

Perception and practices of tribal traditional healers of Assam towards health and health system: A mixed-method study

Introduction

Traditional tribal healers practice a form of vernacular Indian medicine. The concepts of health, disease, life and death are unique to tribal populations like their cultural practices. These diverse cultural settings along with other factors like indigenous medicines, magico-religious beliefs and treatment influence their health status and treatment-seeking behavior¹. It hence is of pivotal importance to explore these beliefs and practices of tribal populations for their overall benefit. India houses one of the largest tribal populations accounting for 8.6% of total India's population². Assam is home to 12.4% of India's tribal population and has more than 29 tribal groups within the state³. Mishings tribal group constitute the second largest tribal group in Assam and Arunachal Pradesh. The tribal communities in these areas among many other factors are reportedly dependent on traditional practices leading to poor utilization of facility-based healthcare services⁴. Therefore, it can be inferred that these traditional practices and traditional healers hold a position of great importance in Assam.

Tribals reportedly contribute to 30% of all cases of malaria and as much as 50% of the mortality associated with malaria. The estimated prevalence of Tuberculosis among tribes (per 100,000) was 703 cases compared to 256 in non-tribal population⁵. These health burdens are further accentuated by the unavailability of trained healthcare providers in tribal areas further strengthening the presence of traditional medicines and traditional healers in these areas⁵. Improving access to healthcare for indigenous communities would require Universal Health Coverage (UHC) interventions to be culturally acceptable, locally relevant and promote active involvement of the community at all stages of the intervention. Traditional healers play a major role in this regard to ensure UHC among tribal populations. World Health Organisation (WHO) in line with the concept of UHC supports traditional tribal healing system. However, it also opines that the knowledge and qualification of traditional medicine practitioners have a direct bearing on patient safety⁶. It recommends facilitating the integration of Traditional and Contemporary Medicine (C&TM) into national health systems by helping member states to develop their national policies in this sector and producing guidelines for T&CM by developing and providing international standards, technical guidelines and methodologies for research into products, practices and practitioners safety⁶. The present study was developed along these lines as the first step to understanding the perspectives and practices of healers towards health and health systems. The present study is aimed to assess the knowledge levels and attitude of different tribal traditional healers towards health system in the selected districts of Assam and to describe the practices of tribal traditional healers towards health.

Methodology

The current findings are part of a larger mixed-method study conducted in 7 states of India, of which findings from one state, Assam, are being presented.

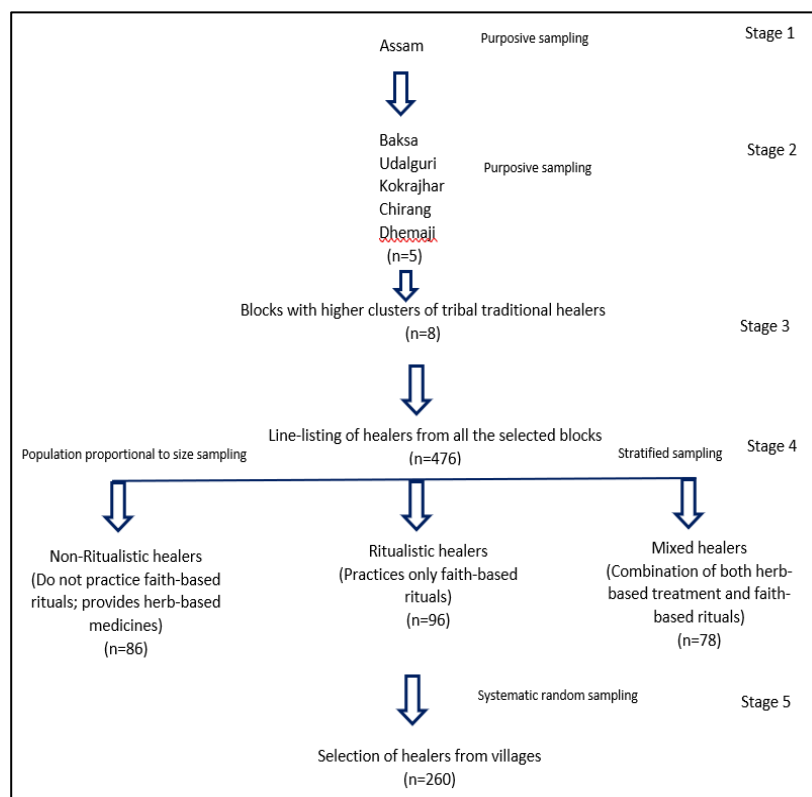


Figure 1: Sampling methodology for Knowledge and Attitude survey

Data collection

Quantitative (semi-structured) and qualitative (unstructured) tools were developed. Content validation of tools was done by experts in the field and tools were translated to regional languages and were back-translated to English to conduct linguistic validity. Gatekeepers consent, written informed consent were collected before initiating the data collection. Quantitative data were collected in KoBo Collect software, recorded in Microsoft Excel 2019 and were reviewed for its quality, correctness and completeness regularly. Incorrect data were discarded and fresh data were collected.

The study adopted a cross-sectional mixed method study design. The tribal traditional healers actively managing the diseases within the tribal community for at least one-year, residents of the respective geographical area for at least one year and uncertified medical practitioners were included in the study. Qualified medical practitioners (MBBS, BAMS, BNYS, BHMS, BUMS, Siddha, BDS and other medical certified practitioners) were excluded from the study.

For the Knowledge and Attitude Survey (KA survey), a total of 3318 healers from all the 7 states was calculated (CI:95%, e: 5%, non-response rate:20%). Further through population proportional to size, 260 healers from Assam were sampled. All participants were sampled through Multi-stage-stratified-systematic random sampling.

For in-depth-interview, arbitrarily, 5 healers were sampled from each district and were interviewed until data saturation was reached. A total of 25 participants were therefore sampled from 5 study districts. Maximum variation purposive sampling (variation based on tribes/sub-tribes, age groups and gender) was adopted to sample the participants.

Data analysis

Frequency distribution and Median (IQR) of descriptive data were presented. Kruskal-Wallis test was conducted for the selected variables. Poisson regression was later performed for all the independent variables. Qualitative data were analysed and categorized into themes. Primary outcome variables were knowledge and attitude of healers towards other health system.

For the purpose of data analysis, total knowledge and attitude score of 27 were divided into 4 quartiles. Knowledge of healers towards other systems of health was categorized into- Very poor, poor, moderate and good. Attitude of healers towards other systems of health was categorized into not inclined, neutral, leaning and believers of other systems of health.

Findings

Table 1: District-wise distribution of participants

Tribes	Baksa n(%)	Chirang n(%)	Dhemaji n(%)	Kokrajhar n(%)	Udalguri n(%)	Total n(%)
Bodo	7 (2)	53 (89.83)	12 (13.48)	72 (96)	16 (57.69)	160 (61.53)
Deori	0	0	12 (13.48)	0	0	12 (4.61)
Kachari	0	0	0	0	1 (3.84)	1 (0.38)
Lalung	0	0	2 (2.24)	0	0	2 (0.76)
Mishing	0	0	50 (56.17)	0	0	50 (19.23)
Rabha	2 (18.18)	1 (1.68)	0	3 (4)	4 (15.38)	10 (3.84)
Santhal	1 (9.09)	5 (8.47)	0	0	6 (23.07)	12 (4.61)
Sonowal	0	0	9 (10.11)	0	0	9 (3.46)
Tiwa	0	0	4 (4.49)	0	0	4 (1.53)
Total	10 (3.84)	59 (22.69)	89 (34.23)	75 (28.84)	27 (10.38)	260 (100)

Table 2: Tribe-wise demography of healers from Assam

Parameters		Bodo n(%) n=160	Rabha n(%) n=10	Santhal n(%) n=12	Deori n(%) n=12	Lalung n(%) n=2	Mishing n(%) n=50	Sonowal n(%) n=9	Tiwa n(%) n=4	Kachari n(%) n=1	Total n(%) n=260
Age (In years)	21 to 40	34 (21.25)	2 (20)	1 (8.34)	4 (33.34)	0	8 (16)	2 (22.23)	0	0	51 (19.61)
	41 to 60	105 (65.62)	6 (60)	7 (58.34)	6 (50)	1 (50)	30 (60)	5 (55.56)	3 (75)	0	163 (62.69)

	61 to 80	21 (13.12)	1 (10)	4 (33.34)	2 (16.67)	1 (50)	12 (24)	2 (22.23)	1 (25)	1 (100)	45 (17.30)
	81 and above	0	1 (10)	0	0	0	0	0	0	0	1 (0.38)
Gender	Male	95 (59.37)	9 (90)	9 (75)	4 (33.34)	1 (50)	32 (64)	7 (77.78)	2 (50)	1 (100)	160 (61.53)
	Female	65 (40.62)	1 (100)	3 (25)	8 (66.67)	1 (50)	18 (36)	2 (22.23)	2 (50)	0	100 (38.46)
Religion	Hindu	150 (93.75)	9 (90)	11 (91.67)	12 (100)	2 (100)	50 (100)	9 (100)	4 (100)	1 (100)	248 (95.38)
	Christian	10 (6.25)	1 (10)	1 (8.34)	0	0	0	0	0	0	12 (4.61)
Education status	Non-literates	15 (9.37)	3 (30)	4 (33.34)	1 (8.34)	1 (50)	8 (16)	0	0	0	32 (12.30)
	Primary schooling	84 (52.5)	4 (40)	2 (16.67)	4 (33.34)	0	8 (16)	3 (33.34)	2 (100)	1 (100)	108 (41.53)
	Middle schooling	47 (29.37)	1 (10)	2 (16.67)	3 (25)	1 (50)	13 (26)	1 (11.12)	2 (100)	0	70 (26.92)
	High schooling	14 (8.75)	2 (20)	2 (16.67)	3 (25)	0	18 (36)	2 (22.23)	0	0	41 (15.76)
	Pre-university or intermediate	0	0	0	1 (8.34)	0	3 (6)	1 (11.12)	0	0	5 (1.92)
	Bachelor's or degree	0	0	2 (16.67)	0	0	0	2 (22.23)	0	0	4 (1.53)

Around 160 (61.53%) of 260 healers were from Bodo community, 163 (62.69%) were in 41-60 years age group category, 160 (61.53%) healers were male, 248 (95.38%) were followers of Hindu religion, and 108 (41.53%) healers had only primary school education.

Table 3: Knowledge and Attitude of tribal healers of Bodo community towards other health systems (n=160)

Socio-demographic variables		Knowledge regarding other health system				p-Value	H static	Attitude towards other health system				p-Value	H static
		Very poor n(%)	Poor n(%)	Moderate n(%)	Good n(%)			Not inclined n(%)	Neutral n(%)	Leanin g n(%)	Believer n(%)		
Age	21-40	31 (19.37)	2 (1.25)	1 (0.62)	0	0.757	0.557	13 (8.12)	15 (9.37)	5 (3.12)	1 (0.62)	0.204	3.179
	41-60	95 (59.37)	4 (2.5)	5 (3.12)	1 (0.62)			50 (31.25)	45 (28.12)	9 (5.62)	1 (0.62)		
	61-80	20 (12.5)	1 (0.62)	0	0			13 (8.12)	6 (3.75)	2 (1.25)	0		
Gender	Male	84 (52.5)	5 (3.12)	6 (3.75)	0	0.127	2.335	45 (28.12)	37 (23.12)	11 (6.87)	2 (1.25)	0.671	0.181
	Female	62 (38.75)	2 (1.25)	0	1 (0.62)			31 (19.37)	29 (18.12)	5 (3.12)	0		
Education	Illiterate	14 (8.75)	0	0	1 (0.62)	0.000	44.561	7 (4.37)	5 (3.12)	3 (1.87)	0	0.003	13.958

	Primary school (Upto 5th standard)	86 (53.75)	2 (1.25)	1 (0.62)	0			48 (30)	38 (23.75)	2 (1.25)	1 (0.62)		
	Middle school (Upto 7th Standard)	40 (25)	1 (0.62)	1 (0.62)	0			19 (11.87)	17 (10.62)	5 (3.12)	1 (0.62)		
	High school (Upto 10th standard)	6 (3.75)	4 (2.5)	4 (2.5)	0			2 (1.25)	6 (3.75)	6 (3.75)	0		
Type of healer based on treatment methodology	Non-ritualistic healer	38 (23.75)	5 (3.12)	4 (2.5)	0	0.000	15.532	20 (12.5)	18 (11.25)	7 (4.37)	2 (1.25)	0.356	2.067
	Ritualistic healer	80 (50)	0	0	0			39 (24.37)	38 (23.75)	3 (1.87)	0		
	Mixed healer	28 (7.5)	2 (1.25)	2 (1.25)	1 (0.62)			17 (10.62)	10 (6.25)	6 (3.75)	0		

Table 4: Knowledge and Attitude of tribal healers of Mishing community towards other health systems (n=50)

Socio-demographic variables		Knowledge regarding other health system				p-Value	H static	Attitude towards other health system				p-Value	H static
		Very poor n(%)	Poor n(%)	Moderate n(%)	Good n(%)			Not inclined n(%)	Neutral n(%)	Leaning n(%)	Believer n(%)		
Age	21-40	2 (4)	5 (10)	1 (2)	0	0.048	6.093	0	6 (12)	1 (2)	1 (2)	0.123	4.193
	41-60	5 (10)	15 (30)	8 (16)	2 (4)			0	15 (30)	14 (28)	1 (2)		
	61-80	5 (10)	7 (14)	0	0			0	10 (20)	2 (4)	0		
Gender	Male	10 (20)	15 (30)	5 (10)	2 (4)	0.349	0.875	0	18 (36)	14 (28)	0	0.447	0.579
	Female	2 (4)	12 (24)	4 (8)	0			0	13 (26)	3 (6)	2 (4)		
Education	Illiterate	5 (10)	3 (6)	0	0	0.029	10.808	0	7 (14)	1 (2)	0	0.004	15.630
	Primary school (Upto 5th standard)	3 (6)	4 (8)	1 (2)	0			0	7 (14)	1 (2)	0		
	Middle school (Upto 7th Standard)	2 (4)	8 (16)	3 (6)	0			0	10 (20)	3 (6)	0		
	High school (Upto 10th standard)	2 (4)	10 (20)	5 (10)	1 (2)			0	7 (14)	10 (20)	1 (2)		
	Pre-university or Intermediate	0	2 (4)	0	1 (2)			0	0	2 (4)	1 (2)		
Type of healer based on treatment methodology	Non-ritualistic healer	9 (18)	17 (34)	4 (8)	1 (2)	0.048	6.093	0	21 (42)	9 (18)	1 (2)	0.196	3.262
	Ritualistic healer	0	0	1 (2)	1 (2)			0	0	2 (4)	0		
	Mixed healer	3 (6)	10 (20)	4 (8)	0			0	10 (20)	6 (12)	1 (2)		

Table 5: Knowledge and Attitude of tribal healers of other tribal community towards other health systems (n=50)

(Tribes Deori, Kachari, Lalung, Rabha, Santhal, Sonowal, Tiwa tribal groups are clubbed into others category for analyses purpose)

Socio-demographic variables		Knowledge regarding other health system				p-Value	H static	Attitude towards other health system				p-Value	H static
		Very poor n(%)	Poor n(%)	Moderate n(%)	Good n(%)			Not inclined n(%)	Neutral n(%)	Leaning n(%)	Believer n(%)		
Age	21-40	3 (6)	3 (6)	2 (4)	1 (2)	0.052	5.900	4 (8)	1 (2)	4 (8)	0	0.187	3.355
	41-60	15 (30)	11 (22)	2 (4)	0			10 (20)	9 (18)	9 (18)	0		
	61-80	10 (20)	3 (6)	0	0			7 (14)	6 (12)	0	0		
Gender	Male	21 (42)	9 (18)	2 (4)	1 (2)	0.173	1.860	17 (34)	9 (18)	7 (14)	0	0.076	3.142
	Female	7 (14)	8 (16)	2 (4)	0			4 (8)	7 (14)	6 (12)	0		
Education	Illiterate	4 (8)	2 (4)	0	0	0.190	6.122	4 (8)	1 (2)	1 (2)	0	0.164	6.520
	Primary school (Upto 5th standard)	12 (24)	7 (14)	0	0			10 (20)	6 (12)	3 (6)	0		
	Middle school (Upto 7th Standard)	5 (10)	4 (8)	1 (2)	0			2 (4)	6 (12)	2 (4)	0		
	High school (Upto 10th standard)	5 (10)	4 (8)	0	0			4 (8)	2 (4)	3 (6)	0		
	Bachelor's or Degree	2 (4)	0	3 (6)	1 (2)			1 (2)	1 (2)	4 (8)	0		
Type of healer based on treatment methodology	Non-ritualistic healer	1 (2)	4 (8)	3 (6)	0	0.002	12.747	0	3 (6)	5 (10)	0	0.004	10.884
	Ritualistic healer	12 (24)	2 (4)	0	0			9 (18)	4 (8)	1 (2)	0		
	Mixed healer	15 (30)	11 (22)	1 (2)	1 (2)			12 (24)	9 (18)	7 (14)	0		

Knowledge of healers on other health systems, health committees and governmental medicines

Around 237 (91.15%) healers from all the tribes had poor and very poor knowledge of health systems and 23 (8.84%) healers had moderate to good knowledge of health systems. Further, 97 (37.30%) healers was not inclined towards other health system, 113 (43.46%) had a neutral attitude and 50 (19.23%) healers either leaned or believed other health systems. Age, education and type of healer variables were reported to be statistically significant with knowledge and attitude of healers towards other health systems across all the tribes.

Regarding the public health committees like Village Health Sanitation and Nutrition Committee (VHSNC), Jan Aarogya Samithi (JAS), Rogi Kalyan Samithi (RKS), 17 (6.53%) of 260 healers were aware of them. Among them, 8 (47.05%) healers opined that they have been helping the community, 9 (52.94%) healers opined conversely. Their positive belief reportedly was for the reason that villages have better facilities now since ASHAs conduct fantastic work. However, 4 (1.53%) of 260 healers shared that they are part of such public health committees and were actively involved in representing the community, voicing the health needs of the community, monitoring of Health and Wellness Centres/ health facilities.

Further around, 63 (24.23%) of 260 healers were aware of free medicine and consumables provided by the Government. Among them, 41 (65.07%) healers opined that these medicines and consumables help community in maintaining good health. Reasoning the same, 33 responses were received for providing affordable medicines for needy, 29 responses for providing uninterrupted medicines for needy, thus believing in the free medicines and consumables provided by government. Further around, 7 (2.69%) of 260 healers opined that free medicine and consumables do not help the community in maintaining good health. Around 7 responses were received for non-availability of medicines and 5 responses for side effects of medicines indicating the reasons for their disbelief in free medicines and consumables provided by Government. Around 4 (16%) of 25 healers reported that they are not aware of benefits of free medicines and consumables of Government.

Attitude of healers towards other health systems

Healers opinion regarding other health systems providing safe and reliable medicines was opined negatively by 38 (14.61%) of 260 healers, positive opinion was reported by 45 (17.30%) healers, 171 (65.76%) healers shared that they were not aware of this and 6 (2.30%) healers preferred not to respond. The reason for disbelief was reportedly due to evidenced and heard side effects of medicines (36 responses), and other reasons like trained medical staffs wanting only money (1 response) and conducting unnecessary surgeries (1 response). The positive opinion was reported due to recovery of patient (20 responses), provision of emergency care (27 responses) and advanced diagnostic and treatment options (28 responses).

Reporting of healers opinion about government supporting tribal traditional healing system, 26 (%) of 260 healers reported that traditional healing system is not supported by government, 13 (%) healers opined that government support them sometimes (Only when approached to government), 5 (%) reported that government always supports, 153 (%) reported that they don't know and 63 (%) preferred not to respond. The positive support of government was believed so due to financial benefit (9 responses) healers received, providing physical space for healing practice at health facilities (6 responses), increase in referral between the health system to the tribal traditional healing system (4 response) and providing space for cultivating the plants (2 responses). The negative opinion was credited due to the belief that other systems of medicine do not consider traditional tribal healing system (57 responses) and 1 response reported that government supports allopathic medicine and it ignores herbal and ayurvedic medicine. Further regarding sufficiency of support provided by government to tribal traditional healing system, 7 (38.89%) of 18 healers reported that the support is not sufficient, 9 (50%) reported that they don't know and 2 (11.12%) reported preferred not to respond. Their opinion about insufficient support was due to their opinions like lack of financial support from government making it difficult for them to survive (3 responses), government provides money only at election time (1 response), unfinished responsibilities of healers (1 response), government not recognizing healer (1 response).

Reporting of healers perception towards integrating tribal traditional healing system with other health systems, 90 (34.61%) of 260 healers were not in favour of it, 39 (15%) were in favour of integration, 124 (47.69%) healers were not aware of this and 7 (2.69%) preferred not to respond. Lack of support towards integration of both systems of medicines were due to the belief that health system does not include spiritual healing (63 responses), and that other systems of health would never allow integration since healers practice at their locality and they do not have any proof or certificate of healing practices (1 response) and health system does not include spiritual healing (1 response). The support towards integration was due to the beliefs that integration provides better treatment options for the community through availability of both systems of medicines (28

responses), enhances referral linkages between both the medicine systems (27 responses), provides an opportunity for research activities (14 responses), provides greater opportunities for healers (2 responses).

Table 6: Degree of association of sociodemographic variables with knowledge levels and attitude of healers towards other systems of health

Sociodemographic variables		Knowledge towards other systems of health			Attitude towards other systems of health		
		Exp(B)	Confidence Interval		Exp(B)	Confidence Interval	
			Lower	Upper		Lower	Upper
Age (in completed years)	21-40	0.876	0.719	1.066	1.058	0.926	1.210
	41-60	1.138	0.966	1.341	1.139	1.023	1.269
	61-80	1.000			1.000		
Sex	Male	0.926	0.817	1.051	0.937	0.863	1.017
	Female	1.000			1.000		
Education	Illiterate	0.302	0.236	0.386	0.637	0.522	0.777
	Primary school	0.163	0.131	0.203	0.568	0.477	0.677
	Middle school	0.348	0.282	0.428	0.642	0.537	0.768
	High school	0.607	0.497	0.742	0.819	0.682	0.982
	Pre-university	1.000			1.000		
Type of healer	Non-Ritualistic	1.118	0.987	1.265	1.121	1.023	1.229
	Ritualistic	0.253	0.204	0.314	0.862	0.780	0.952
	Mixed	1.000			1.000		

None of the variables reported significance Exp(B) with knowledge of healers on other systems of health. However, it can be noted that an increase in education level positively increases the knowledge of healers on other systems of health (with lowering of Exp(B) from 69.8% at illiteracy to 39.3% at Pre-university).

Compared to participants in 61-80 years age group, attitude shifted towards believing other systems of health by 13.9% among 41-60 years aged participants. Attitude among non-ritualistic healers is 12% increased towards other systems of health in comparison to Mixed healers.

Around 25 in-depth-interviews were conducted with the healers to further explore their understanding of health, diagnostic practices and curative practices.

The tribal healers understanding of healthy and sick individuals is in line with the modern understanding. However, it is clear that there is no consensus among them regarding this and hence, there might be differences in identifying sick and healthy individuals and thereby, treating them. This knowledge is essential as it is the primary in disease diagnosis and treatment.

Table 7: Tribe-wise perspectives of healers about healthy and sick person

District	Tribe	Feature of a Healthy Person	Features of a sick person
Kokrajhar	Bodo	Free from physical ailments	Restlessness, discomfort and speech changes, confirmed through patient's expression
Udalguri	Rabha	No issues in living, eating, moving around, and walking	
	Garo	Physically fit, free from mental illnesses	
Baksa	Rabha	Physically or mentally fit	
Dhemaji	Sonowal	Free from any ailments	
	Mishing	Free from any ailment	Identified by inability to maintain health, weak mentality, inability to think clearly
	Kachari		Identified by various diseases causing physical or mental distress
Chirang	Santhal	Free from physical and mental ailments	

Knowledge about organs and organ systems

In Udalguri, Assam the traditional healers from tribes Garo, Rabha, and Bodo expressed that they don't know much about the organs or organ systems. The healer from the Garo tribe suggested that a doctor would know them, whereas the healer from the Rabha tribe explained that he hadn't learned much about organs but a doctor taught him about various symptoms such as headache, fever, etc, and the ways of treating such symptoms. A healer stated- "These things I don't know. Doctors would know" [IDI, Rabha healer, Udalguri, Assam].

This poor knowledge of human body among all the tribes further contributes to poor understanding of diseases and poses a threat to effectively identify the diseases and its course.

Factors responsible for disease causation

According to a Rabha healer, sickness can result from environmental pathogens, possessions, and black magic. The Bodo healer attributes diseases to factors such as unhealthy, pesticide-laden foods, as well as curses. They also acknowledge the possibility of illness being caused by Gods.

Sonowal healers primarily attribute diseases to environmental factors such as polluted air and water, as well as unhealthy lifestyle habits like excessive alcohol consumption. They do not consider negative energy or possession by spirits as significant factors. Garo healers mention reasons for illness such as lack of physical exercise, unhealthy eating habits, consumption of alcohol, and mental stress. Kachari healers believe that diseases can occur due to a poor diet, . They also mention the influence of supernatural factors like possessions and negative energy. A healer quoted- “The diseases occur from the faulty diet. There are plenty of pesticides used in food. Moreover, we drink water from any source, without properly checking it. From there, the diseases occur. Apong (traditional liquor) also causes disease at times. (laughs). So, diseases occur due to eating or drinking all these” [IDI, Kachari healer, Dhemaji, Assam]

These perspectives offer diverse beliefs regarding disease causation among different indigenous communities in Assam. These perspectives are divergent, where some healers identify environmental/ climatic conditions and germs as causative factors, and the same healers also believe that diseases are caused by supernatural factors. There is an inherent need to strengthen the knowledge of healers regarding disease causation.

Diagnostic methods adopted by healers

A healer from the Bodo tribe shared that she practices Nadi Pariksha (pulse examination) and prescribes medicines based on her assessments. She explained that she observes individuals closely and can identify their past ailments through physical evaluation. She emphasized her belief in a higher power, attributing her diagnostic abilities to divine guidance. Notably, she mentioned that during diagnosis, she does not physically touch the patients and can assess their condition simply by looking at them or knowing their names. A healer from Rabha tribe stated that he does not examine through pulse but by touching patients' hands. He can identify diseases like Typhoid or Jaundice based on visible symptoms from a distance. He said that he mostly relies on physical symptoms or behaviour for diagnosis. He organises “jagnyas or faith-based rituals” in a Shiv mandir (temple) to treat patients, guiding them with a Rudraksha mala or prayer beads. He treats those attacked by supernatural factors with jagnyas and suggests sadhanas or spiritual practices for 7 days and this treatment cured many patients.

This suggests that healers lack familiarity with modern diagnostic methods, reinforcing the quantitative finding of their limited knowledge about the health system. Raising awareness about the diagnostic resources available within the formal health system is crucial to support accurate disease diagnosis and to help establish a structured referral linkage between traditional healers and healthcare providers.

Curative practices of healers

The Bodo healer primarily uses medicine obtained from herbs, particularly climbers. He collects these herbs from trees and uses them to heal snake bites, dog bites, and insect bites. The Rabha healer uses traditional herbal medicine, indicating a reliance on indigenous healing practices and remedies. The Bodo healer utilizes a combination of leaves, roots, and tree barks for medicinal purposes. She also mentions procuring these medicinal plants from the stores. A healer quoted, "No, I do not give any readymade medicines. I search for them (raw materials) and prepare

(medicines) before dispensing them." [IDI, Bodo healer, Chirang, Assam]. The Sonawal and Kachari healers rely on herbs, particularly climbers, for preparing medicines. They highlight the importance of these plants in treating ailments like snake bites, dog bites, and insect bites.

In Baksa district, the Bodo healer treats ailments such as mental illness, malaria, and snake bites through the use of holy water and prayers. Meanwhile, in Udalguri District, the Garo healer uses herbal medicine alongside prayers to manage conditions like mental illness, malaria, and snake or dog bites. These rituals not only reflect the communities' faith and cultural traditions but also the prevalent methods among them.

It is evident that there is no clear understanding or consensus among healers regarding treatment practices, nor is there any standard practice. Treatment options depend on healers, their faith and their experience. This interrupts the institutional care being provided by Government. The faith of the community in these healers further makes it difficult to render public health system services at their doorstep. This strongly necessitates an urgent need to collaborate with these healers and strengthen their knowledge about health system, health, disease, diagnostic options, treatment options and thereby, develop referral linkages.

Conclusion

To the best of our knowledge, the current study is the first of its kind to be done with such a large sample of tribal traditional healers (3318 healers from 7 states), whose data is almost absent at state or national levels. There is a literature gap in terms of tribe-wise data, this study has attempted to present the tribe-wise demography and other variables to bridge the gap.

Knowledge levels and attitudes of healers towards health systems are alarmingly indicative of an urgent need for health literacy. Their understanding of health is also greatly varied from the standard understanding of health. This further interrupts their understanding of diseases and puts them at risk of a wrong diagnosis or treatment methods. To achieve universal health coverage, reaching the unreached is essential. Since, tribal healers hold a major role among tribal populations, understanding the knowledge of healers regarding health system and their attitude towards health system is the first step in establishing a long journey of collaboration with them. The findings from the current study aid in the development of customized interventions/strategies that are culturally acceptable. Effective behavior change communication models must be implemented to bring behaviour change among healers towards their attitude and understanding of health system.

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