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On the margins: exploring barriers to health service accessibility for tribal women in India

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Abstract: Since the country's independence, the Constitution of India has implemented separate provisions for the socio-economic development of local tribes. However, after 75 years of independence, the tribal population remains one of the most marginalised groups, characterised by low socio-economic status and poor health indicators compared to the non-tribal population. Therefore, this study tried to understand the barriers to low healthcare utilisation among tribal women in India. The study is a review paper conducted for the years 1995-2023. Fifty-three research papers were included in the study. With the help of Penchansky and Thomas's five dimensions of accessibility, the included papers were categorised to understand better the factors contributing to low healthcare accessibility among tribal women. This helped in studying the dimension responsible for low healthcare accessibility. This analysis revealed that Availability, Accessibility, and Acceptability were the primary dimensions responsible for the low healthcare utilisation observed among tribal women in India. It is imperative to prioritise these dimensions in healthcare planning to achieve Universal Health Care and Sustainable Development Goals.

Key Words*: tribal women, healthcare utilisation, Penchansky and Thomas, universal health coverage, sustainable development goal, India*

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Introduction

Global indigenous and non-indigenous people have seen unequal improvements in living standards and life expectancy in recent times. The non-indigenous population largely reaped the benefits, while the indigenous community suffered from disparities. The discrepancies may be attributed to social, cultural, and religious marginalisation and geographic isolation (Dehury et al., 2018). As per the report from the Indigenous World International Working Group on Indigenous Affairs (2006), indigenous peoples are situated at the periphery of society. They experience higher levels of poverty, lower levels of education, shorter lifespans, increased likelihood of suicide, and poorer health compared to the overall population ((Jorge Monrás, 2006; Babu, 2017). United Nations Permanent Forum on Indigenous Peoples (UNPFIP) has made some

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criteria based on which any community is indigenous or not defined. These are (a) historical continuity with pre-invasion and pre-colonial societies that developed on their territories, (b) distinctiveness, (c) non-dominance, (d) a determination to preserve, develop and transmit to future generations their ancestral territories and identity as peoples following their cultural patterns, social institutions, and legal system, (e) a strong link to territories and surrounding natural resources, (f) distinct social, economic or political systems, and (g) distinct language, culture, and beliefs (United Nations Human Rights, 2013). There is no proper definition of indigenous Peoples based on these criteria; they are defined worldwide. They are distributed worldwide, from the Arctic Ocean to the Antarctic and in both the developed and developing worlds. Hence, they live in different geographical and socio-economic settings governed by their local laws. Many indigenous tribes prefer to live in forested and rural areas due to their distinctive culture.

In contrast, a small percentage live in urban areas because of social and cultural development. Social Scientists found broadly two characteristics among the Indigenous People across the world are (a) real ancestors of original inhabitants of the region and (b) propensity to place the meaning of indigeneity within a larger context of a dichotomy between modernity and tradition. The Indigenous community is called differently in different countries in the world; for example, Aboriginal and Torres Strait Islander (Australia), the term First Nations (Canada and the United States), native Hawaiian (Hawaii), Tangata Whenua (New Zealand use), Romani people (European Country) and Tribals (African and Asian countries). Similarly, in India, they are known as Scheduled Tribes (ST), 'Adivasi,' 'Vanyajati,' 'Vanvasi,' and 'Parhari'. (Xaxa, 1999; Srivastava, 2008; Popova–Gosart, 2012).

Based on specific criteria, the countries give the status of Indigenous community to the country's population. The President of India notifies the lists of ST under Articles 341 and 342 of the Constitution of India (Government of India and Mani, 2024). Presently, there are five criteria under which the status of ST is given to a particular community in India; these are as follows: (i) indications of primitive traits, (ii) distinctive culture, (iii) geographical isolation, (iv) shyness of contact with the community at large, and (v) backwardness. These criteria are not mentioned in India's constitution, given by Lokur Committee in 1956 (Lokur et al., 1965). These criteria are given by the committees appointed based on the community's present status. Based on these criteria, 705 communities in India were given the status of ST (Weaver, 2001; Sissons, 2005; Census of India, 2011; Sengupta et al., 2020).

According to Mutalik and Kumar (2019), the nation has the second-largest tribal population globally, behind Africa. According to the United Nations Permanent Forum on Indigenous Issues, 370 million Indigenous people were spread across over 70 nations, with 3-5% of the world's total population (Popova–Gosart, 2012; Chakrabarti & Masaquiza, 2021). According to the Census of India 2011, the tribal population in India accounted for 10.2 crore people, which represents 8.6% of the country's total population of 121 crore. Further, the states of Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Gujarat, Jharkhand, Chhattisgarh, Andhra Pradesh, West Bengal, and Karnataka had 83.2% of the tribal population of the total tribal population of India. These states also had high percentages of ST in the total population of the states. There is a uniform scenario across the country that tribal-dominated areas are backward and underdeveloped. Punjab, Delhi, Chandigarh, Pondicherry, and Haryana had no ST populations (Anaya, 2004; Census of India, 2011; Nayak et al., 2022).

Most tribal populations reside in forested and rural areas, rendering them the most susceptible and marginalised segments of society. According to the Global Multidimensional Poverty Index (2023), about 84% of poor people live in rural areas. The rural-urban disparities in poverty are higher in South Asia, with about 340 million (87.5%) poor people living in rural areas and 49 million (12.5%) poor people in urban areas (Oxford & Poverty Human Development Initiative & United Nations Development Programme, 2023).

As per a report by the World Bank (2011), about 54% of STs in India fall under the Poverty Line category. After Independence, the Government of India (GOI) appointed a committee headed by Elwin. He suggested adopting a protectionist approach to tribal development, but the GOI adopted an integrative approach (Elwin & Devy, 2009). The integrative approach refers to integrating tribe populations with non-tribe populations and the mainland. This approach had done more harm than good for the tribes in India. With the adoption of this approach, industrialisation and modernisation in tribal areas happened, which took their land and forest as their primary source of livelihood (Ballabh & Batra, 2015). In India, the economy has seen growth since gaining independence, leading to the country's human development. Despite issues with inequality and service quality, India's Human Development Index (HDI) increased from 0.143 in 1913 to 0.644 in 2022, from 0.247 in 1950 and 0.406 in 1975. After a decline in many years, the latest HDI gain, which places the country 134th out of 193 in the 2023–24 Human Development Report (CRAFTS, 2002; United Nations Development Programme, 2024). Human progress has not been able to extend to a specific community living in forests and rural regions, often called ST in India. This uneven progress has resulted in their marginalisation within the community. After gaining Independence, the government prioritised the advancement of ST throughout the nation by implementing several specific policies and programs. However, the ST population in the country has a high mortality and morbidity rate while having low rates of healthcare use. It underscores the need for customised strategies that effectively tackle ST individuals' distinct requirements and obstacles to prevent their exclusion from mainstream society (Mohindra & Labonte, 2010; Axelby & Thakur, 2023).

After the 75th year of Independence, along with various targeted and planned strategies, they are poorer in all indicators of development than the non-tribals in the country (Anderson et al., 2016). Bose et al. (2006) reported that the ST had elevated levels of malnutrition and a high prevalence of infectious illnesses. Tribals in India are confronted with a substantial issue of dietary inadequacy. Prevalent malnutrition is also present, namely among pregnant women (De, 2017). Contemporary healthcare progress has reduced the frequency of illnesses and augmented healthcare investigation in remote areas. This intervention did not positively impact the indigenous community's health (Thomas et al., 2015). According to a report by the Government of India Ministry of Tribal Affairs (2017), the sex ratio among tribal was 990 females per thousand males, which is above the national average of 933 females per 1000 males; about 40.6% of the tribal population live below poverty line whereas only 20.5% of non-tribal population falls below poverty line; only 10.5% of ST had tap water connection than 28.5% of the non-tribal population; the illiteracy gap was 10% between tribal population (41%) and non-tribal population (31%) in the country. As per this report, there were also health disparities among tribal and non-tribal women in India; these were as follows: (a) Life Expectancy at birth among tribals was 63.9 years whereas among the non-tribals 67 years, (b) the prevalence of anaemia was high among tribal women (65%) than non-tribal women (46.9%), (c) Infant

Mortality Rate was 74 deaths per 1,000 live births among the tribal population than 62 deaths per 1,000 live birth, (d) there were 703 cases of TB per 100,000 among STs than 256 cases of TB per 100,000 among non-STs. Hence, it can be said that the ST is relatively poorer in all development indicators than the non-STs in the country. This situation is only found among STs living in rural areas. However, the problem of STs is somehow better for those who are living in urban areas because they have better access to healthcare than their counterpart living in rural areas (Stephens et al., 2005; Census of India, 2011; Das et al., 2013; Paltasingh & Paliwal, 2014; Bang et al., 2018).

Indigenous women have a lower healthcare use rate compared to the general population. According to research, around 83% of the whole population got prenatal care from a trained healthcare professional, but tribal women had a lower rate of 73%. Contrarily, whereas around 69% of the whole population had a post-natal examination during the first two days after giving birth, indigenous women only had a rate of 59% (Contractor et al., 2018). The Regional Medical Research Centre in Bhubaneswar, Odisha, undertook another investigation. The research was carried out among four tribes of Odisha. According to the research conducted by De (2017), Bondo had the highest IMR (139.5) compared to other tribal groups, including Didayi (131.6), Juanga (132.4), and Kondha (128.7). Child mortality rates have decreased worldwide over the last forty years; nonetheless, they remain alarmingly high in low-income nations. These nations have a significant incidence of infant mortality due to the practice of home deliveries facilitated by untrained conventional healthcare providers (Shah & Dwivedi, 2013). An investigation revealed that around 80% of home births were performed by untrained healthcare personnel. The Government of India (GOI) initiated the National Health Mission and Jannai Suraksha Yojna, intending to enhance the accessibility and availability of healthcare services, specifically targeting rural regions, impoverished individuals, tribal populations, women, and children (Government of India, Ministry of Health and Family Welfare, & Maternal Health Division, 2005). However, tribal women have a poor healthcare utilisation rate mostly because they lack access to healthcare services (Sisodiya, 2008; Sarmah & Dutta, 2019; Subudhi et al., 2019).

Penchansky and Thomas (1984, p. 554) gave one very early and appropriate explanation of access to healthcare. According to them, “access may be conceived as the interface between potential users and health care resources and would be influenced by characteristics of those who supply as well as those who utilise the services”. Mooney (1983) also stated that healthcare access is related to demand and supply. These definitions are as per various scholars identified three indicators of access these were predisposing (specific cultural, social, and epidemiological factors), enabling (means for using health services), and healthcare system (resources, structures, institutions, procedures, and regulations) (Levesque et al., 2013). Fullman et al. (2018) stated that the Global Healthcare Access and Quality Index scored 54.4/1,000 in 2016, which had reduced from 42.4 in 2000, which became a challenge in achieving Universal Health Coverage (UHC). Inequalities in healthcare access between tribal and non-tribal populations have declined but are still very high (Subramanian et al., 2006; Power et al., 2020). The disparities can be reduced by improving the healthcare utilisation rate in Low-income countries. The World Health Organisation (WHO) implemented UHC to mitigate health disparities and foster equitable accessibility to healthcare (WHO, 2022). However, a significant portion of the global population, mainly including indigenous communities, lacks access to healthcare due to low healthcare utilisation among them (Gulliford et al.,

2002; Lam, 2004; Haddad et al., 2012; George et al., 2020; Murata, & Kondo, 2020; Loue, 2022; Quilliam et al., 2023).

According to Adhikari and Paria (2022), the lack of transport facilities was primarily responsible for low healthcare utilisation among tribal women in Kerala. The authors of prior research determined that it is necessary to investigate the elements contributing to the limited use observed (Prabhu et al., 2022). The Sustainable Development Goals (SDGs), endorsed by the United Nations in 2015, include a wide range of targets to ensure inclusivity and diminish disparities across different demographic segments (Dugarova, Gülasan, & United Nations Development Programme and United Nations Research Institute for Social Development, 2017; Thomas et al., 2021).

Few studies exist on tribes and tribal health (Walter & Suina, 2023). Even though various review papers studied the issue of accessibility of tribal women, we could not find any studies which used Penchansky and Thomas's five dimensions of accessibility in their studies (Penchansky & Thomas, 1984; Marrone, 2007; Mohindra & Labonte, 2010; Davy et al., 2016; Lewis & Myhra, 2018; Akter et al., 2019; Thummapol et al., 2020; Kumar et al., 2022). Van Gaans and Dent (2018) applied this model to study the healthcare accessibility issues of older people in Australia. Similarly, other authors used this model in studying the problems in different domains of healthcare systems (Durie, 2004; Fradgley et al., 2015; Badu et al., 2018; Paisi et al., 2020; Mohd Rosnu et al., 2022). Hence, the authors aimed to investigate the factors influencing healthcare accessibility among Indigenous women in India, using Penchansky and Thomas' five dimensions of accessibility. The five dimension and their factors are shown in Table 1. This research aimed to comprehensively examine the accessibility challenges encountered by tribal women in India, using the perspectives of Penchansky and Thomas as a model. This research seeks to uncover the determinants of poor healthcare use to address disparities and reduce inequalities, ultimately contributing to achieving UHC and the SDGs.

This review paper sought to comprehensively gather existing literature on Indian tribal women's access to healthcare services. Beyond this, the study aimed to identify both the factors hindering accessibility and potential strategies to overcome these challenges within this specific population.

Methods

Search strategy

The review was conducted in March 2023, utilising Google Scholar to search for relevant studies that could be included in the paper. A review paper is not empirical or based on secondary data; instead, it is conducted based on the findings of others. It organises relevant literature in a well-structured manner and often presents new findings. Writing a review paper is crucial for presenting current, organised literature on a particular subject, outlining the benefits and drawbacks of various approaches, and spotting current research gaps. Review articles help with research integration and synthesis, provide insights for formulating policies and evidence-based care, and give the most recent data. Finally, they play an important role in furthering knowledge by critically analysing and synthesising current material, as noted by Ramdhani et al. (2014) and Palmatier et al. (2018).

One of the challenges associated with review papers is the absence of a universal methodology. Consequently, a review paper's methodology section is

typically shorter than research papers, where adherence to well-defined steps is crucial. In research papers, the methodology section discusses the advantages and disadvantages of a particular methodology for the study. In contrast, review papers follow a more straightforward approach. They commence with a search for relevant literature, often using databases such as PubMed, ScienceDirect, SCOPUS, Web of Science, and Google Scholar. The exploration of relevant literature in these databases is facilitated using keywords. For our review, we conducted a comprehensive search for relevant journal articles in Google Scholar, sifting through a database of 18,500 studies based on our specified keywords. We meticulously reviewed this database and selectively included only the most pertinent papers for our research (Webster & Watson, 2002; Kallestinova, 2011; Snyder, 2019).

There are various approaches to writing a review paper, and one notable method is the systematic review, commonly employed in medical and social sciences. A systematic review is the gold standard for conducting review papers in these fields. It involves identifying and analysing relevant research papers using predefined methods and processes, minimising biases, and providing scientific conclusions that inform policy decisions. A systematic review comprises the following elements: (a) Formulate the research question; (b) Set inclusion or exclusion criteria; (c) Select and access the literature; (d) Assess the quality of the literature included in the review; (e) Analyse, synthesise, and disseminate the findings. In our review, we incorporated only the first four components of the systematic review and excluded the fifth component, assessing the quality of the literature included in the review (Grant & Booth, 2009; Gulpınar & Guclu, 2013; Whitty, 2015; Wee & Banister, 2016; Hart, 2018; Alexander, 2020).

Inclusion and exclusion criteria

The inclusion criteria comprised English-language publications published between 1995 and 2023, emphasising peer-reviewed academic publications. We specifically sought publications addressing the unique challenges faced by tribal women in accessing healthcare. Our participant pool encompassed publications related to the health concerns of various groups, including tribal women, adolescents, pregnant women, married or single women aged 15 and older, and elderly tribal women. The research also considered health concerns within inter-tribal or intra-tribal contexts. The final selection process involved examining abstracts and finalising with the inclusion of 53 papers: 36 studies based on primary data, 13 studies based on secondary data, and four review articles.

Exclusions were made for studies focusing on migrating tribal women's healthcare accessibility and publications addressing indigenous men's health concerns. The study consisted of all published works concentrating on the health concerns of tribal communities in India, covering women of various age groups within or across different tribes. Notably, studies primarily focusing on tribal children and migrating tribal women were excluded from consideration.

Table 1. Penchansky and Thomas' five dimensions of accessibility

Dimen-sions	Definition	Factors
Availabi-lity	Relationship between the volume and type of services (and resources) and the clients' volume and needs.	Physicians; Dentists; Clinics; Hospitals; programs and services; mental health and emergency care

Accessibility	Relationship between the location of supply and the location of clients.	Transportation resources Travel time; Distance; Cost
Accommodation	Relationship between how the supply resources accept clients and the clients' ability to accommodate this	Appointment systems; hours of operation; walk-in facilities; telephone services
Affordability	the relationship between prices of services and providers' insurance or deposit requirements and the client's income, ability to pay, and existing health insurance.	total cost; knowledge of prices; possible credit arrangement
Acceptability	Relationship between clients' attitudes about personal practice characteristics of existing providers.	Age; Sex; Location and type of facility; Religious affiliation of Provider; Provider's attitude; clients' characteristics; Ethnicity; Patient payment sources

Source: Penchansky and Thomas, 1984

Data extraction and analysis

The paper selection adhered to rigorous inclusion and exclusion criteria. After being chosen, the papers were transferred to an Excel spreadsheet for further examination. These papers were classified based on Penchansky and Thomas' five accessibility dimensions. Table 1 shows the dimensions and their factors proposed by Penchansky and Thomas. In addition, we have compiled essential information from the chosen studies into a summary shown in Table 2. This table provides information such as publication, research design, purpose, location, and primary results, summarising each paper's contribution.

Table 2. Summary of selected papers

Publication	Study Design	Purpose	Location	Main Findings
Sethi et al. (2017)	Exploratory mix-methods design	Tribal women health	Jharkhand, West Bengal and Chhattisgarh	SHG federations can be empowered for nutrition promotion, resolving local health issues, and delivering services to the community
Negi and Singh (2019)	Review	Tribal health	India	Poor socio-economic, health, and sanitation conditions increase vulnerability to disasters and health issues among tribal populations.
Negi and Azeez (2022)	Review	Tribal health	India	Tribal areas suffer from limited healthcare availability, accessibility, and affordability.
Prema et al. (2020)	Review	Tribal women health	India	Lack of proper infrastructure hinders access to medical facilities for tribal women.
Islary (2014)	Review	Tribal health	India	Tribal individuals struggle between traditional practices and modern healthcare systems.
Panda and Subudhi (2020)	Secondary data	Child and Maternal tribal health	Odisha	Tribal maternal and child healthcare (MCHC) indicators lag behind national standards, requiring multipronged approaches.
Poel and Speybroeck (2017)	Secondary data	Tribal Health	India	Barriers to healthcare are more cultural and social than geographic, highlighting the need for culturally

				sensitive interventions.
Haddad et al. (2011)	Secondary data	Tribal Health	Kerala	Community-based health solidarity schemes improve equity, but inclusion of the most vulnerable groups like Paniyas is difficult
Prusty (2014)	Secondary data	Tribal women health	India, Jharkhand, Madhya Pradesh, and Chhattisgarh	Low contraceptive use among tribal women stems from fear, inaccessibility, and poor knowledge
Susuman (2012)	Secondary data	Tribal women health	India	Full antenatal check-ups significantly improve institutional delivery rates among tribal women; economic and social improvements are necessary.
Sharan and Tiwari (2020)	Mix of secondary and primary data	Tribal women health	Chhattisgarh	Motorbike ambulances reduce healthcare barriers for remote tribal communities.
Sakjani (2008)	Primary data	Tribal women health	India	Tribals face poor living conditions, malnutrition, high mortality, food taboos, and lack of healthcare access.
Adhav and Gawde (2015)	Primary data	Tribal women health	Maharashtra	Women's autonomy positively impacts maternal health utilisation, but cultural factors continue to limit service use despite financial incentives.
Mog et al. (2020)	Secondary data	Tribal Women Health	Northeast India	Low contraceptive use (60%) among tribal women requires targeted strategies.
Kandamuthan and Madhireddi (2016)	Mix of secondary and primary data	Tribal Health	Odisha	Health policy implementation faces barriers like malnutrition, poor sanitation, poverty, and geographic inaccessibility in tribal regions.
Santhosam and Samuel (2013)	Primary data	Tribal Women Health	Tamil Nadu	Elderly tribal individuals face significant health issues (hypertension, arthritis) and poor access to healthcare.
Contractor et al. (2018)	Primary data	Tribal Women Health	Odisha	Maternal health services must respect tribal cultural practices and invest in building trust.
Bhasin (2004)	Primary data	Tribal Women Health	Rajasthan	Social structure and women's status are critical factors influencing the low utilisation of maternal health services.
George et al. (2020)	Primary data	Tribal Health	Kerala	Despite financial protections, healthcare services fail due to cultural insensitivity, discrimination, and lack of community involvement.
De (2017)	Primary data	Tribal Health	India	Poor sanitation, poverty, and unsafe drinking water lead to high disease rates and poor maternal and child health indicators.
Shah and Dwivedi (2013)	Primary data	Tribal Women Health	Gujrat	Traditional practices challenge essential newborn care, and superstitions like "Ratewa" contribute to neonatal deaths.
Purohit (2021)	Primary data	Tribal Women	Himachal Pradesh	High ANC utilisation among tribal women is difficult; quality ANC

		Health		services need to be accessible locally.
Jungari and Paswan (2019)	Primary data	Tribal Women Health	India	Health providers should promote male participation.
Babu (2017)	Primary data	Tribal Women Health	India	Strengthening social determinants of health can improve reproductive health.
Birje et al. (2022)	Primary data	Tribal Women Health	Maharashtra	Lack of NCD awareness, health facilities, and reliance on traditional healers hinder tribal women's health.
Panda (2005)	Mixed method of Primary and Secondary data	Tribal Women Health	Odisha	Major health issues like diarrhoea, typhoid, and anaemia are linked to poor nutrition, unhealthy surroundings, and lack of healthcare facilities.
Yadav et al. (2011)	Primary data	Tribal Women Health	Karnataka	Socio-economic vulnerability and traditional beliefs hinder ANC use; improved MCH care can mitigate issues.
Sabar (2022)	Primary data	Tribal Health	Odisha	Reliance on traditional healthcare persists due to cultural values and poor modern institutions; documenting traditional practices is critical.
Sarmah and Dutta (2019)	Primary data	Tribal Women Health	Assam	Many tribal women prefer traditional healing, but awareness and utilisation of government healthcare schemes are increasing gradually.
Babu et al. (2013)	Primary data	Tribal Women Health	India	High home delivery rates persist; safe home deliveries in inaccessible areas must also be supported.

Source: Prepared by the authors

Results

Figure 1 depicts the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 flowchart illustrating the study selection for the review paper. PRISMA 2000 is an updated version of PRISMA 2009, introduced to give a framework for studying literature reviews. PRISMA 2000 consisted of seven sections and 27 items. It deals with all types of studies, quantitative and qualitative, as well as all types of new and old systematic reviews. Furthermore, it also deals with review articles that studied the effect of health intervention (Page et al., 2021; Sarkis-Onofre et al., 2021). The keywords chosen generated a database of 18,500 studies in Google Scholar. Out of this database, 520 articles were included for further screening. After studying the abstract of 520 studies, 467 studies could not be included because they did not meet the inclusion requirements. After going through inclusion and exclusion criteria and reading the abstract, 53 studies were finally included in this study (Figure 1). The review encompasses 36 primary data-based studies, 13 secondary data-based studies, and four review papers published in academic publications.

Table 3 provides a succinct overview of the 53 selected papers in the manuscript. This categorisation aids in understanding the significance of each dimension concerning healthcare among tribal women in India. Subsequently, we

identified 14 studies addressing the accessibility dimension, 12 studies focusing on the acceptability dimension, nine studies addressing the accommodation dimension, five studies dealing with the availability dimension, and three studies on the affordability dimension. Consequently, it can be inferred that accessibility predominates over all other dimensions of healthcare.

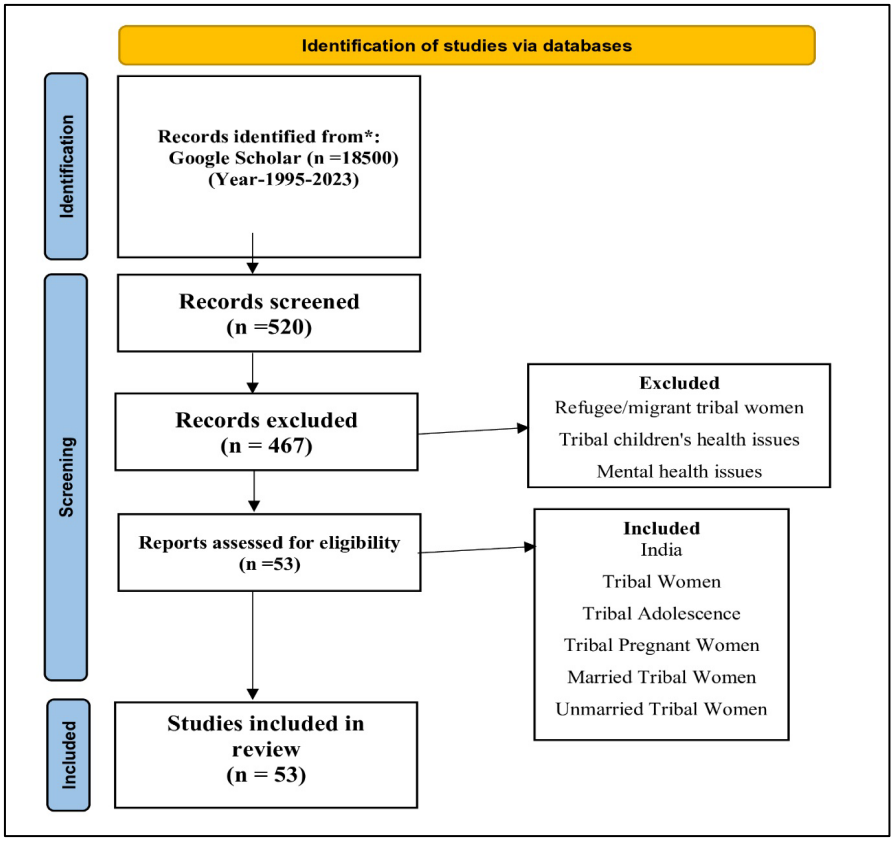

Figure 1. PRISMA Flowchart, 2020

Source: Prepared by the authors

Table 3. Studies including healthcare accessibility according to Penchansky and Thomas' five dimensions of accessibility

Publication	Availa-bility	Accessi-bility	Accom-modation	Afforda-bility	Accepta-bility
Sethi and et al. (2017)	✓	×	✓	×	×
Negi and Singh (2019)	✓	✓	✓	×	×
Negi and Azeez (2022)	✓	✓	✓	×	×
Prema et al. (2020)	✓	×	×	×	×
Islary (2014)	×	×	×	×	✓
Poel and Speybroeck (2017)	×	✓	×	×	✓
Haddad et al. (2011)	×	×	✓	×	×
Prusty (2014)	×	✓	✓	×	✓
Susuman (2014)	×	×	×	✓	×
Sharan and Tiwari (2020)	×	✓	×	×	×
Sakjani (2008)	✓	×	×	×	✓

Adhav and Gawde (2015)	×	×	×	×	✓
Mog et al. (2020)	×	✓	×	×	×
Kandamuthan & Madhireddi (2016)	×	✓	✓	✓	×
Santhosam and Samuel (2013)	×	✓	×	×	×
Contractor et al. (2018)	×	×	×	×	✓
George et al. (2020)	×	✓	×	×	×
De (2017)	×	×	×	×	✓
Shah and Dwivedi (2013)	×	×	×	×	✓
Purohit (2021)	×	✓	×	×	×
Jungari and Paswan (2019)	×	×	×	×	✓
Babu (2017)	×	×	×	✓	×
Birje et al. (2022)	×	×	✓	×	×
Panda (2005)	×	✓	×	×	×
Yadav et al. (2011)	×	×	✓	×	×
Sabar (2022)	×	×	×	×	✓
Samrah and Dutta (2019)	×	✓	×	×	✓

Source: Prepared by the author

Discussion

Penchansky and Thomas (1984) stated, "access of care as a fit between characteristics and expectations of the providers and clients". The papers included in this review are categorised according to Penchansky and Thomas' five dimensions of accessibility. The individual dimensions consisted of factors with the help of this, the challenges and solutions of tribal women's healthcare accessibility were studied in the review paper, which were as follows:

Availability

The first dimension of Penchansky & Thomas's accessibility was availability. The problems and solutions identified with the help of this dimension. The problems arose from several sources. The challenges encompassed insufficient healthcare personnel and resources, acts of violence targeting healthcare providers, the issue of tribal women feeling excluded from healthcare services, limited participation of tribal women in healthcare institutions, absence of specialised doctors catering to their needs, the concentration of health centres in specific locations, and inadequate awareness about healthcare programs and the significance of good health (Panda, 2005; Sakjani, 2008; Yadav et al. , 2011; Babu et al., 2013; Santhosam & Samuel, 2013; Shah & Dwivedi, 2013; Islary, 2014; Sethi et al., 2017; Samrah & Dutta, 2019; George et al., 2020; Prema et al., 2020; Purohit, 2021; Negi & Azeez, 2022). The obstacles to implementing programs and services for indigenous women's health include limited financial resources, a high incidence of illnesses, a disadvantaged socio-economic position, and substandard quality of life among tribal women. The proposed strategies involve the efficient implementation and realignment of programs and services, expanding the accessibility of high-quality healthcare services in rural regions, incorporating and recording indigenous healthcare practices and beliefs, and enhancing the awareness of tribal women in India regarding the significance of programs and services (Haddad et al., 2011; Babu et al., 2013; Kandamuthan & Madhireddi, 2016; Contractor et al., 2018; Panda & Subudhi, 2020; Purohit, 2021; Sabar, 2022).

Accessibility

The second dimension of Penchansky and Thomas' accessibility was accessibility. Table 4 presents the issues and solutions associated with the factors of the second dimension, explicitly focusing on accessibility. The author categorised the accessibility characteristics into three distinct groups: the availability of transportation resources, the journey time and distance to a health facility, and the cost. The author attempted to analyse the accessibility aspect thoroughly. The first category consisted of the available transportation resources. The issues identified within this category pertain to the inadequate and limited availability of healthcare services for indigenous women, as well as the restricted provision of auto ambulance services specifically tailored for this demographic in India. The proposed measures bolstered the healthcare infrastructure and expanded the scope of motor ambulances to include emergency treatment for accidents and other critical situations previously confined to child healthcare. The second group was distinguished by their travel time and distance to a health institution. The issues identified under this category pertain to dispersed communities and remote tribal regions that are difficult to reach. Improved accessibility and communication training for local healthcare professionals in India's tribal areas might improve the quality of medical treatment provided to women in various tribal communities. The third cohort elucidated the expenses associated with healthcare services for indigenous women. The identified problems were economic strain and destitution. Improving the quality of medical care available to tribal women in India's tribal regions was the intended answer to this problem.

Table 4. Problems and solutions identified through various factors for the Accessibility dimension of Penchansky and Thomas

Factors	Problems	Solutions	Authors
Transportation resources available	• Lack of accessibility • Low accessibility to contraception • Motor ambulance is only for childcare	• Strengthen health system • Extend motor ambulance service	• Negi & Azeez (2022) • Prusty (2014) • Sharan & Tiwari (2020)
Travel time and distance to the health facility	• Scattered settlements • Geographic inaccessibility • inaccessible tribal areas	• Needed strategies for easy accessibility • communication training to local health workers	• Mog et al. (2020) • Kandamuthan & Madhireddi (2016) • Babu et al. (2013)
Cost of the healthcare	• financial hardships • out-of-pocket expenditure	• improve quality ANC services in rural and remote areas	• Purohit (2021) • Birje et al. (2022)

Source: Prepared by the authors

Accommodation

The third dimension of Penchansky and Thomas' accessibility is accommodation. The problems discovered included a deficiency in the infrastructure and the assistance for home delivery. Improvements can be made by reorganising the maternity healthcare services that are provided to tribal women in India (Prema et al., 2020).

Affordability

The affordability aspect was the fourth feature of Penchansky and Thomas' accessibility framework. The identified problems, including acts of violence perpetrated against Self-Help Groups (SHGs), inadequate financial resources, and a substandard quality of life. It was enhanced by safeguarding Self-Help Groups (SHGs), augmenting the healthcare budget, specifically for tribal healthcare, and improving the standard of living of tribal women in India (Haddad et al., 2011; Susuman, 2012; Sethi et al., 2017).

Acceptability

The fifth component of Penchansky and Thomas' accessibility framework pertained to acceptability. Table 8 presents the problems including customs and beliefs specific to particular groups, cultural sensitivity and acceptability, fear of adverse health outcomes, avoidance of certain practices due to cultural taboos, cultural factors influencing health behaviours, poverty, social hierarchy, and the status of women, providing culturally respectful care, low educational standards, adherence to traditional or tribal newborn care methods, belief in superstitions such as "Ratewa," various physical, psychological, and financial challenges, lack of male involvement in maternal health care, the influence of local community-driven traditional and cultural factors, misconceptions, reliance on traditional healers, difficulty in prioritising health, socio-economic vulnerabilities, and preference for traditional healing practices, as identified in the review. The proposed solutions include integrating modern health systems, strengthening, empowering women and respecting their cultural needs while preserving beneficial traditional practices, involving tribal communities in health system management, implementing essential newborn care at both hospital and community levels, providing quality antenatal care services in rural and remote areas, promoting male participation, and addressing adolescent health throughout the life cycle (Bhasin, 2004; Yadav et al., 2011; Shah & Dwivedi, 2013; Islary, 2014; Prusty, 2014; Adhav & Gawde, 2015; Kandamuthan & Madhireddi, 2016; Babu, 2017; Poel & Speybroeck, 2017; Contractor et al., 2018; Jungari & Paswan, 2019; Sarmah & Dutta, 2019; George et al., 2020; Purohit, 2021; Birje et al., 2022)The review results significantly affect public and private service providers and healthcare policymakers. India has the second most substantial indigenous population globally. Their elevated morbidity and death rates were attributed to socio-economic vulnerabilities, geographical inaccessibility (residing in rural and forested regions), and cultural sensitivity. Examining the accessibility to healthcare services for indigenous women gave us insights into their challenges. Furthermore, it facilitated the identification of potential remedies that may be implemented within the subsequent policy framework. Addressing these challenges and implementing these solutions will enhance the use rate of healthcare services among indigenous women in India. Simultaneously, it was reducing illness and death rates among indigenous women at the local, regional, and national levels.

Conclusions

About 10 crore ST population live in India. Tribes are an essential component of our civilisation and have resided since the beginning of human society. They

have always been included in mainstream culture. The administration tried to assimilate with the predominant culture. Certain indigenous groups have transitioned from their woodland habitats to integrate into the dominant society. The majority of India's population resides in rural regions, with the tribes inhabiting forested areas being particularly disadvantaged. Their healthcare use is limited owing to inadequate access to healthcare services. Socio-economic and cultural issues mainly influence the obstacles to achieving accessibility. We used Penchansky and Thomas' framework of five dimensions of accessibility to categorise the various accessibility variables. We found that Availability, Accessibility and Availability dimensions were responsible for low healthcare access than Affordability and Accommodation among tribal women in India. To achieve UHC and SDGs, we need to prioritise Availability, Accessibility and Availability of healthcare.

Limitations of the study

It should be noted that this study has several limitations. First, only publications available on Google Scholar were chosen, which would have limited the literature by excluding relevant studies listed in other extensive databases like PubMed, Scopus, and ScienceDirect. Secondly, although the study was based on the five accessibility dimensions given by Penchansky and Thomas, the sixth dimension – Awareness was left out. Fourth, only papers published between 1995 and 2023 were included, which would have eliminated important research studies. Lastly, as this is a review paper, the results are based on secondary sources and no original data collection was done to confirm the results.

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