

with infected positive with COVID-19 and 59.8% of the participants shown positive response with not infected with COVID-19. Thus, students' knowledge of COVID-19 vaccination over all response was good and also paid attention towards the vaccination against COVID-19 and booster dose.

LITERATURE

1. <https://www.who.int/westernpacific/emergencies/covid-19/covid-19-vaccines>
2. <https://www.who.int/initiatives/act-accelerator/covax>.
3. <https://poe.com/s/Hp1BNkeZL0QlPqZYtapI>
4. https://docs.google.com/forms/d/e/1FAIpQLSfzpHDTwBDF5gH3IISTeD4WeSwCZI8T4ABclyF2mdx-M1ITFw/viewform?usp=sf_link.

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PREVALENCE AND DISTRIBUTION OF SOIL-TRANSMITTED HELMINTH INFECTIONS IN INDIA

Introduction

Understanding the prevalence of soil-transmitted helminth infections is necessary to plan control strategies and focus on highly endemic regions for preventive chemotherapy and improved sanitation facilities. India is known to be endemic for soil-transmitted helminth (STH) infections. Soil-transmitted helminth infections rarely cause mortality with diarrhea, abdominal pain and low hemoglobin levels as the immediate outcome of infections, however, the long term effects of these infections are far more sinister as those with infections show reduced cognitive abilities, intellectual capacity and lower work productivity [1]. The warm and moist climate of tropical and subtropical countries provides the ideal environment for the survival of parasite eggs or larvae of these four STH, roundworm (*Ascaris lumbricoides*), whipworm (*Trichuris trichiura*) and hookworm (*Necator americanus*, *Ancylostoma duodenale*) [2]. The prevalence and control of STH infections is inextricably linked with water quality, sanitation, hygiene practices and socio-economic status in the affected areas [3]. Despite the fact that infection can be cured with either Albendazole or Mebendazole, eradication is difficult, given STH's feco-oral and penetration-via-skin transmission pattern as the chances of reinfection are very high in population living in affected areas. Control is achieved by targeted use of chemotherapy and improvement of sanitation, drinking water, use of pit-latrines instead of open defecation and good hygiene practices.

Goal

To analyse the prevalence and distribution of soil-transmitted helminth infections in India.

Materials and methods of research

To analyse the prevalence, spatial distribution and identify high-risk zones of helminth a systematic search was carried out based on PRISMA guidelines from the year 2013–2022. We used the following search terms anywhere in the articles: “soil transmitted helminth” or “ascaris” or “trichuris” or “whipworm” or “necator” or “ancylostoma” or “hookworm” AND “India” [4].

The result of the research and the discussion

Around 39 studies that reported the prevalence of soil-transmitted helminth infections from 19 different states of India. *Ascaris lumbricoides* was the most prevalent parasite. Higher than 50% prevalence was reported from six states. Nearly 90% studies reported the prevalence of more than one parasite species in the same sample population. Several studies (85%) reported prevalence of STH infection only in children. Stool samples were screened for the presence of STH infection. A combination of Saline and iodine wet mount, Kato-Katz technique, salt flotation, formol-ether concentration, mini-FLOTAC and zinc sulphate concentration techniques were used for parasite detection. A total of 21 studies reported prevalence data for all three parasitic infections, 13 studies reported prevalence data for at least two parasites and 5 studies reported data only for a single parasite. A higher than 50% prevalence for *A. lumbricoides* was reported from 10 different locations scattered across six states, Jammu and Kashmir, Assam, Bihar, Tamil Nadu, West Bengal and Andhra Pradesh covering nearly 30% of India's population. More than 50% prevalence for *T. Trichiura* was reported from two different locations from the states of Assam and Andhra Pradesh and more than 50% prevalence for hookworm was reported from a single location from the state of Andhra Pradesh [5]. The states of Uttarakhand, Uttar Pradesh, Jharkhand, Manipur, Maharashtra and Puducherry reported a prevalence higher than 20%. Less than 20% prevalence was reported from another seven states of Delhi, Himachal Pradesh, Chandigarh, Madhya Pradesh, Rajasthan, Gujarat and Karnataka. The *Ascaris Lumbricoides* prevalence in Tamil Nadu, Kashmir is 91.12%; *Tichuris tichuria* in Assam and Andhra Pradesh in 71.5%; Hookworm in Andhra Pradesh in 50.2% is shown in Table 1. The prevalence of soil-transmitted helminth in India in percentage from the year of 2013 to 2022 is shown in the Figure 1. The data for *Ascaris Lumbricales*, *Tichuris tichuria* and Hookworm is shown in the Table 2.

Table 1 – Prevalence and the type of soil-transmitted helminth in different States of India

Soil-transmitted helminth	Prevalence in percentage	Helminth distribution in different states of India
<i>Ascaris lumbricoides</i>	91.12%	Tamil Nadu, Bihar, Kashmir
<i>Tichuris trichiura</i>	71.5%	Assam and Andhra Pradesh
Hookworm	50.2%	Andhra Pradesh

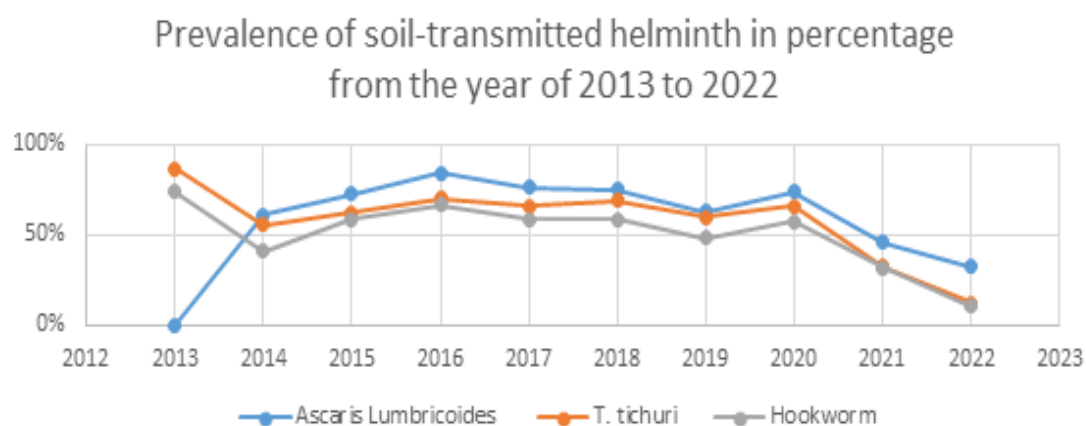


Figure 1 – The prevalence of soil-transmitted helminth in India from the year of 2013 to 2022