

Understanding the trends of tribal research in India through bibliometric analysis

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ABSTRACT

Tribes are the most vulnerable, particularly in healthcare. Health research in a population helps to understand the trends of various diseases and other social determinants causing them. Our study aims to perform a bibliometric analysis of Tribal research in India from its status quo. **Materials and Methods:** Research articles on tribal health were retrieved from Scopus and analyzed using MS Office, VOS viewer, and Word Cloud generator from January 2000 to December 2020. The number of research publications published each year, the clustering pattern of contributing authors, the most popular journals, the leading publication, document type, domain research areas, and commonly used keywords were all considered in the study. **Results:** As a result of the search, 1249 research publications were found. According to our selection criteria, only 395 research papers were included in the analysis. Approximately 43 research publications were published in 2020, but only three articles were published in 2000. Almost 35.7% of articles were published in traditional medicine, and 15.7% and 14.7% of articles were published in nutrition and infectious diseases. Less than 1% of articles were published in Health Policy, and 1.5% were published in Health Systems. **Conclusions:** The study results showed that the research on tribes has now been improving in the following years. Research into tribal mental health and health care systems should be encouraged. Collaboration and funding may assist academic institutions in raising awareness of health issues in these populations.

Keywords: Bibliometric analysis, health research, India, tribal health, tribes

Introduction

India is home to many tribes representing various economic backwardness and poverty. India is one of the countries with the largest indigenous population (approximately 10.2 million) globally. According to the 2011 census, 8.6% of India's indigenous peoples live in different geographic regions and throughout the country's territories.^[1] There are approximately 700 types of tribes in India, according to the notified appendix of Article 342 of the Indian Constitution. Most tribals live in forested or hilly areas, where illiteracy, a lack of potable water,

and poor personal hygiene and sanitation make them more vulnerable to disease, resulting in poorer health outcomes than the general population.^[2]

Tribal health is considered an essential means of understanding the way of life of indigenous peoples. Tribal health is in bad shape in today's world. Many endemics and epidemics are still prevalent in tribal populations. In addition, ignorance of the tribal people and the inability to access health care is deteriorating health conditions.^[3] Tribal people are a heterogeneous group, but they have one thing in common: poor health outcomes, high morbidity, high death rate, and very limited or no access to healthcare facilities.^[4]

Health is a necessary feature of human growth and plays an essential role in the growth and development of communities and countries. Sociopolitical and economic organizations have

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a significant impact on the current and future well-being of people and their members.^[5] Chieftainship is highly valued by the tribal population, which has a distinct but diverse socio-political organization. The relationship between tribal health and nature and its power is unique but understandable.^[6]

Not surprisingly, the prevalence of health problems is higher among tribal women and children as their physiological characteristics and vulnerability make them even more vulnerable.^[7] Malnutrition is also the gray side of poor health. Increasing social inequalities, the growth of the private health sector, barriers to care for the poor, and a decline in the quality of the public health system are all factors that may increase tribal populations' differential vulnerability.^[8]

According to several studies, the tribal population has a very high malnutrition rate.^[9,10] Very high malnutrition rates have been reported even among children under five years of age.^[11,12] Scheduled Tribes have higher mortality rates and a higher prevalence of tuberculosis^[13] and malnutrition, including high levels of anaemia,^[14] compared to national averages. Inadequate food intake, poor hygiene, tobacco and alcohol use, as well as a lack of access to health care are all risks that these groups face. The NFHS-4 report reaffirms the widely-anticipated truth that, despite improvements, malnutrition is still low and far higher than in all groups combined. According to several reports, nearly 44% of tribal children under five years of age are being stunted (low height for age), 45% of children are underweight (low weight for age), and 27% are affected by wasting (low weight for height) in India.^[15] Undernutrition leads to numerous diseases such as endemic goitre, anaemia, pellagra, and beriberi. Unsanitary food supplies, water pollution and unhealthy diets harm the health of the tribes. Diseases such as endemic goitre, pellagra, anaemia, and beriberi are caused by malnutrition. The health of the tribes is compromised by problems such as inadequate food supply, water pollution, and poor dairy intake.

Tribal Research

In some cases, indigenous populations have been harmed through inappropriate research methods and practices.^[16] Scheduled Tribes communities are particularly vulnerable due to high levels of poverty and discrimination. Various research can help us to identify the causation of the disease, epidemiological and demographic transition. We can use the research findings to assist in developing various intervention and health policies. Research should be conducted in a culturally sensitive manner, taking into account the needs and priorities of the population. Incorporating these aspects requires a certain level of community engagement, including the development of research questions, participation in research design and interpretation of findings, and development of policy recommendations.

Materials and Methods

All research output was retrieved from the Scopus database between January 2000 and December 2020 by searching for

'Tribal Health.' The number of publications by year, the network analysis between author linkage, research domain, articles from leading journals with high citations, and commonly used keywords was all used to evaluate articles. The data were analyzed using MS Excel, Word Cloud generator, and VOS viewer.

To reduce bias, independent searches were performed by two authors (SC and BP). Keywords were searched in the title, abstract, and keywords. Papers were first evaluated for eligibility for inclusion as titles, and abstracts and full texts were also reviewed in case of ambiguity. Articles with their primary focus on tribal health or those related to tribal health in India are included. Studies published only in English are included. Studies published other than health aspects of tribes and does not meet inclusion criteria were excluded. The analysis included 395 articles discovered through a systematic search on Tribal Health.

Results

Distribution of tribal health research publications by year

Figure 1 explains the number of Year wise Publications from January 2000 to December 2020. In the year 2000, less than 1% of the articles were published in Tribal health, whereas, in 2020, nearly 10% of the articles were published. There is a substantial increase from 2010.

Top 25 tribal health publications in terms of total citations

Table 1 interprets the top 25 articles in tribal health based on the citations. The article entitled "Tobacco use in India: prevalence and predictors of smoking and chewing in a national cross-sectional household survey," published in 2003, has nearly 370 citations.

Top 15 Journals on Tribal Health in India

Table 2 elucidated that the Indian Journal of Traditional Knowledge published 89 articles on tribal health. Asian Journal of Pharmaceutical and Clinical Research and Journal of Ethnobiology and Ethnomedicine published nine articles, respectively.

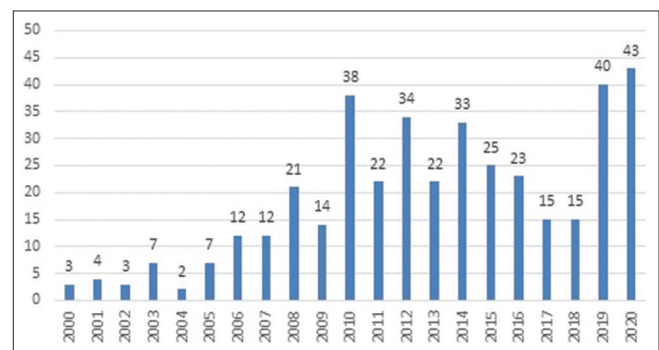


Figure 1: Year-wise distribution of Tribal Health research publications, India, 2000–2020

Table 1: Top 25 articles on tribal health with their total citations

Year	Title	Domain	Cited by
2003	Tobacco use in India: prevalence and predictors of smoking and chewing in a national cross sectional household survey.	Non-Communicable Diseases	370
2006	Ethnobotanical investigations among tribes in Madurai District of Tamil Nadu (India)	Traditional Medicine	159
2005	Regular use of alcohol and tobacco in India and its association with age, gender, and poverty	Non-Communicable Diseases	127
2008	Ethnomedicinal plant use by Lepcha tribe of Dzongu valley, bordering Khangchendzonga Biosphere Reserve, in North Sikkim, India	Traditional Medicine	106
2006	Traditional use of medicinal plants by the Jaintia tribes in North Cachar Hills district of Assam, Northeast India	Traditional Medicine	100
2009	Plant wealth of Northeast India with reference to ethnobotany	Traditional Medicine	86
2008	Ethnomedicinal plant knowledge of the Mullu kuruma tribe of Wayanad district, Kerala	Traditional Medicine	77
2013	Inequity in India: The case of maternal and reproductive health	Reproductive Health	69
2007	Traditional knowledge on zootherapeutic uses by the Saharia tribe of Rajasthan, India	Traditional Medicine	60
2014	Undernutrition and the incidence of tuberculosis in India: National and subnational estimates of the population-attributable fraction related to undernutrition	Nutrition	49
2011	Vertebrates used for medicinal purposes by members of the Nyishi and Galo tribes in Arunachal Pradesh (North-East India)	Traditional Medicine	46
2010	An ethnobotanical study of medicinal plants of Rewa district, Madhya Pradesh	Traditional Medicine	46
2000	Field evaluation of the ICT malaria Pf/Pv immunochromatographic test for diagnosis of Plasmodium falciparum and P.vivax infection in forest villages of Chhindwara, central India	Infectious Diseases	46
2006	Diet, nutritional status and food related traditions of Oraon tribes of New Mal (West Bengal), India.	Nutrition	44
2006	Women's health in a rural community in Kerala, India: Do caste and socioeconomic position matter?	Behavioral Health	44
2003	Prevalence risk factors and genotype distribution of HCV and HBV infection in the tribal population: A community based study in south India	Infectious Diseases	42
2017	Antimicrobial, anthelmintic, and antiviral activity of plants traditionally used for treating infectious disease in the Similipal Biosphere Reserve, Odisha, India	Traditional Medicine	42
2006	Diet and nutritional status of adolescent tribal population in nine states of India	Nutrition	41
2001	Body mass index of adult males in 12 populations of Northeast India	Nutrition	40
2011	Coding and non-coding polymorphisms in VDR gene and susceptibility to pulmonary tuberculosis in tribes, castes and Muslims of Central India	Genetic Diseases	40
2018	Neurodevelopmental disorders in children aged 2–9 years: Population-based burden estimates across five regions in India	Child Health	38
2011	Ethnobotany of religious and supernatural beliefs of the Mising tribes of Assam with special reference to the 'Dobur Uie'	Traditional Medicine	38
2005	The spectrum of haemoglobin variants in two scheduled tribes of Sundargarh district in north-western Orissa, India	Infectious Diseases	35
2014	Management of children with severe acute malnutrition: Experience of Nutrition Rehabilitation Centers in Uttar Pradesh, India	Nutrition	35
2007	Prevalence of female infertility and its socio-economic factors in tribal communities of Central India.	Reproductive Health	32

Research domains on tribal health

Table 3 explains Research Domains in which research is being carried out. Nearly 35.7% of the articles have been published in Traditional Medicine, 15.7% and 14.7% of the articles have been published in the nutritional and infectious diseases. Less than 1% of the articles have been published in the Health Policy, and 1.5% have been published in Health Systems.

Top authors with their citations contributed to Tribal Health in India

Table 4 reveals that the top authors contributed to Tribal Health in India with their citations. R.K Singh has published 16 articles with 114 citations. Rao VG, Tiwari PK, and Murhekar MV have published nine articles with 150, 137, and 122 citations, respectively.

Co-occurrence of all keywords

The networks between the two bubbles in Figure 2 represent the co-occurrence of all keywords, and the size of the bubble corresponds to the number of times that keywords appear in all publications. Keywords such as India, Prevalence, Male, and Female are commonly highly used with high strength links.

Co-occurrence of author keywords

Figure 3 describes the networks between the two bubbles representing the co-occurrence of author keywords, with the size of the bubble corresponding to the number of times that keyword appears in all publications. Keywords such as India, Medicinal plants, Ethnomedicine, Tuberculosis, and undernutrition are the most used author keywords with high strengths.

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