One Health & Implementation Research Publications

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Editorial Office

One Health & Implementation Research

Editorial office: editorial@ohirjournal.com

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One Health & Implementation Research

Editorial

One Health & Implementation Research: Improving Health for All

Full-Text PDF
Copy here to cite this article:
Heukelbach J. *One Health & Implementation Research*: Improving Health for All. *One Health Implement Res* 2020;1:1-3. http://dx.doi.org/10.20517/ohir.2020.01

Original Article

Sustainable control of tungiasis in rural Nigeria: a case for One Health

Full-Text PDF
Copy here to cite this article:
Heukelbach J, Ariza L, Adegbola RQ, Ugbomoiko US. Sustainable control of tungiasis in rural Nigeria: a case for One Health. *One Health Implement Res* 2021;1:4-13. http://dx.doi.org/10.20517/ohir.2021.01

Abstract

Aim: To describe the impact and sustainability of an evidence-based intervention against tungiasis in a severely affected community in Lagos State, Nigeria.

Methods: We performed an intervention targeted at the control of tungiasis, and a cross-sectional follow-up study after one year. After 14 years, the community was revisited, and a rapid assessment was performed. Risk factors identified before the intervention included sandy floors inside houses, irregular use of footwear, and free-roaming pigs on the compound. In collaboration with community members and traditional leaders, the floors of the primary school and houses without concreted floor were sealed with concrete, free-roaming pigs were banned/confined to pigpens, and regular use of footwear and environmental hygiene, particularly consisting of cleaning the compound and streets from waste, were encouraged. We examined the participants for the presence of tungiasis on legs, feet, hands, and arms. Signs and symptoms were documented.

Results: In the baseline survey before intervention, 557 participants were included in the follow-up study after one year, 540 participants were included. The prevalence of tungiasis decreased from 45.2% to 21.3%, and the total number of lesions from 3,111 to 617 (both $P < 0.0001$). Severe symptoms and pathology (e.g., difficulty walking, deformation of toenails, loss of toenails, and bacterial superinfection) were reduced from high to negligible levels. After 14 years, there was no case with vital tungiasis lesions.

Conclusion: Long-term control of tungiasis is possible in heavily affected communities by considering an evidence-based One Health approach. Urbanization may have contributed to elimination of tungiasis after 14 years.

Keywords
Tungiasis, One Health, implementation research, epidemiology, control, Africa

Opinion

My experience with One Health: between realism and optimism

Full-Text PDF

Copy here to cite this article:
Gaviria A. My experience with One Health: between realism and optimism. *One Health Implement Res* 2021;1:14-6. http://dx.doi.org/10.20517/ohir.2020.001

Original Article

Integration of human rabies surveillance and preventive measures in the State of Ceará, Northeast Brazil

Full-Text PDF

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Holanda Duarte NF, Alencar CH, Pires Neto RJ, Moreno JO, Araújo Melo IML, Duarte BH, Heukelbach J. Integration of human rabies surveillance and preventive measures in the State of Ceará, Northeast Brazil. *One Health Implement Res* 2021;1:17-30.
http://dx.doi.org/10.20517/ohir.2021.02

Abstract

Aim: To analyze the One Health approach regarding rabies surveillance, control, and prevention in Brazil's Ceará State, exemplified by a detailed description of rabies cases that occurred over 18 years.

Methods: We described in depth the history, case development, surveillance, and prevention measures of all cases of human rabies, 2004-2021. We analyzed patient charts and reviewed technical reports of the State Health Secretariat, in addition to analysis of personal notes from field missions.

Results: All six cases occurred in rural areas. The affected people came from resource-poor communities. The state rapid response team performed comprehensive actions and seminars in collaboration with the Municipal Health Secretariats and other stakeholder groups. Patients and their relatives were not aware about the risk of wildlife-mediated rabies. A high number of wild animals (marmosets) kept as pets were collected in the communities. Only one patient presented at a primary health care center before the onset of symptoms but did not receive any post-exposure prophylaxis due to logistic problems. Even after onset of symptoms, in all cases, the suspected diagnosis was not rabies at first. In four cases, transmission occurred by marmosets (Callithrix jacchus), one by a hematophagous bat (Desmodus rotundus), and another by a domestic dog, though the identified viral strain was sylvatic. All patients died.

Conclusion: Rabies in Ceará is a wildlife-mediated disease of the most vulnerable rural populations. There is a need for ongoing integrated surveillance and control measures, information and education campaigns, and professional training, especially focusing on wildlife-mediated rabies. An integrated One Health approach - as exemplified by the presented rabies control program in Ceará - is critical for human rabies elimination.

Keywords
Rabies, control, surveillance, wild animals, Brazil, One Health

Original Article

Seroprevalence of SARS-CoV-2 in southwest Goiás, Brazil, 2020: a population-based cross-sectional serological study

Full-Text PDF

Copy here to cite this article:
Costa LF, Souza RB, de Oliveira AMM, Limongi JE. Seroprevalence of SARS-CoV-2 in southwest Goiás, Brazil, 2020: a population-based cross-sectional serological study. *One Health Implement Res* 2021;1:31-42. http://dx.doi.org/10.20517/ohir.2021.05

Abstract

Aim: The COVID-19 pandemic has been causing significant socioeconomic and health implications worldwide. We aimed to perform a population-based serological survey of SARS-CoV-2 in Quirinópolis, Goiás and to relate the infection to sociodemographic and epidemiological aspects.

Methods: Systematic sampling and active search in the community was conducted using a rapid detection kit for specific IgG and IgM. Three collection phases occurred between September and October 2020.

Results: In total, 557 volunteers participated in the study. The general seroprevalence rate was 8.1%, with one-off prevalence of 10.4%, 6.7% and 6.8% in each of the three phases. There was a predominance of results for IgG antibodies (88.9%). The bivariate analysis revealed that age < 19 years (OR = 5.0; 95%CI: 2.10-11.90; P = 0.0003), search for medical care (OR = 2.21; 95%CI: 1.10-4.31; P = 0.03), families of 3-4 residents (OR = 2.34; 95%CI: 1.08-5.05; P = 0.03) and the presence of symptoms (OR = 3.59; 95%CI: 1.92-6.78; P < 0.001) were associated with antibody detection. The symptoms related to the detection of antibodies were mainly fever (OR = 10.49; 95%CI: 4.52-23.93; P < 0.001) and abnormalities in taste (OR = 13.57; 95%CI: 6.15-29.84; P < 0.001) and smell (OR = 13.30; 95%CI: 5.36-32.99; P < 0.001).

Conclusion: The high seroprevalence and predominance of IgG antibodies indicated intense circulation of the virus. These data suggest late application of protective measures, as well as population behaviour that favours viral dissemination. In this aspect, young people < 19 years of age were important, possibly due to greater exposure. The majority detection of mild symptoms was a reflection of the active search in the community.

Keywords

Serology, epidemiological survey, COVID-19, risk factors

Perspective

Medical responsibility in the climate crisis-the investment strategies of German Doctors' pension funds: a conflict between ethics and monetisation

Full-Text PDF

Copy here to cite this article:

Schmiemann G, Steuber C, Gogolewska J, Lehmkuhl D, Schulz CM. Medical responsibility in the climate crisis-the investment strategies of German Doctors' pension funds: a conflict between ethics and monetisation. *One Health Implement Res* 2021;2:43-50. http://dx.doi.org/10.20517/ohir.2021.04

Abstract

Energy production from fossil resources is a major contributor to the anthropogenic climate crisis. Many international medical organisations have therefore called for divestment, i.e., the withdrawal of capital from these industries. The capital investments of the physicians' pension funds in Germany amount to approximately 110 billion euros. Due to a lack of transparency, it is unclear to what extent environmental, social and governance criteria are applied to the allocation of investments. To protect human health, the climate impact of investments must be measured regularly and quantitatively (climate impact analysis). In addition, climate-related risks with respect to the returns on investment should be considered (climate risk analysis), when entire industrial sectors have to be re-organised. To ecologically and economically track the pathway to a zero-emission-portfolio, the outcome must be transparent for both the members and the public. This article summarises controversial issues discussed in this context with a focus on the situation and recent developments in Germany.

Keywords

Divestment, pension funds, medical ethics, climate change

Commentary

Typhus in the Warsaw Ghetto 1940-1942: how an epidemic increased exponentially, was abated and eventually disappeared

Full-Text PDF

Copy here to cite this article:

Feldmeier H. Typhus in the Warsaw Ghetto 1940-1942: how an epidemic increased exponentially, was abated and eventually disappeared. *One Health Implement Res* 2021;1:51-5. http://dx.doi.org/10.20517/ohir.2021.03

Abstract

Typhus, a bacterial infection caused by Rickettsia prowazekii, was widespread in Europe for centuries and was endemic in Eastern Europe until the 1950s. Between 1940 and 1942, a devastating typhus epidemic occurred in the Warsaw Ghetto causing an estimated 16,000-22,000 deaths. Between November 1940 and October 1941, the epidemic increased exponentially. After a sharp peak in October, the trend reversed, and the number of new infections decreased to reach

zero in July 1942. Until recently, epidemiologists were unable to explain the peculiar shape of the epidemic curve. Based on the memories of Ludwik Hirszfeld, a Polish physician and microbiologist who spent three years in the Ghetto, it seems that improvement of diagnosis, health education and measures targeted at the interruption of the transmission of R. prowazekii via body and head lice led to a turnaround of the epidemic's dynamics and eventually to the elimination of R. prowazekii. Notably, all measures developed by Hirszfeld were implemented without the knowledge of the German occupiers and functioned in the underground.

Keywords
Typhus, R. prowazekii, epidemic, Warsaw Ghetto, body lice, head lice

Original Article

Stability of West Nile virus in lysis solution and its implication on One Health

Full-Text PDF

Copy here to cite this article:
Erandio JJC, Debboun M. Stability of West Nile virus in lysis solution and its implication on One Health. *One Health Implement Res* 2021;1:56-65. http://dx.doi.org/10.20517/ohir.2021.06

Abstract

Aim: The stability of nucleic acids varies based on storage conditions and plays an important role in achieving optimal laboratory operations. This study was conducted to implement One Health into vector surveillance and enhance our understanding of the stability of West Nile virus (WNV) positive mosquito homogenate in the Ambion® MagMAX™ lysis/binding solution to optimize laboratory operations.

Methods: WNV positive mosquito pools used for this study were collected within the Delta Mosquito and Vector Control District boundaries in 2017. Homogenates were combined and aliquoted into five sample sets. Each sample set was stored in the corresponding storage: the -20 °C freezer, +4 °C refrigerator, at +23 °C room temperature environment, and two sets were stored in the -80 °C freezer where one set underwent four freeze-thaw cycles every week for 18 weeks. Each sample was processed through ribonucleic acid extraction and real-time quantitative reverse transcription-polymerase chain reactions (RT-qPCR), four days a week, for 18 weeks.

Results: On the 18th week of the study, WNV remained detectable through RT-qPCR under all five storage conditions, including 64 freeze-thaw cycles. A statistically significant difference in weekly mean cyclic threshold values was found between the -80 °C and freeze-thaw sample sets.

Conclusion: By using the Ambion® MagMAX™ lysis/binding solution, viral samples can be stored under non-optimal conditions for at least four months. With climatic changes occurring, vector-borne disease transmission increases. Therefore, increasing the need for global vector control and surveillance, implementation of One Health strategies will improve public and animal health through optimized vector-borne disease control, surveillance, and prevention.

Keywords
West Nile virus, storage temperature, One Health, freeze-thaw, lysis/binding solution, cyclic threshold, reagent, extraction

Original Article

Associations between socioeconomic and public health indicators and the case-fatality rate of COVID-19 in sub-Saharan Africa

Full-Text PDF

Copy here to cite this article:

Kreienbrinck A, Zeeb H, Becher H. Associations between socioeconomic and public health indicators and the case-fatality rate of COVID-19 in sub-Saharan Africa. *One Health Implement Res* 2021;1:66-79. http://dx.doi.org/10.20517/ohir.2021.08

Abstract

Aim: To investigate the influence of socioeconomic and public health indicators on the COVID-19 case-fatality rate (CFR) in sub-Saharan African countries.

Methods: Ecological study using publicly available, aggregated COVID-19 data, between February 2020 to May 2021, from 46 sub-Saharan African countries. As the outcome of interest, country-specific CFRs were calculated for five 13-week periods. Spatial and temporal distributions of the variables were analysed, and negative binomial regressions with rate ratios (RR) were conducted to estimate the association between socioeconomic and public health indicators with CFR of COVID-19.

Results: There were 1.7 million confirmed COVID-19 cases and 29,685 deaths in the 46 sub-Saharan African countries during the investigated time period. The median CFR was between 1% and 2%. A higher human development index (RR = 0.80; 95%CI: 0.63-1.02), higher political stability index (RR = 0.94; 95%CI: 0.90-1.00), higher number of hospital beds (RR = 0.84; 95%CI: 0.73-0.97), and higher population density (RR = 0.85; 95%CI: 0.71-1.01) resulted in a lower CFR. Elevated prevalence of diabetes mellitus (RR = 1.56; 95%CI: 0.99-2.45) and cardiovascular disease mortality (RR = 1.51; 95%CI: 1.04-2.20) were associated with higher CFR. Chronic respiratory disease and handwashing facilities presented little to no effects on COVID-19 CFR.

Conclusion: The results draw attention to the vulnerabilities of the sub-Saharan African region which must be considered in the interpretation of our study. Nevertheless, the potential benefits of a lower proportion of pre-existing medical conditions and the young age structure seem to be contrasted by challenges due to socioeconomic and public health factors, which may present possible drivers of CFR on a population level.

Keywords

COVID-19, case-fatality rate, socioeconomic, public health, sub-Sahara Africa

Editorial

The COVID-19 pandemic and the disaster of the response of a right-wing government in Brazil

Full-Text PDF

Copy here to cite this article:

Kerr LRFS, Kendall C. The COVID-19 pandemic and the disaster of the response of a right-wing government in Brazil. *One Health Implement Res* 2021;1:80-3. http://dx.doi.org/10.20517/ohir.2021.11

Review

Ecoepidemiology of dengue in Brazil: from the virus to the environment

Full-Text PDF

Copy here to cite this article:

Martins ABS, Alencar CH. Ecoepidemiology of dengue in Brazil: from the virus to the environment. *One Health Implement Res* 2022;2:1-14. http://dx.doi.org/10.20517/ohir.2021.10

Abstract

Dengue is an infectious disease caused by the dengue virus. In Brazil, the main vector is the mosquito Aedes aegypti (L.); however, Aedes albopictus (Skuse) can also transmit this pathogen. According to the WHO, more than 125 countries are endemic for dengue, and an estimated 50-100 million infections occur annually. In Brazil, the Northeast region is one with high incidence rates and records of successive epidemics. Dengue has been circulating in Brazil for over 30 years, due to the fact that there are areas that offer favorable environmental conditions, as well as municipalities with low socioeconomic conditions and frequent water crises. In addition, Brazil is a tourist hub with an intense flow of visitors, keeping the doors open for the entry and circulation of vector-borne diseases. The role of epidemiology is to analyze the distribution of diseases and their determinants in space and time and to unveil the social inequalities that influence the health-disease process. Thus, a review study that describes the occurrence of Dengue may provide a perspective of future areas of greater risk for dengue epidemics.

Keywords

Dengue, spatial analysis, temporal distribution

Review

The use and applicability of Internet search queries for infectious disease surveillance in low- to middleincome countries

Full-Text PDF

Copy here to cite this article:

Beckhaus J, Becher H, Belau MH. The use and applicability of Internet search queries for infectious disease surveillance in low- to middle-income countries. *One Health Implement Res* 2022;2:15-28. http://dx.doi.org/10.20517/ohir.2022.01

Abstract

Uncontrolled outbreaks of emerging infectious diseases can pose threats to livelihoods and can undo years of progress made in developing regions, such as Sub-Saharan Africa. Therefore, the surveillance and early outbreak detection of infectious diseases, e.g., Dengue fever, is crucial. As a low-cost and timely source, Internet search queries data [e.g., Google Trends data (GTD)] are used and applied in epidemiological surveillance. This review aims to identify and evaluate relevant

studies that used GTD in prediction models for epidemiological surveillance purposes regarding emerging infectious diseases. A comprehensive literature search in PubMed/MEDLINE was carried out, using relevant keywords identified from up-to-date literature and restricted to low- to middle-income countries. Eight studies were identified and included in the current review. Three focused on Dengue fever, three analyzed Zika virus infections, and two were about COVID-19. All studies investigated the correlation between GTD and the cases of the respective infectious disease; five studies used additional (time series) regression analyses to investigate the temporal relation. Overall, the reported positive correlations were high for Zika virus (0.75-0.99) or Dengue fever (0.87-0.94) with GTD, but not for COVID-19 (-0.81 to 0.003). Although the use of GTD appeared effective for infectious disease surveillance in low- to middle-income countries, further research is needed. The low costs and availability remain promising for future surveillance systems in low- to middle-income countries, but there is an urgent need for a standard methodological framework for the use and application of GTD.

Keywords

Communicable diseases, population surveillance, Internet search queries, low-income countries, middle-income countries

Original Article

A new scoring system for operational indicators guiding leprosy monitoring and surveillance in Brazil

Full-Text PDF

Copy here to cite this article:

Ferreira AF, Heukelbach J, Souza EA, García GSM, Filha CR, Braga JU, Oliveira MLWDR, Reis AS, Corona F, Neto SAS, Andrade ESN, Andrade TIB, Jr ANR. A new scoring system for operational indicators guiding leprosy monitoring and surveillance in Brazil. *One Health Implement Res* 2022;2:29-41. http://dx.doi.org/10.20517/ohir.2021.09

Abstract

Objective: We aimed to develop a new score to facilitate and enhance the quantitative assessment of operational standard indicators guiding leprosy monitoring and surveillance, based on data from Brazilian hyperendemic regions, 2004-2019.

Methods: We analyzed epidemiological and operational standard indicators of leprosy control from the database of the Notifiable Diseases Information System in Brazil's North and Northeast regions. The so-called IntegraHans Operational Score (IHOS) was generated, integrating 10 indicators, with a final semi-quantitative score varying from 0 (worst scenario) to 1 (best scenario). We then applied the IHOS within an ecological and population-based study to assess temporal and spatial leprosy distributions from 2004 to 2019.

Results: In total, 343,888 new leprosy cases were analyzed (61% of cases in the country). There was a significant temporal trend of the IHOS annual percentage change [-0.3; 95% confidence interval (CI): -0.5 to 0.0] during 2010-2019, with large cities showing a worsening trend (average annual percentage change -0.8, 95%CI: -1.1 to -0.4). After 2010, municipalities with low and

medium social vulnerability, and those with medium human development and medium and high social prosperity, showed improved IHOS scores. Spatial patterns with the best IHOS scenarios were observed in the states of Rondônia, Tocantins, and Pernambuco.

Conclusion: The IHOS combines different operational parameters and is an effective and simple tool to assess leprosy control programs in Brazil. The worst IHOS scores over time were identified in critical areas, such as large cities in hyperendemic areas and municipalities with lower endemicity.

Keywords
Leprosy, operational indicators, epidemiology, Brazil

Opinion

The importance of free education for public health and for social transformation

Full-Text PDF

Copy here to cite this article:
Calheiros CML. The importance of free education for public health and for social transformation. *One Health Implement Res* 2022;2:42-4. http://dx.doi.org/10.20517/ohir.2022.06

Review

Eco-epidemiological studies to develop integrated vector surveillance of leishmaniasis vectors in the Americas

Full-Text PDF

Copy here to cite this article:
Salomón OD, Quintana MG. Eco-epidemiological studies to develop integrated vector surveillance of leishmaniasis vectors in the Americas. *One Health Implement Res* 2022;2:45-55. http://dx.doi.org/10.20517/ohir.2022.09

Abstract
We developed an integrated vector surveillance (IVS) proposal for cutaneous leishmaniasis (CL) and visceral leishmaniasis (VL) in the Americas, based on eco-epidemiological studies conducted by researchers of the Leishmaniasis Research Network of Argentina. For CL, the transmission was explained in the framework of the edge effect, the increase of vectors and risk of exposure at ecotones and environmental interfaces, and typified as ephemeral, transient, or permanent edges, supporting a cost-effective IVS strategy for early warning of CL outbreaks through an environmental modification alert network, which includes multiple sources of information and actors. In relation to VL, the earliest colonization sites and spatial distribution were explained by modeling and forecasting the most likely hotspots, persistent in time and space, and modulated by environmental variables. Therefore, for VL, a scalar strategy of critical site selection is proposed from a "city" scale based on secondary sources such as remote sensing for the definition of possible areas to monitor and intervene, a scale of restriction from possible to most likely areas

through local knowledge, and a "focal site" scale of trap placement through field observation; in this way, IVS activities are carried out at a few sites of the urban landscape and allow a sustainable program.

Keywords
Visceral leishmaniasis (VL), cutaneous leishmaniasis (CL), eco-epidemiology

Original Article

Rabies: knowledge, attitudes and practices in the Suhum municipality of Ghana

Full-Text PDF

Copy here to cite this article:
Suu-Ire RD, Sarpong A, Mudoga E, Asumah S, Sasu BK, Ziekah MY, Guri B, Johnson S, Languo n S. Rabies: knowledge, attitudes and practices in the Suhum municipality of Ghana. *One Health Implement Res* 2022;2:56-67. http://dx.doi.org/10.20517/ohir.2022.04

Abstract

Aim: The world is racing behind time to get dog-mediated human rabies eradicated by 2030. In response, Ghana has developed a rabies control strategy that awaits implementation. The Ghana chapter of Rabies in West Africa piloted a 3-year One Health rabies control programme in Suhum Municipality of the Eastern Region, Ghana. Questionnaires were administered as part of the exercise to gather information on local rabies-related perceptions and practices, with the aim of identifying knowledge, attitude, and practice gaps that may antagonise control efforts and endanger human life.

Methods: A cross-sectional study was conducted from March to November 2020. The study involved 316 conveniently sampled households (individual per household) from three randomly selected sub-municipalities in Suhum Municipality. Data were analysed with IBM SPSS version 26.

Results: Of the 316 households interviewed, 82% (n = 259) of respondents were aware of rabies, of which 78.8% (n = 204) were found to have good knowledge about rabies. Rabies awareness was significantly associated with age (P = 0.004), sex (P = 0.042), and level of education (P = 0.0405). Although a majority (76.8%) of dog bite victims reported to the hospital, only 7.1% practiced wound cleansing while a significant number (32.2%) were involved in several myth-laden traditional remedies.

Conclusion: This study found that most of the respondents are aware and have good knowledge about rabies. However, their practices in disease prevention and control were poor. Continued and strengthened education through One-Health collaboration of stakeholders and the cooperation of the local community will be required for effective rabies control.

Keywords
Awareness, knowledge, practices, attitude, rabies, dog bite, Suhum Municipality

Technical Note

Capacity building for wildlife health professionals: the Wildlife Health Bridge

Full-Text PDF

Copy here to cite this article:

Meredith A, Anderson N, Malik P, Nigam P, Thomas A, Masters N, Guthrie A, Davidson H, Patterson S, Amin R, Skerratt L, Kock R, Sainsbury A. Capacity building for wildlife health professionals: the Wildlife Health Bridge. *One Health Implement Res* 2022;2:68-78. http://dx.doi.org/10.20517/ohir.2022.03

Abstract

The Wildlife Health Bridge was established in 2009 with the aim of improving the expertise and knowledge base of wildlife health professionals in biodiverse low- and middle-income countries. The Wildlife Health Bridge centres around partnerships among educational institutions: the Zoological Society of London, the Royal Veterinary College, the University of Edinburgh's Royal (Dick) School of Veterinary Studies, the Wildlife Institute of India, and the University of Melbourne Veterinary School. The Wildlife Health Bridge provides quality education in wildlife health, ecosystem health, and wildlife biology, facilitates the interchange of students between collaborating countries for research studies and provides a global graduate network of wildlife health professionals. In addition to established Masters' level wildlife health training programmes run by the partner organisations, the Wildlife Health Bridge has developed a collaborative field-based course, Interventions in Wild Animal Health, provided annually in India since 2016, which has trained 138 veterinarians to date, enhancing local and international capacity in managing emerging wildlife health issues and building global professional linkages. The Wildlife Health Bridge's Wild Animal Alumni network facilitates networking and exchange between Wildlife Health Bridge institutions and graduates, with over 701 members from 67 countries, half of which are biodiverse low- and middle-income countries. Collaboration between educational institutions has enabled new ideas and ongoing developments in the delivery of materials and learning outcomes. The Wildlife Health Bridge is building global capacity in trained wildlife health professionals, through educational programmes and a synergised network, with the aim of impacting conservation practice to benefit human, domestic animal and wildlife health.

Keywords

Capacity, conservation, interventions, partnership, professional, training, veterinarian, wildlife health

Original Article

A qualitative exploration of perceptions of the COVID-19 vaccine in Malawi during the vaccine rollout phase

Full-Text PDF

Copy here to cite this article:

Safary E, Mtaita C. A qualitative exploration of perceptions of the COVID-19 vaccine in Malawi during the vaccine rollout phase. *One Health Implement Res* 2022;2:79-87. http://dx.doi.org/10.20517/ohir.2022.08

Abstract

Aim: Although the COVID-19 vaccine in Malawi has been well taken up and encouraged by the current administration, many individuals either are hesitant to get vaccinated for COVID-19 or refuse to do so. Research has uncovered associated demographic and psychological reasons, but there is a lack of qualitative work involving individuals across Malawi to explore reasons for this hesitancy. We aimed to explore factors leading to hesitation and/or refusal to COVID-19 vaccination in Malawi.

Methods: The study utilized an online survey to collect free-text responses to assess factors leading to hesitation or refusal of COVID-19 vaccination in Malawi. The respondents were part of an ongoing community project in Central Malawi. In total, 284 individuals took part (72 males, 212 females). The mean age was 47.94 (SD = 8.36). Sixty-nine respondents (24.3%) had been vaccinated and 215 (75.7%) had not. An inductive thematic analysis was conducted.

Results: Four themes were yielded, describing; fear of vaccination, becoming vaccinated to protect others, perceived pressure to be vaccinated, and perceptions of the COVID-19 vaccine being ineffective and experimental.

Conclusion: Measures to increase COVID-19 vaccine uptake and acceptance should target fear and misinformation as constraints. Interventions such as individual sensitization and motivational interviewing should be considered for guiding individuals towards considering COVID-19 vaccination.

Keywords
COVID, vaccine acceptance, vaccine hesitation

Original Article

Characterization of freshwater snail intermediate hosts of schistosomes in four communities from Osun State, Southwest Nigeria

Full-Text PDF

Copy here to cite this article:
Ugbomoiko US, Kareem II, Awe DO, Babamale AO, Gyang PV, Nwafor TE, Akinwale OP. Characterization of freshwater snail intermediate hosts of schistosomes in four communities from Osun State, Southwest Nigeria. *One Health Implement Res* 2022;2:88-95. http://dx.doi.org/10.20517/ohir.2022.05

Abstract

Aim: Freshwater snails of the genus Bulinus act as essential intermediate hosts of Schistosoma haematobium, a trematode parasite that causes urogenital schistosomiasis. The snails are widely distributed throughout Nigerian waters. Since species identification of the Bulinus snails is important for appropriate control strategies of urogenital schistosomiasis, this study therefore aimed at identifying the Bulinus species responsible for transmission of the infection in four communities located in an endemic Local Government Area of Nigeria. It also aimed at using restriction fragment length polymorphism (RFLP) as a more affordable method than sequencing to characterize Bulinus snails from schistosomiasis endemic regions in Nigeria.

Methods: In this study, 100 freshwater snails morphologically identified as Bulinus species were collected from four communities located in a previously reported schistosomiasis endemic Local Government Area (LGA), namely Olorunda LGA in Oshun State, Southwest Nigeria. All snails were screened for schistosome infection using polymerase chain reaction (PCR) targeting the DraI gene. Molecular identification of the snails was done by PCR amplification of their entire internal transcribed spacer region including the 5.8S ribosomal RNA gene and RFLP.

Results: Five of the 100 snails were positive for schistosome infection. PCR-RFLP profiles showed bands of different sizes for 26 other snails including the schistosome-infected ones. RFLP analysis showed that 11 of the snails belonged to the freshwater snails of the genus Physa while 13 belonged to the freshwater snails of the genus Bulinus, including Bulinus globosus (8) and B. truncatus (5). The species of the remaining two snails could not be resolved using the reference profiles from our previous studies.

Conclusion: This study confirmed previous observations that limited morphological uniqueness within the Bulinus groups hinders their identification, and RFLP is a cheaper alternative method to sequencing that can be used by laboratories with limited resources for Bulinus species identification.

Keywords
Freshwater snails, schistosomes, molecular identification, restriction fragment length polymorphism

Review

Current status of the treatment of paragonimiasis

Full-Text PDF
Copy here to cite this article:
Richter J. Current status of the treatment of paragonimiasis. *One Health Implement Res* 2022;2:96-107. http://dx.doi.org/10.20517/ohir.2022.10

Abstract
Paragonimiasis, a foodborne trematodiasis is caused by various Paragonimus species endemic in Asia, Africa, and the Americas. Human infection occurs through consuming improperly cooked freshwater crustaceans, crabs or crayfish, eating raw meat of paratenic hosts or by ingesting metacercariae from contaminated hands and cooking utensils. More than 292 million persons worldwide are at risk. The morbidity associated with paragonimiasis includes acute febrile illness and chronic pleuro-pulmonary manifestations which may be confounded with tuberculosis or lung cancer. Ectopic manifestations mostly involve the central nervous system, heart, or subcutaneous tissues.
Objectives: to evaluate the efficacy and safety of currently available drugs praziquantel (PZQ) and triclabendazole (TCZ).

Methods: a PubMed and Google Scholar search and reference selection was performed according to the the Preferred Reporting Items for Systematic Reviews protocol using a combination of the terms “paragonimiasis” AND “treatment” OR “therap*” from 01/2000 to 02/2022.

Results: no randomized controlled trials were identified. Five open trials on 487 patients treated with PZQ showed 81%-100% parasite clearance depending on dosage and duration. Three open trials on 226 patients with TCZ showed a 99.6% efficacy. A quantitative comparison was not applicable to retrospective analyses of hospital records, case series and case reports because of surgical interventions, various co-morbidities and -medications and definitions of cure. Some patients treated with PZQ required multiple courses or re-treatment with TCZ, whereas one patient treated with TCZ required re-treatment with PZQ.

Conclusions: PZQ and TCZ are usually effective for treating paragonimiasis. Controlled randomized trials are required to compare the safety, efficacy and applicability of PZQ versus TCZ and to evaluate combined PZQ-TCZ therapy.

Keywords

Paragonimus, paragonimiasis, lung fluke, praziquantel, triclabendazole