No	No	None	Weak
Miran et al., 2015	Tanzania	knowledge	No	No	None	Weak
Miran et al., 2015	Tanzania	Feeding brains to dogs	No	No	None	Weak
Miran et al., 2015	Tanzania	Free roaming dogs	No	No	None	Weak
Miran et al., 2015	Tanzania	Free roaming dogs	No	No	None	Weak
Miran et al., 2015	Tanzania	Not deworming dogs	No	No	None	Weak
Miran et al., 2015	Tanzania	Wild canid hosts	No	No	None	Weak
Amer et al., 2017	Egypt	Not deworming dogs	No	No	None	Weak
Amer et al., 2017	Egypt	Backyard slaughter	No	No	None	Weak
Amer et al., 2017	Egypt	Feeding brains to dogs	No	No	None	Weak
Amer et al., 2017	Egypt	Free roaming dogs Moving with dogs for	No	No	None	Weak
Amer et al., 2017	Egypt	grazing	No	No	None	Weak
Amer et al., 2017	Egypt	Wild canid hosts	No	No	None	Weak
Mengistu et al., 2017	Ethiopia	Poor handling of offals	Yes	No	None	Weak
Mengistu et al., 2017	Ethiopia	Not deworming dogs	Yes	No	None	Weak

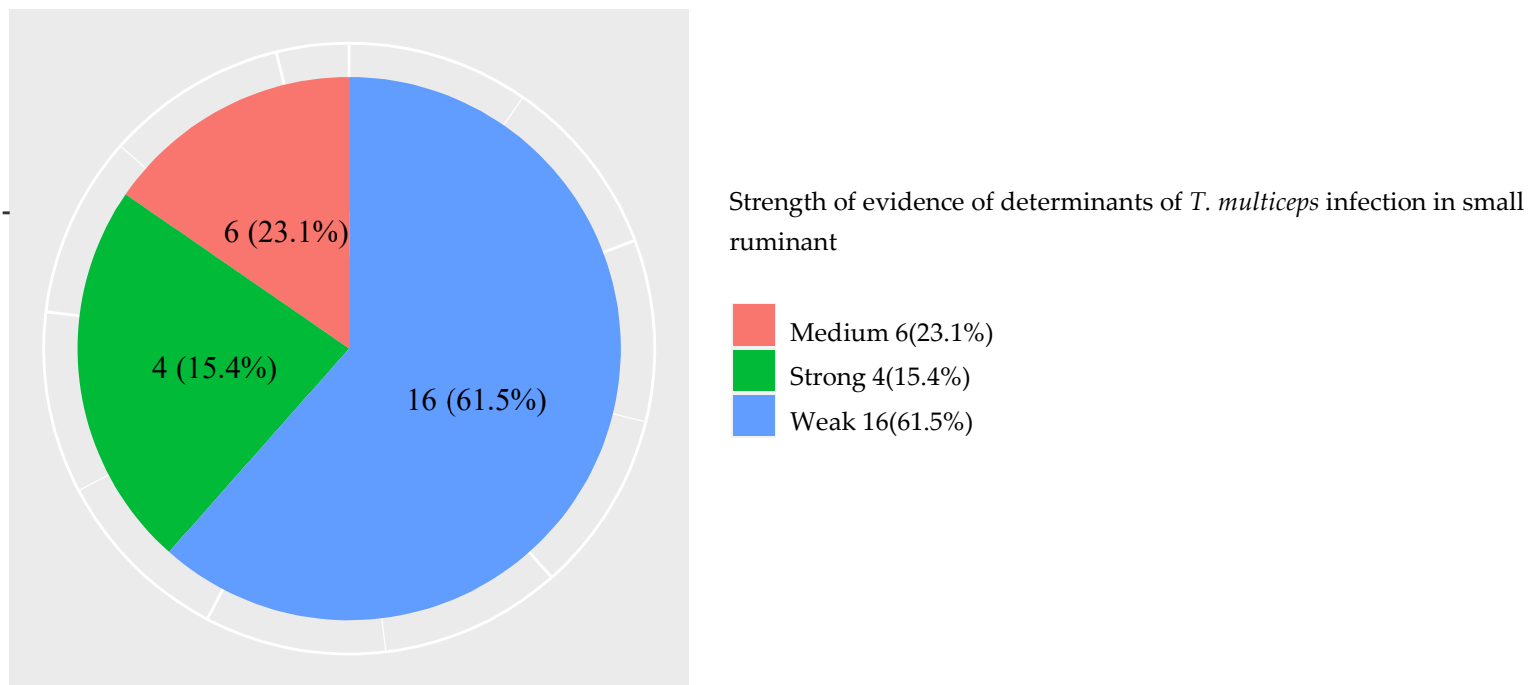


Figure S1: Strength of evidence of determinants of prevalence of *T. multiceps* coenurosis in goats and sheep in Africa year 2000 to 2019