



RESEARCH ARTICLE

Cultural persistence in health-seeking behaviour: a mixed-method study of traditional healing practices among Garo tribal women in Meghalaya, India

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Abstract

The Garo tribe, one of a major indigenous communities of Meghalaya, India, relies heavily on their traditional health practices. This research investigates the healthcare-seeking behaviour of Garo women, their health concerns, their indigenous medical knowledge, and their reasons for preferring traditional over modern medicines. Conducted in East Garo Hills, Meghalaya, quantitative data ($N = 96$) were randomly collected from Garo women aged 15–49 through interviews to understand their health-seeking behaviour. Following a preliminary analysis, qualitative data ($N = 12$) were gathered through in-depth interviews to identify common illnesses, dimensions of traditional medicines, and reasons for dependency on them. Thematic analysis was performed using Atlas Ti. The result shows that almost 84% of Garo women ($N = 86$) seek treatment from *Ojha* (traditional healer) for *achik* (traditional) medicine, with only 6% using modern health facilities and 10% relying on herbal home remedies. Garo women rely on their age-old traditional remedies for health issues, irrespective of their educational or economic status. From the qualitative findings, this study explores the Garo tribe's unique traditional medicine, known as '*achik* medicine', prepared through local herbs and plants, and is disseminated by traditional healers, or '*ojhas*', whose knowledge is generational. Moreover, every Garo household possesses medicinal plants, and all are knowledgeable about their use. Major health issues faced by Garo women are menstrual disorders, post-delivery weakness, fever with severe headache and jaundice. Reasons for using *achik* medicines are more effectiveness than modern medicines, cultural identity, preference for natural remedies, efficiency of *Ojhas*, availability, accessibility, and affordability of *Ojhas*. Meanwhile, the reasons for using limited use of modern healthcare facilities are poor quality of service and remote location. This study underscores the importance of preserving indigenous knowledge systems and respecting cultural heritage while ensuring the well-being of marginalised communities. Additionally, it highlights the need to improve modern healthcare quality and public transportation in the region.

Keywords: Traditional medicine; traditional healer (*Ojha*); qualitative study; Garo tribe; India

Introduction

Traditional medicine is defined as '*the sum total of the knowledge, skill, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness*' (WHO, 2023). Various systems of traditional medicine being used around the world include acupuncture, herbal medicines, traditional European medicine,

traditional Chinese medicine, traditional Korean medicine, traditional African medicine, Ayurveda, Siddha medicine, Unani, naturopathy, homeopathy, chiropractic, osteopathy, medieval Islamic medicine (Che *et al.*, 2017; Park *et al.*, 2012; WHO, 2019; Yuan *et al.*, 2016). In India, it is not just a type of medical treatment but also a way of life deeply rooted in their civilisations. It traces back to the ancient texts of *Ayurveda*, which means ‘knowledge of life’, emphasising a balance between mind, body and spirit (Mukherjee *et al.*, 2017; Pandey *et al.*, 2013; Subhose *et al.*, 2005). This method is built on in-depth knowledge of regional plants, minerals, herbs, roots, and other natural resources passed down through the years, fostering the collective wisdom of tribe healers and shamans (Parasuraman *et al.*, 2014; Patwardhan *et al.*, 2004).

The utilisation of traditional and complementary medicine (TCM) has been noted in several studies. In a 32-country study, the prevalence of TCM use in the past year was 26.4%, while in another nine high-income countries study, it was found to be 21.1% (Harris *et al.*, 2012; Peltzer & Pengpid, 2018). Additionally, a previous study reported that 6.5% of middle-aged and older adults had utilised AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy) practitioners in the past year, and 7.0% had consulted traditional healers in India (Pengpid & Peltzer, 2021). Interestingly, utilisation was observed to be particularly high in certain geographic areas, such as states, and among specific groups, including tribal and minor religious communities (Samal & Dehury, 2019). A few prior studies stated that despite the accessibility of modern healthcare facilities, many people still place their trust in the traditional therapies provided by their local healer, who lacks any formal training that has stood the test of time (Boro & Saikia, 2020; Reddy *et al.*, 2023; Sundararajan *et al.*, 2013).

This alternative medicine system is observed to be prevalent among the Scheduled Tribe population in India. According to the Imperial Gazetteer of India, ‘A Tribe is a collection of families bearing a common name, speaking a common dialect, occupying or professing to occupy a common territory and is not usually endogamous though originally it might have been so’. According to Article 366(25) of the Constitution of India, Scheduled Tribes are ‘tribal communities or parts of tribal communities that are declared as such by the President of India through a public notification’. They are identified based on indications of primitive traits, distinctive culture, geographical isolation, shyness of contact with the larger community, and overall backwardness. The purpose of defining them as ‘Scheduled’ is to provide social justice and integrate them into mainstream society. The Scheduled tribe of India constitute 8.6 percent of the country’s total population and are located in the farthest reaches of remote India, tucked away between thick woods, mountains, and green landscapes (Census, 2011; Xaxa, 1999). They have found solace in their unique cultural identities and age-old traditions and relied on their traditional healing system, which is closely connected to their way of life, philosophy, and spirituality for a variety of physical and spiritual ailments (Bhasin, 2002; Shankar *et al.*, 2012). For example, the Santhals in the eastern states have developed an Ayurvedic-like treatment based on ‘*Panchamohobhuta*’, while the Bhils in Western India and Gonds of central India practice animistic spiritual rituals (Karua, 2015; Sahay, 2022; Shukla & Chakravarty, 2010). Additionally, the Nagas and Mishings in the northeast have developed intricate herbal medicine systems (Semy & Kuotsu, 2023; Shankar *et al.*, 2012).

In northeast India, the Scheduled tribe comprises 27.3 percent of this region’s population. This region has remained isolated from the rest of the country because of its location and terrain, making it challenging to access healthcare facilities, leading to a heightened risk of preventable illnesses and complications. In this region, Meghalaya is a diverse and distinct state in political, social, and cultural spheres, making it socio-culturally different from the rest of India. In Meghalaya, the Scheduled Tribe population accounts for 86.5 percent of the state’s residents (Census, 2011). Several prior studies have reported a high reliance on traditional medicine from tribal healers in this state (Albert *et al.*, 2019; Chandra, 2023; Langshiang *et al.*, 2020).

However, with the implementation of the National Rural Health Mission (NRHM) in 2007, AYUSH was integrated into the mainstream healthcare system, allowing individuals to choose

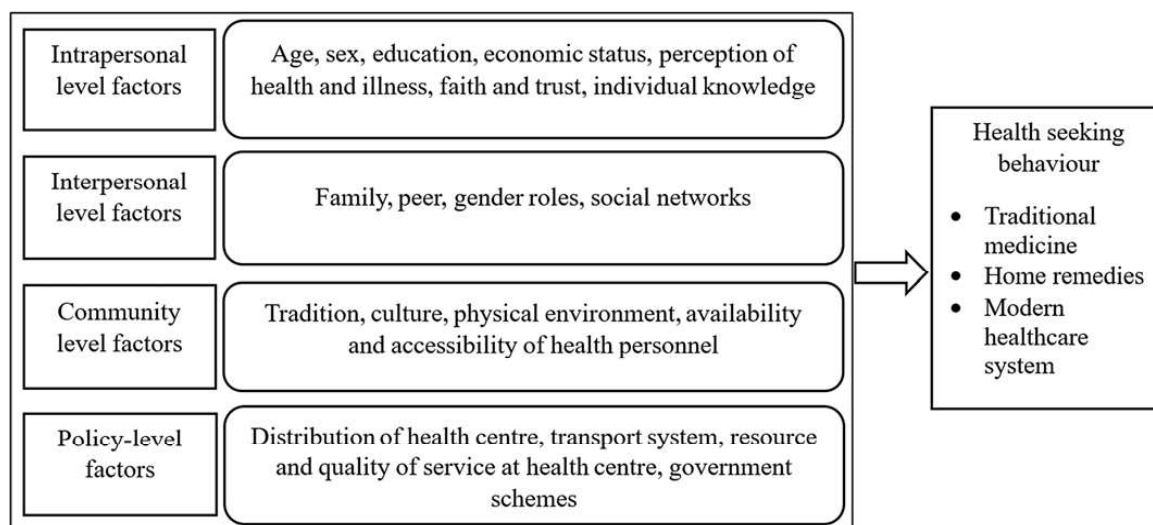


Figure 1. Socio-Ecological Model for Identifying the Factor Influencing Health-Seeking Behaviour.

treatments such as Homoeopathy, Ayurveda, Yoga, and Naturopathy. Over time, AYUSH has grown and is currently available in all eleven districts of Meghalaya. The outpatient department (OPD) providing AYUSH treatments has been established in district hospitals, community health centres, primary health centres, and dispensaries. One earlier study revealed that the use of tribal medicine in rural households across Meghalaya was 79.1%, but the majority had not heard of the AYUSH system and had little local acceptance (Albert *et al.*, 2015; Albert & Porter, 2015).

Previous research has explored the health-seeking behaviour of tribal populations, which is influenced by their socioeconomic condition, adverse location and poor communication. Existing literature often focuses on broader aspects of traditional medicine in India or the Northeast region without delving deeply into the nuanced practices and cultural significance unique to the Garo community. There is a scarcity of studies that investigate the reasons behind the popularity of traditional healing practices among tribal communities despite the availability of modern healthcare services and several government initiatives in Meghalaya. With this background, this study has at first identified the healthcare-seeking behaviour quantitatively and qualitatively investigated the indigenous medical knowledge of Garo women and their health concerns and addressed the gap by examining why traditional medicine from traditional healers is preferred over modern healthcare in Meghalaya and why tribal communities do not utilise government health facilities.

Conceptual framework

There are several theoretical models of health-seeking behaviour. The social-ecological model (SEM) offers a comprehensive approach for understanding and addressing the various levels of influence on health behaviours and outcomes (Figure 1). It encompasses an individual's perceptions, cultural beliefs, and knowledge and provides a multidimensional perspective that goes beyond individual choices to include interpersonal relationships, community norms, organisational factors, and broader societal dynamics (McLeroy *et al.*, 1988; Rimer & Glanz, 2005). Approaches focusing solely on individual-level factors may overlook the systemic influences shaping health-seeking behaviour, and SEM offers a more comprehensive understanding of these factors (Lounsbury & Mitchell, 2009).

A few earlier studies have shown that local cultural, social, and environmental factors likely play a significant role in shaping the health of Indigenous people (Deb Roy *et al.*, 2023; Redvers

et al., 2023). This study uses this framework to understand how various factors impact health-seeking behaviours, from personal beliefs to community resources and societal norms.

Data and methods

Study setting and study participants

The research was carried out in May 2023 in the East Garo Hill district, which is situated 244 kilometres away from Shillong, the capital of Meghalaya. This particular district was selected intentionally due to the significant presence of the Garo tribe. The Garo people make up approximately one-third of Meghalaya's population and live in the Garo hills. They are listed as 'Scheduled Tribe' as per the constitution of India. They belong to the Tibeto-Burmese ethnic group, and their traditional animist religion is called '*Songsarek*'. However, at the present time, most of them converted to Christianity. Our study included participants from the Garo community who only practice Christianity. Their language is called '*Achikku*'.

Study design

The study adopted a three-stage sampling design to choose respondents. In the first stage, two blocks, Rongjeng and Songsek, were randomly selected from the five blocks of the aforementioned district. Secondly, eight villages (4 each from each block) were randomly selected after listing all villages. The district's hospital (Willimnagar Civil Hospital) is located at a distance of at least 25 to 70 kilometres from the villages. Primary health centres (PHC), sub-centres, or community health centres (CHC) are accessible within a range of 2 to 15 kilometres. Thirdly, 96 (12 from each village) women aged 15–49 were randomly selected for interview.

The following formula was used to calculate the sample size for this study; this method is widely used in cross-sectional studies to estimate the prevalence of an unknown parameter (Cochran, 1977).

$$\text{sample size } (n) = \frac{Z^2 p(1-p)}{d^2}$$

where n is the sample size, Z is the statistic corresponding to the confidence level, p is the expected prevalence, and d is the margin of error. In this study, with a 95% confidence level ($Z \approx 1.96$), the p is considered 0.5 (for maximum variability, as there is no previous study on this for this particular community in this study area), and a margin of error $d = 0.1$ (10%), the sample size calculation would be 96. This sample size can be justified based on a combination of statistical calculations, practical constraints (available resources such as time, cost, and manpower), and objectives of the study.

In this explanatory study, the first author first collected the quantitative data, and after a preliminary analysis of quantitative information, the qualitative data were gathered.

Data collection methods

Quantitative data collection: Quantitative data ($N = 96$) were collected through an interview schedule to understand the health-seeking behaviour of Garo tribal women. At first, the women were asked, 'Have you fallen sick in the past six months? If yes, have you sought treatment at a healthcare facility?' After that, they were asked, 'What type of treatment it was?' Apart from that, the background characteristics of respondents, such as age, educational qualification, household

wealth¹, occupation, relationship with household head, and distance to the nearest health centre were collected.

Qualitative data collection: After the quantitative data collection, qualitative data were collected through 12 in-depth interviews (IDIs) conducted with Garo women aged 15–49. The sample size was decided based on sample sizes for saturation in qualitative research for homogenous study populations (Boddy, 2016; Hennink & Kaiser, 2022). To minimise potential personal bias, semi-structured interview guides were developed and used. Participants were asked about their illnesses, different dimensions of traditional medicines, reasons for dependency on traditional medicines, and quality of care in the government health centres.

Data analysis

Descriptive statistics were used for the preliminary quantitative analysis. Thematic analysis was used for qualitative analysis. The typed transcripts were reviewed for accuracy, completion, and familiarisation and were read by authors. A word cloud was created from the in-depth interviews to identify the illness faced by Garo women. It is a popular way to visualise qualitative data composed of text where the size of a word represents its frequency (DePaolo & Wilkinson, 2014; Heimerl *et al.*, 2014). Atlas Ti was used to analyse the qualitative data. The qualitative survey and analysis have been conducted using the guideline of consolidated criteria for reporting qualitative studies (COREQ) (Appendix A1) (Tong *et al.*, 2007).

Results

Characteristics of the study participants

Table 1 presents the characteristics of Garo women interviewed in the study to explore health-seeking behaviour through the interview schedule. The data indicate that of the total women, 7.3% were under 20, 37.5% were between 21–30, 35.4% were between 31–40, and 19.8% were over 40 years old. Regarding education, 41.7% of the women either lacked formal educational qualifications or had only primary education, while 45.8% had attained secondary education. Regarding occupation, the majority of women (39.6%) were cultivators, 22.9% were housewives, and 15.6% were shopkeepers. Furthermore, 60.4% of women were heads of their households, with the remainder being daughters of the household head. Concerning access to healthcare facilities, 25.0% of women had a public health centre within 5 km of their household, 50.0% had one within 5–10 km, and 25.0% had to travel more than 10 km to reach a public health centre.

The socio-demographic profile of Garo women who participated in qualitative in-depth interviews is displayed in Table 2.

Healthcare-seeking behaviour of Garo Tribal women

Table 3 displays the healthcare-seeking behaviour of Garo women. In this study, among the 96 interviewed women, 86 women stated that they had fallen sick in the last six months. Among the 86 women, the data (N = 86) indicate that a majority of women, almost 84%, seek treatment from Ojha for *achik* medicine, while only 6% opt for modern health facilities. An additional 10% of women do not visit any healthcare providers and instead rely on traditional herbal home remedies for their treatment. It is worth noting that there appears to be no discernible pattern in utilising modern healthcare services based on age, education, or household wealth. Traditional health remedies, including *achik* medicine and herbal home remedies, are prevalent among women from

¹Wealth tertile was created using PCA (principal component analysis). The household variables include house type, floor material, roof material, wall material, toilet facility, drinking water facility, electricity, television, radio, bicycle, motorcycle, car, refrigerator, mobile, laptop, cooking fuel, and number of rooms.

Table 1. Socio-Economic and Demographic Profile of Garo Women Respondents in the Quantitative Survey, East Garo Hill District, Meghalaya (Primary Field Survey During May 2023)

Background characteristics	Percentage	Total sample (N = 96)
Age groups (in years)		
Less than 20	7.3	7
21–30	37.5	36
31–40	35.4	34
More than 40	19.8	19
Educational qualification		
No education and primary	41.7	40
Secondary	45.8	44
Higher secondary and above	12.5	12
Household wealth tertile		
Poor	16.7	16
Middle	49.0	47
Rich	34.4	33
Occupation		
Student	12.5	12
Housewife	22.9	22
Cultivator	39.6	38
Shopkeeper	15.6	15
Other	9.4	9
Relationship with household head		
Head	60.4	58
Daughter	39.6	38
Distance from nearest public health centre		
Less than 5 km	25.0	24
5 to 10 km	50.0	48
More than 10 km	25.0	24

all educational and economic backgrounds. Furthermore, it is noteworthy that 86.4% of women prefer *achik* medicine from *Ojha*, while only 4.6% opt for modern public health facilities, despite a health centre being located within 5 km of their village. Moreover, 81.6% of women prefer *achik* medicine when it is 5–10 km away from their village, and 85.0% when it is more than 10 km away.

Health issues faced by Garo women—Findings from in-depth interview

One of the major health issues that young women have been struggling with is a menstrual disorder. As per their report, they experience bleeding for more than two weeks, which is known as menorrhagia. During this time, they feel incredibly weak and fatigued. If they don't seek any treatment, it can even last up to a month, which is quite distressing. Another one is amenorrhoea.

Table 2. The Socio-Demographic Profile of Garo Women Who Participated in Qualitative In-Depth Interviews (Qualitative Field Survey Conducted in May 2023)

Serial No	Age	Level of education	Marital status	Occupation	Relationship with the household head
1	22	College student	Unmarried	Student	Daughter
2	33	Upto 5 th standard	Married	Momo seller	Head
3	26	Upto 5 th standard	Married	cultivator	Head
4	27	Upto 9 th standard	Married	Housewife	Daughter
5	38	Upto 8 th standard	Married	cultivator	Daughter
6	29	Upto 4 th standard	Married	cultivator	Head
7	45	Upto 4 th standard	Married	cultivator	Head
8	43	Upto 12 th standard	Married	Non-teaching staff at school	Head
9	35	Upto 4 th standard	Married	Housewife	Daughter
10	25	B.Ed	Married	Teacher	Daughter
11	42	Upto 5 th standard	Married	cultivator	Head
12	48	Illiterate	Married	Vegetable seller	Head

Some women don't get their menstrual bleeding for 3 or 4 months. As per their experience, these conditions can have adverse effects, particularly on pregnancy.

'I am grappling with a menstrual disorder known as amenorrhea, wherein I have not menstruated for the past two months'. ————(26 years old Garo women)

Additionally, many women experience post-delivery weakness, known as 'bolsuda', which can further complicate their health. Apart from that, women also suffer from white discharge.

'Currently, I am suffering from 'bolsuda'. Bolsuda is a weakness that is felt after child delivery. Two months ago, I delivered a baby boy'. ————(27 years old Garo women)

Apart from those reproductive health issues, another major health issue mentioned by Garo women is fever with a severe headache.

'I often face this severe headache. Yes, it can be quite debilitating. Sometimes, it can even drive someone to the point of madness'. ————(33 years old Garo women)

Women are also suffering from respiratory diseases as they use uncleaned fuel. Unclean fuels are polluting fuels used for cooking, such as kerosene, coal, wood, charcoal, straw, shrubs, grass, agricultural crops, and animal dung. Although the government has implemented Ujjwala Yojana, women can't afford the cylinders. As a result, they use readily available wood as cooking fuel.

'Actually, madam, I cook food for my family using firewood in the kitchen. The smoke makes the air inside bad and can cause health issues like breathing problems'. ————(26 years old Garo women)

Table 3. Healthcare-Seeking Behaviour for Women for their Health Issues, East Garo Hill District, Meghalaya (Primary Quantitative Field Survey During May 2023)

Background characteristics	Number and percentage of women's preference for healthcare			Total number of women who fall sick in the last six months
	Traditional herbal home remedies	<i>Achik</i> medicine from <i>Ojha</i> (Traditional healer)	Modern healthcare system	
Overall	9 (10.5%)	72 (83.7%)	5 (5.8%)	86
Age groups (years)				
Less than 20	0 (0.0%)	4 (80.0%)	1 (20.0%)	5
21–30	4 (11.4%)	30 (85.7%)	1 (2.9%)	35
31–40	2 (6.5%)	27 (87.1%)	2 (6.5%)	31
More than 40	3 (20.0%)	11 (73.3%)	1 (6.7%)	15
Educational Qualification				
No education and primary	3 (8.3%)	31 (86.1%)	2 (5.6%)	36
Secondary	4 (10.5%)	32 (84.2%)	2 (5.3%)	38
Higher secondary and above	2 (16.7%)	9 (75.0%)	1 (8.3%)	12
Household wealth tertile				
Poor	2 (12.5%)	13 (81.3%)	1 (6.3%)	16
Middle	5 (12.2%)	34 (82.9%)	2 (4.9%)	41
Rich	2 (6.9%)	25 (86.2%)	2 (6.9%)	29
Occupation				
Student	2 (20.0%)	7 (70.0%)	1 (10.0%)	10
Housewife	1 (4.8%)	19 (90.5%)	1 (4.8%)	21
Cultivator	4 (11.8%)	29 (85.3%)	1 (2.9%)	34
Shopkeeper	2 (15.4%)	10 (76.9%)	1 (7.7%)	13
Other	0 (0.0%)	7 (87.5%)	1 (15.5%)	8
Relationship with the household head				
Head	7 (13.2%)	43 (81.1%)	3 (5.7%)	53
Daughter	2 (6.1%)	29 (87.9%)	2 (6.1%)	33
Distance from the nearest public health centre				
Less than 5 km	2 (9.8%)	19 (86.4%)	1 (4.6%)	22
5 to 10 km	5 (11.4%)	36 (81.6%)	3 (6.8%)	44
More than 10 km	2 (10.0%)	17 (85.0%)	1 (5.0%)	20

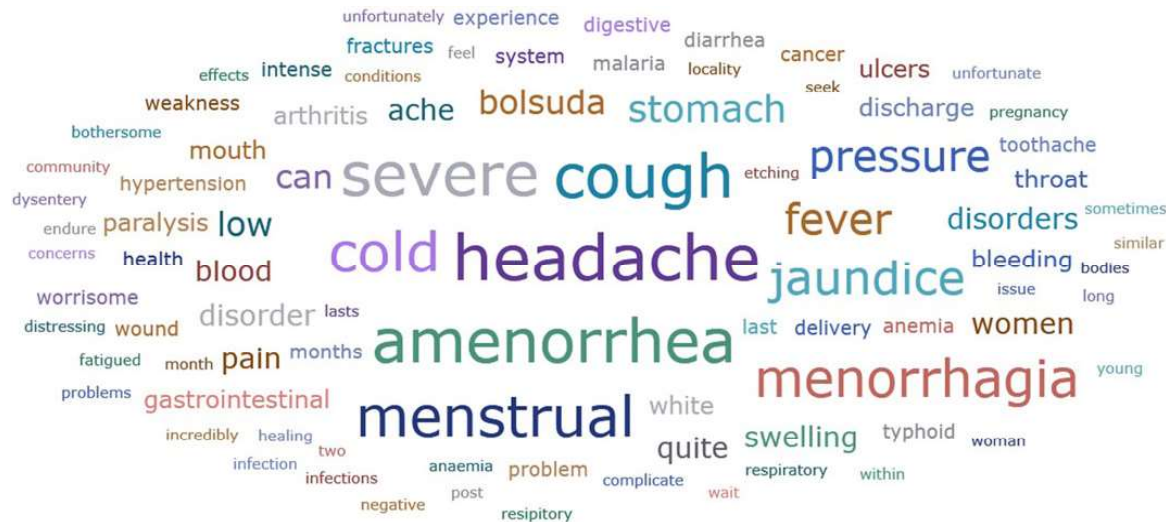


Figure 2. Word Cloud of Different Types of Health Issues Faced by Garo Women Participants, East Garo Hill District, Meghalaya (Primary Qualitative Field Survey During May 2023).

'Ma'am, I got the LPG gas cylinder under the Ujjwala Yojana, but only the first one was free. After that, we have to pay for the cylinders, and it's really hard for my family to afford it. The cost is too much for us, so I use wood for cooking because it's easier to get and doesn't cost money like the gas does'. —————(48 years old Garo women)

This study has found that jaundice and gastrointestinal problems are also prevalent for Garo women. This is mainly due to the use of unimproved sources of drinking water. Other major health issues mentioned by Garo women are anaemia, arthritis, fracture, hypertension, jaundice, low blood pressure, and typhoid.

‘Yes, another health issue I often deal with is gastrointestinal problems. It can be caused by contaminated water or improper food handling. During the monsoon season, it is more challenging to maintain proper hygiene’. —————(43 years old Garo women)

'Actually, ma'am, Jal Jeevan's mission has not started in this village yet. It has been implemented in our neighbouring villages. So, we depend either on wells or spring water as a source of drinking water'. —————(25 years old Garo women)

Garó women also mentioned some minor health issues such as cold, cough, diarrhoea, dysentery, fever, body pain, and indigestion.

'I often suffer from fever, cold and cough. Actually, this cold and humid weather of Garo hills is quite harsh on our immune systems'. —————(33 years old Garo women)

Figure 2 presents the word cloud of different health issues faced by Garo women.

Description of Achik medicine: The most prevailing Garo traditional medicine system

Garos traditional medicine, known as '*achik* medicine', is deeply ingrained in their society. The Garos prefer to call themselves *Achik*, which means 'hill man'. Traditional medicine in the Garo Hills involves the use of various plants for medicinal purposes. They have traditional healers called '*ojhas*' who possess extensive knowledge about local herbs and medicines. Leaves are most

commonly used in the treatment. They also use fruits, bark, roots, root barks, stems, seeds and flowers. These ojhas are crucial in providing them with remedies and guidance when they seek assistance.

'I visit Ojha for treatment for any illness. He provides me achik medicine prepared through local herbs and plants, which is very useful for me'. —————(22 years old Garo women)

The most used *achik* medicine is '*poron*.' Garo women use it when they have severe headaches. It is a combination of medicinal herbs provided by the *ojha*. They prepare a band of clean and fine cotton cloth and apply the *poron* mixture onto it, which is then tied around the forehead to alleviate the symptoms. In case of fracture, they use '*jak rik chu*' medicine or '*anchimrang*' medicine. In case of swelling, they use '*rajamuri*'. They use those medicines over the affected body parts. For stomach aches, *ojha* provides them with '*sam sko*' for consumption. To stop the bleeding from cutting hands and legs, *ojha* provides them with an *achik* medicine called '*meghalaya budu*'.

This study also found that each household has some medicinal plants, and all Garo tribes have a vast knowledge of the plant's medicinal use, which they use as a first resort.

'Indeed, every household has some medicinal plants, each possessing a diverse array of therapeutic properties. In my household also, we have some medicinal plants. I also use some home remedies. Notably, virtually every plant has some form of medicinal use within our traditional knowledge'. —————(38 years old Garo women)

From the Garo women, we have noted some medicinal use of herbal plants for some particular diseases (Table 4).

Reasons for using achik medicine

- **More effective than modern medicines**

The reliance on traditional medicine for Garo women in Meghalaya is predominant, as they find successful healing outcomes through these age-old practices. They feel positive results and complete healing through their traditional *achik* medicine.

'I feel complete relief and comfort after seeking Achik medicine'. —————(26 years old Garo women).

With the help of traditional medicine, women have witnessed successful recoveries from various ailments. It has proven to be more effective than any modern medical treatment.

'When I take achik medicine for my menorrhoea, my bleeding stops within a day. However, if I were to seek modern medicine, it would take up to a week to achieve similar results. So, based on my experiences, I find traditional medicine to be a better choice'. —————(42 years old Garo women).

This study also found that participants visit modern healthcare only for serious health conditions, such as accidents and typhoid.

'In case of typhoid, I visited the nearest CHC. Otherwise, I use our traditional medicine'. —————(35 years old Garo women)

- **An integral part of Garo culture and identity**

Table 4. Indigenous Traditional Knowledge of Medicinal Plants of Garo Women Participants, East Garo Hill District, Meghalaya (In-Depth Interviews from Primary Field Survey During May 2023)

Plant name Garo/English	Scientific Name	Medicinal use
The Bark of <i>Snaru</i> (Golden shower tree)	<i>Cassia fistula</i>	Stomach pain
The fruit of <i>Snaru</i> (Golden shower tree)		Skin disease
<i>Wakpatra</i> (galangal)	<i>Alpinia galanga</i> (L.)	Mouth ulcers, indigestion, reducing pain
Leaves stem and Flower of <i>Sonapul</i> (Pellitory)	<i>Spilanthes acmella</i> Murr.	Healing toothache
<i>Tulsi</i> (Holy basil) leaf	<i>Ocimum tenuiflorum</i>	Cough
Lotus leaf	<i>Nelumbo nucifera</i>	Bleeding disorders during the menstrual period
Dried lotus flower		Diarrhoea
<i>Sampangguri</i> (bitter vine)	<i>Mikania micrantha</i> H. B. K.	Wound healing
<i>Iching</i> (ginger)	<i>Zingiber officinale</i>	Fever, cough, cold, and even blood pressure
<i>Gambal</i> (Candahar) root paste	<i>Gmelina arborea</i> Roxb.	Piles
<i>Gambal</i> (Candahar) bark and leaves		Snake-bites
Leaves and root paste of <i>Esamul</i> (Birthwort)	<i>Aristolochia clematitis</i> L	
<i>Amillenga</i> (starfruit) fruits	<i>Averrhoa carambola</i>	Jaundice
<i>Walgem</i> (Coloured sterculia) leaf paste	<i>Firminia colorata</i> (Roxb.) R. Br.	
Young leaves of <i>Kering</i> (Indian trumpet)	<i>Oroxylum indicum</i>	
<i>Kitma</i> fruit (nutgall)	<i>Rhus semialata</i> Murray	Measles
Neem	<i>Azadirachta indica</i>	Skin diseases
Root paste of <i>Golmatra</i> (kutaja)	<i>Holarrhena pubescens</i>	High fever
<i>Tangail</i> (moringa) root	<i>Moringa oleifera</i>	Arthritis
<i>Chiore</i> (behada) fruit	<i>Terminalia bellirica</i>	Asthma
Bark of tree <i>Chiore</i> (behada)		Gastric problem

Traditional medicine is tied to the history, traditions, and beliefs, making it an integral part of the identity of the Garo women. It is more than just a remedy; it reflects their connection to nature, ancestors, and community. It instils trust and reliance on their traditional healing methods, which have stood the test of time and continue to be the primary choice for everyone to ensure their good health.

‘Our traditional medicine, known as ‘achik medicine,’ is deeply ingrained in our society. Our village’s wealthy and educated individuals also rely on achik medicine’. ————(29 years old Garo women)

Despite the availability of modern healthcare, traditional healing practices persist among the Garo women, as they have a strong cultural and historical connection with these practices. By using

traditional medicine, these women also want to preserve their ancient knowledge of medicinal plants and their healing properties.

'Our ancestors have been using these remedies for generations, and they have been passed down as a valuable part of our heritage'. —————(35 years old Garo women)

- **Preference for natural herbal remedies**

Traditional medicine relies on sustainable practices, such as harvesting herbs and plants from the local ecosystem, which aligns with the Garo women's values of living in harmony with nature. Many believe that traditional medicines have fewer side effects compared to modern pharmaceuticals, contributing to their preference for natural remedies.

'In truth, this traditional medicine is meticulously crafted from a rich array of medicinal plants, rendering it highly potent and effective'. —————(35 years old Garo women).

It is important to note that these women do not trust spiritual practices.

'No, as a Christian, I don't believe in spiritual practices. Spiritual practices are more prevalent in the Sonsarek religion. In our village, there are very few Sonsarek people left, as most have converted to Christianity. In the past, there used to be a person called 'kamal' who practised spirituality using some evil powers for healing purposes'. —————(25 years old Garo women).

- **Efficiency of Ojhas**

The healers, known as 'ojha,' have generations of wisdom and experience using herbal remedies. Their practices involve using local herbs, shrubs, and medicinal plants for various health-related applications. They know about local flora and their healing properties to treat various ailments. Their practices have stood the test of time. This history builds trust within the community.

'Our traditional healers, 'ojhas' possess extensive knowledge and expertise about local herbs and medicines, inherited through generations. They utilize more than 50 medicinal plants for various treatments'. —————(27 years old Garo women).

- **Availability and accessibility of traditional healers**

Garo women often have limited access to modern medical facilities and pharmaceuticals due to their remote locations. Traditional medicine, based on locally available plants, is usually more accessible. Moreover, Ojhas are readily available and accessible to them.

'In this village, there are 4 Ojhas. I can approach them at any time. Whereas, in this village, there is no health centre. The nearest health centre is almost 6 km distance from our village. In every village, there are 3 to 5 Ojhas'. —————(45 years old Garo women).

- **Affordability**

One of the key advantages of Achik medicine is its cost-effectiveness. The ingredients used in traditional remedies are often sourced locally and are readily available, making them more affordable than modern medications and treatments.

'When it comes to the cost of traditional healers, there is no fixed amount. It is up to us to decide how much we will pay them'. —————(42 years old Garo women).

While money may not be a significant issue for the Garo tribal people, if a person is sick and their medical treatment is costly, the female head of the household arranges a 'mahare meeting' to raise funds. This involves all family members and distant relatives who come together to decide on the treatment and contribute some money, sometimes even selling domestic animals or land to raise funds.

'It's a collective effort to ensure that no one is deprived of medical care due to financial constraints. Mahare meeting is compulsory'. —————(22 years old Garo women).

Reasons for limited use of modern Health care system

- **Poor quality of service in government health centre**

The quality of care in government health facilities is very poor in this tribal region. There is a scarcity of doctors and medicines. Doctors are not available for round the clock.

'In our village, there is a health subcentre. I can easily reach there. But doctors are not there all the time. Medicines are not properly available. For this reason, I go to Ojha for my treatment. I can approach him any time'. —————(25 years old Garo women).

Even in Community Health Centre (CHC), there is no infrastructure for surgery and medical equipment. For specialised treatment, they are referred to the civil hospital. Moreover, doctors and medicines are not available.

'Not all necessary medicines are available in CHC. We often have to purchase them from a pharmacy'. —————(22 years old Garo women).

In addition, individuals are typically directed to the civil hospital due to the absence of proper infrastructure.

'Most of the time, we are referred to Willamnagar Civic Hospital' —————(33 years old Garo women).

- **Remote location**

The distance to the modern healthcare facility is a problem. Moreover, there is no public transport. Arrangement of private care is very costly to them.

'Sonshak PHC is 15 km away from our village. This long distance makes it challenging to reach medical help quickly, especially in emergencies or critical health situations'. —————(45 years old Garo women)

'PHC is very near to my house. But most of the time, it refers to Willamnagar Civic Hospital, which is almost 70 km from my village. For this, booking a private car is necessary, which is very costly'. —————(38 years old women).

However, this study has identified that ASHA has a significant role in assisting pregnant women for institutional delivery and child immunisation.

'Home deliveries were common in the past, but now it has been almost institutionalized. ASHA takes the responsibility of taking pregnant women to CHC for delivery. She told about the potential risks associated with childbirth at home and the benefits of institutional delivery'.
 —————(27 years old Garo women)

'Actually, madam, Ojha provides the medicines. He is not involved in child delivery'.
 —————(25 years old Garo women)

Discussion

This study explored the health issues, health-seeking behaviour and the factors that influence the health-seeking behaviour of Garo tribal women. It found that Garo women always prefer traditional medicines prepared by local herbs from their traditional healers (*Ojhas*) for their health issues. Moreover, all Garo women have some knowledge of medicinal plants. Factors contributing to the high dependency on traditional medicine are the perceived effectiveness of traditional remedies, cultural identity, preference for natural remedies, the expertise of traditional healers, affordability, availability and accessibility of *Ojha*, and the limitations of modern healthcare facilities in remote regions.

This study has identified that one of the major health issues suffered by Garo women is menstrual disorders. A few earlier studies conducted in east India, while identifying the problem related to menstruation, also found that tribal adolescent girls suffer from menorrhoea (Das & Gautam, 2022; Dey & Mahapatra, 2020). Moreover, women suffer from prolonged weakness after delivery. It may be that the matrilineal tribal women are engaged in both household and productive work, and during and after pregnancy, they don't get proper rest. Our study also finds that women suffer from respiratory infections due to uncleaned cooking fuel. Studies found that exposure to particulate matter (PM) pollution increases the risk of acute respiratory infections (ARI), oxidative stress, and inflammation in the respiratory tract, damaging epithelial cells and impairing pathogen clearance (Adhikary *et al.*, 2024; Noor *et al.*, 2023). This study also found that colds, coughs, and fevers are very common for Garo women. Meghalaya, including Garo Hills, experiences relatively cooler temperatures, especially during winter. The region also has a high humidity that can weaken the immune system, making individuals more susceptible to colds, coughs, fever, and respiratory infections, especially during the monsoon season. High humidity can create favourable conditions for the growth of viruses and bacteria (Qiu *et al.*, 2022).

While exploring health-seeking behaviours, this study found that the Garo tribal people of Meghalaya heavily rely on herbal *Achik* medicine from traditional healers and show a minimal preference for modern healthcare systems, regardless of socioeconomic background or the availability of modern medicine. Herbal practice still plays a significant role in managing and curing various health problems, particularly in the remote and rural areas of tribal India (Laldingliani *et al.*, 2022; Malik *et al.*, 2015; Reddy *et al.*, 2023). The qualitative aspect of the study identified intrapersonal factors, such as the perception of health and illness, faith, trust and belief in traditional *achik* medicine, individual knowledge of medicinal plant and effectiveness of *achik* medicine, which contribute to pulling tribal women towards local traditional medicine. Additionally, the study found that demographic and socioeconomic status, such as age, education, wealth, and occupation, do not influence the health-seeking behaviour of Garo women. At the interpersonal level, family, peers, gender roles, households with medicinal plants, and most importantly, knowledge and expertise of local traditional healers (*Ojhas*) influence the health-seeking behaviour of Garo tribal women. Furthermore, community-related factors, including culture, traditions, and the accessibility of traditional healers, also exert a significant impact on healthcare-seeking behaviours. Dependency on traditional medicine from traditional healers is often determined by their faith, traditions, practices handed down from generation to generation and cost-effectiveness (Cáceres *et al.*, 2023; Kala, 2005). Women typically rely on modern healthcare for addressing maternal health concerns related to institutional childbirth. The

preference for modern health facilities in childbirth highlights an adaptive strategy to mitigate the higher risks associated with childbirth at home. As community health workers, ASHA act as a bridge between the tribal communities and the formal healthcare system. This highlights the achievement of Janani Suraksha Yojana (JSY) at the policy level in promoting institutional delivery. Furthermore, for major accidents and severe health issues, they seek treatment at modern healthcare facilities.

Apart from traditional medicine from traditional healers, our study also found that Garo women hold valuable insights into the uses of plants, their medicinal properties, and sustainable practices. Historically, it was often women who first domesticated plants, initiating the art of agriculture and the science of farming (Sood *et al.*, 2015). Indigenous women pass down traditional knowledge to younger generations through oral traditions, ensuring its continuity (Singh *et al.*, 2013). Women's knowledge often stems from their roles in providing household care and tending to family members due to historical gender divisions of space and labour (Voeks, 2007). Within the matrilineal social structure of these communities, where lineage and inheritance are traced through the maternal line, women hold central roles as caregivers, nurturers, and custodians of cultural knowledge (Ellena & Nongkynrih, 2017). The most visible advocate of ecofeminism in India, Vandana Shiva, argues that women from low and middle-income countries have both a unique dependence on 'nature' and an exceptional knowledge of 'nature' (SHIVA, 1992).

This study has identified that the Christian Garo women do not rely on spiritual practices. However, different previous studies have found that many tribal people rely on spiritual practice for healing (Bhasin, 2002; Ranganathan, 2018; Sahay, 2022). This study determined that study participants exclusively utilise traditional medicines made from local herbs. In examining the efficacy of herbal remedies, various scientific investigations have revealed that a number of herbal treatments may be effective and relatively safe (Hasani-Ranjbar *et al.*, 2010; Long *et al.*, 2001; Tan *et al.*, 2020). Phytochemistry has identified a wide range of bioactive compounds in medicinal plants, such as anti-inflammatory, antioxidant, antimicrobial, and analgesic properties (Gonfa *et al.*, 2023; Ndezo Bisso *et al.*, 2022). An earlier study suggested that the medicinal practices of the indigenous people of India should be termed 'Ethnobotanical medicine' as the use of plants in treating diseases (Kala, 2005).

Another approach to address the high dependence on traditional medicine is the perceived deficient quality of care in health centres. The scarcity of healthcare professionals and low quality of services/medicines were identified as key factors deterring individuals from seeking healthcare services. A typical response noted was referring the patient to civil hospital, which is far distance. Similar findings were reported in the studies of barriers to utilising modern health systems in central and northeast India (Boro & Saikia, 2020; Contractor *et al.*, 2018).

Conclusion and policy recommendation

The health-seeking behaviour of the Garo tribal population of Meghalaya is deeply rooted in their cultural and traditional practices, primarily relying on herbal *Achik* medicine prepared from local herbs from traditional healers. They do not place faith in spiritual practices for healing. Despite the availability of modern healthcare facilities, there is a marked preference for traditional medicine, influenced by intrapersonal and interpersonal factors, such as trust, cultural beliefs, and the perceived efficacy of traditional treatments. Community-related factors, such as affordability and accessibility to traditional healers, further reinforce this preference. The study also underscores the significant role of Garo women in preserving and transmitting traditional medicinal knowledge. Such a role emphasises the intertwined relationship between gender roles, cultural heritage, and healthcare practices within the community. However, in specific circumstances like maternal health and severe health issues, there is a noted shift towards modern healthcare facilities, influenced by the interventions of community health workers and initiatives like Janani Suraksha Yojana (JSY).

At the policy level, the government should recognise and integrate the role of traditional healers and traditional remedies within the mainstream healthcare system. This includes support for traditional healers by implementing initiatives that facilitate cooperation between tribal traditional healers and contemporary healthcare providers, thereby fostering a more holistic approach to culturally sensitive health and providing access to modern medical facilities. Government health policies should actively promote the use of ethnomedicine, ensuring that tribal people have access to safe and effective traditional treatments alongside modern medical options. In addition, the government should support further research and documentation of traditional therapeutic practices and their effectiveness. By partnering with local academic institutions and research establishments, a scientific foundation can be established for integrating traditional and modern medicine, preserving indigenous knowledge, and encouraging evidence-based practices.

Furthermore, there should be improved access to gynaecological services in rural health centres and ensure that women receive timely and appropriate treatment for menstrual disorders. Policymakers should also promote nutritional programmes addressing anaemia and other deficiencies contributing to menstrual issues. Mobile health clinics and telemedicine services can be introduced to bridge the gap in remote areas, thus alleviating the distance and accessibility challenges experienced by the Garo community. Additionally, there is also a need to improve the public transportation facilities in that remote region.

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Appendix

Appendix A1. Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No	Item	Guide questions/description
Domain 1: Research team and reflexivity		
Personal Characteristics		
1.	Interviewer/facilitator	Piyasa Mal
2.	Credentials	Ph.D. scholar
3.	Occupation	Ph.D. scholar
4.	Gender	Female
5.	Experience and training	Coursework during her Ph.D.
6.	Relationship established	Rapport was established with the participants before the commencement of the study.
7.	Participant knowledge of the interviewer	Participants were known about the researcher and the reasons for doing the research.
8.	Interviewer characteristics	Interests in the research topic
Domain 2: study design		
Theoretical framework		
9.	Methodological Orientation and Theory	Phenomenology
10.	Sampling	Convenience sampling
11.	Method of approach	A face-to-face approach to interviews was adopted.
12.	Sample size	12
13.	Non-participation	There was no non-participation.
Setting		
14.	Setting of data collection	Participant's home

(Continued)

(Continued)

No	Item	Guide questions/description
15.	Presence of non-participants	Yes, other family members of the participants were present.
16.	Description of sample	Please see Table 2 in the manuscript.
Data collection		
17.	Interview guide	Yes, questions, prompts, and guides are provided by the authors.
18.	Repeat interviews	Yes, telephonic repeat interviews were conducted 2-3 times when and where required for the qualitative study.
19.	Audio/visual recording	Yes, audio recording was adopted.
20.	Field notes	Yes, field notes were made after the interview.
21.	Duration	Duration of around 40 minutes for each in-depth interview
22.	Data saturation	Yes, data saturation was followed, and 2 participants were excluded.
23.	Transcripts returned	The data was collected in the Garo and English language, and later, the Garo language was transcribed into English.
Domain 3: Analysis and findings		
Data analysis		
24.	Number of data coders	136
25.	Description of the coding tree	No
26.	Derivation of themes	Derived from the data
27.	Software	Atlas Ti
28.	Participant checking	No
Reporting		
29.	Quotations presented	Yes
30.	Data and findings consistent	Yes
31.	Clarity of major themes	6 major themes
32.	Clarity of minor themes	12 minor themes

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