

Acute Respiratory Infection (ARI) in children in Ethnic Minority Communities of Chittagong Hill Tracts, Bangladesh: A qualitative study

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Abstract

Introduction: The Chittagong Hill Tracts (CHT) region of Bangladesh, home to 11 distinct ethnic minority communities, has been disadvantaged and isolated for many years due to 25 years of insurgency and political turmoil. This area has higher child mortality rates than the national average. This study attempts to explore a holistic understanding on the ways that Acute Respiratory Infections (ARIs) are understood and managed in the CHT.

Methods: An ethnographic approach based on participant observation coupled with semi-structured interviews, key informant interviews and focus groups has been used. The notion of Explanatory Models (EMs) encompassing concepts such as local aetiology and terminologies, treatment-seeking behaviour, illness experience, symptom recognition and reporting held by local communities has been employed as a conceptual framework.

Results and Discussion: The study findings indicate that EMs for childhood ARI varied within and across ethnic groups. Study participants tended to integrate both physical and supernatural causes into their EMs. Despite the widespread tendency to consider folk beliefs in binary opposition to biomedical causes, findings from this study show that both consider proximate and underlying factors related to childhood ARI and many of these underlying factors that render children more susceptible to ARI are actually common to both models. Treatment-seeking behaviour is a complex process represented by shifting interpretations of the illness and treatment options and constrained by poverty and other structural factors that set the context in which study participants operate on a daily basis.

Conclusion: Researchers and policy-makers need to employ a more expansive concept of EMs that accommodates the mundane struggles and involuntary aspects of health care and treatment-seeking behaviour of individuals from marginal communities all over the world and should subsequently move away from the simplistic idea that exotic beliefs and practices of local communities are 'cultural barriers' to effective health care.

KEY WORDS: Acute respiratory infection; Bangladesh; child health; explanatory models; health inequality; medical anthropology.

Riassunto

Introduzione: La regione del Bangladesh denominata “Chittagong Hill Tracts” (CHT), che ospita 11 differenti comunità etniche minoritarie, è stata svantaggiata ed isolata per molti anni a causa di 25 anni di rivolte e di tumulti politici. Quest’area ha tassi di mortalità infantile più alti della media nazionale. Questo studio cerca di esplorare con una comprensione olistica i modi con cui le infezioni respiratorie acute sono comprese e gestite in tale regione.

Metodi: È stato adottato un approccio etnografico basato sull’osservazione dei partecipanti in combinazione con la somministrazione di interviste semi-strutturate e di interviste ad informatori chiave. La nozione di modello esplicativo, che comprende concetti come eziologia e terminologie locali, atteggiamento verso la ricerca delle cure, esperienza di malattia, riconoscimento dei sintomi e riferito da parte delle comunità locali, sono state impiegate come cornice teorica di riferimento.

Risultati e Discussione: I risultati dello studio indicano che i modelli esplicativi riguardanti le infezioni delle vie respiratorie nei bambini variano all’interno e tra i gruppi etnici. I partecipanti dello studio avevano la tendenza ad integrare cause fisiche e soprannaturali nei loro modelli esplicativi. Nonostante la diffusa tendenza a considerare le credenze popolari in opposizione alle cause biomediche, i risultati di questo studio evidenziano come entrambe considerino i fattori di rischio correlati alle infezioni delle vie respiratorie nei bambini e molti di questi fattori di rischio che rendono i bambini più suscettibili a tali infezioni sono in realtà comuni ad entrambi i modelli. Il comportamento rispetto alla ricerca delle cure è un processo complesso rappresentato dallo spostamento delle interpretazioni della malattia e delle opzioni di trattamento e vincolato dalla povertà e da altri fattori strutturali che stabiliscono il contesto in cui i partecipanti dello studio operano su base giornaliera.

Conclusioni: Ricercatori e responsabili politici hanno la necessità di impiegare un concetto più espansivo di modello esplicativo che adatti le difficoltà quotidiane e gli aspetti involontari della cura e dell’atteggiamento verso la ricerca delle cure degli individui che provengono da comunità marginali in tutto il mondo e dovrebbe di conseguenza allontanarsi dall’idea semplicistica che le credenze esotiche e le pratiche delle comunità locali siano “barriere culturali” per un efficace trattamento sanitario.

TAKE-HOME MESSAGE

The mundane struggles and involuntary aspects of health care and treatment-seeking behaviour of individuals from marginal communities all over the world need to be understood in a context of socio-economic, political and historical deprivation.

Competing interests - none declared.

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INTRODUCTION

Acute Respiratory Infection (ARI) is one of the leading causes of morbidity and mortality in children under five worldwide [1]. WHO has developed a recommended case management strategy focusing on early diagnosis and appropriate treatment of ARI-related health problems [2]. Effective implementation of this strategy requires gaining better understandings of community beliefs and practices concerning ARI in children [3]. This is especially true in culturally and linguistically diverse settings, where policy-makers and healthcare service providers need to be aware of the presence of multiple, intersecting beliefs and practices, and be familiar with local terminology relating to clinical symptoms [4]. Recently, Bangladesh has successfully achieved its Millennium Development Goal 4 target, reducing the under-five mortality rate more than by two-thirds from 144 deaths (per thousand live births) in 1990 to 38 deaths (per thousand live births) in 2015 [5]. But ARI remains the leading cause of childhood illness and death in the country [6]. Moreover, gains made in child survival are not evenly distributed across the country; the under-five child mortality rate in more marginalized areas, including the Chittagong Hill Tracts (CHT) region, is significantly higher than the national average [7]. CHT region has been disadvantaged and isolated for many years, owing in part to 25 years (from 1972 to 1997) of insurgency and political turmoil [8]. The region is very different from the rest of the country in terms of geography, ecology and agriculture, as well as culturally and linguistically [9]. CHT is one of the most vulnerable regions in the country according to almost all major development indicators [10]. During the civil conflict, this region was excluded from nutrition, health and other development programmes that were implemented in the rest of the country [11]. Given this situation there is still no existing literature on child health-related problems in the context of CHT. This study aimed to fill this gap in the existing literature by investigating the complexities surrounding community be-

liefs and practices of ARI in children among different ethnic minority groups in the CHT region of Bangladesh.

METHODS

Ethnographic approach and Explanatory Models

Epidemiological studies reveal important information about ARI disease burden and differential vulnerability [12]. However, the statistical approach, which requires standardized questionnaires and survey designs, cannot adequately capture the often complex matrix of socio-cultural and other interlinking factors influencing perceptions, attitude, practices and treatment-seeking behaviour for conditions such as ARI in children [13]. It is now well-established that standard disease surveillance systems, no matter how statistically powerful, well-implemented and robust, risk producing misleading information if not accompanied by a thorough understanding of local aetiologies and taxonomies [14]. Ethnography, which equips the researcher with the opportunity to participate in local daily life and activities, can provide invaluable insights and information about the context in which health problems are experienced [13].

By drawing an ethnographic approach, the research presented in this paper attempts to present a holistic and bottom-up understanding on the differing ways child health (in this case ARI) related issues are understood and managed in the CHT region. It draws on the idea of Explanatory Models (EMs): a conceptual framework developed by Arthur Kleinman (1980) [15] and widely used by social scientists conducting public health research, referring to 'sets of assumptions about what types of causes and causal principles are relevant to a particular phenomenon' [16]. Related concepts, such as illness experience, symptom recognition and reporting, treatment-seeking practices and local terminology are often incorporated into EM frameworks [17]. Despite the criticisms that EM approach not only ignores the social relations that shape and distribute health problems but fails

to capture the power relationships between and across groups and classes as a relevant health-related factor, locally-relevant EMs can enable the formulation of culturally-appropriate healthcare programmes, with the aim of achieving earlier diagnosis/treatment and thus decreased (ARI-related) morbidity and mortality [18]. In a multi-cultural and multi-linguistic setting like the CHT, it is particularly important to understand the diversity of (often overlapping and intersecting) ways that people understand and respond to health problems such as ARIs. It needs to be mentioned here that only two previous studies on treatment-seeking behaviour have been conducted in the CHT Region [19, 20], but neither focused specifically on child health, let alone childhood ARI, and Ahmed's (2001) quantitative study could not adequately capture the cultural nuances of health care and treatment-seeking behaviour in a multicultural setting like the CHT region [19, 20].

Study site and population

The Chittagong Hill Tracts (CHT) region of Bangladesh consists of 3 districts: Rangamati, Khagrachari and Bandarban, and occupies a land area of about 5,093 square miles: approximately one tenth of the total area of Bangladesh [21]. The topography of the region is characterized by numerous hills, ravines and cliffs covered with dense vegetation, completely in contrast with the rest of the country which is flatter and more geographically accessible [22]. The CHT region is a post-conflict area with a serious shortage of healthcare provision and information due to the difficult terrain, physical isolation, language barriers and the pockets of insecurity [23]. Currently, CHT region is home to 11 distinct ethnic groups: *Chakma, Marma, Tripura, Tanchangya, Chak, Pankho, Mro, Bawm, Lushai, Khyang, and Khumi* [10]. These groups occupy different ecological zones, and differ also in terms of language, customs, religious beliefs and socio-political organization [21]. However, the demographic composition of these ethnic groups has been drastically altered during the time of civil conflict [8]. Larger

ethnic groups (*Chakma, Marma and Tripura*) can be found across all three districts of CHT, while some smaller groups (e.g. *Lushai, Khumi, Chak*) are only found in Bandarban district [24]. This informed the decision to locate the study in Bandarban district, where it was possible to collect information from 10 of the 11 ethnic groups (only the *Pankho* group was not represented in this study).

Study design

Fieldwork for this study was conducted between January and October 2017 by the Bengali-speaking author, aided by an experienced local field assistant from the Mro ethnic group, who was fluent in six local languages. An ethnographic approach was employed, based on participant observation coupled with semi-structured interviews ($n = 10$), key informant interviews ($n = 10$) and focus groups ($n = 80$ participants) in order to elicit different perspectives and enable data triangulation [25, 26]. A combination of ongoing political insecurity, physical isolation and project resource constraints necessitated a cross-sectional, single-pass study design. Altogether, 10 FGDs (one per ethnic category) were conducted with mothers and other caregivers (grandparents, aunts, uncles). The group size in each case was 8 participants: this was large enough for ensuring that a range of opinions and experiences were discussed, but small enough to enable everyone to participate and keep discussion on track [27]. As is standard practice in this kind of qualitative research, theoretical purposive sampling was employed to gain a range of perspectives from ethnic mothers, caregivers and other local stakeholders. Recruitment was facilitated by local village heads, who were informed about the purpose and significance of the study. From each focus group, one individual was selected for an individual semi-structured interview. The selection of participants for individual interviews was done purposively with the help of the field assistant who selected individuals who were more involved in the group discussions and who seemed more resourceful (with recent experience of caring for

a child suffering from ARI) and enthusiastic about sharing their understandings and experience. In addition, 10 key informant interviews were conducted with a variety of local stakeholders (employee of a pharmaceutical company, national and international NGO workers, government doctors, and employees of Tribal Cultural Institute of Bandarban, village headmen, sellers of local drug stores, baidyas (traditional healers), local shop keepers and local university students).

The interviews and FGDs were transcribed by the author and the local field assistant, and then translated, first into Bengali and then into English, with key/untranslatable terms left in the original language. Data analysis followed the principles of grounded theory, in which findings are identified 'inductively through data collection and analysis rather than guided by an existing theoretical model' [28, 29]. The transcripts and accompanying field-notes were read and re-read carefully to identify emergent themes, concepts and patterns.

Throughout the study, ethical standards were strictly maintained. Informed consent was taken from the participants. Sufficient information about the research was given to all participants. Information collected from the fieldwork has been anonymised before conducting data analysis and documentation to protect participants' anonymity and confidentiality. All study participants had been given the opportunity to withdraw from the research at any point if they wanted to. It was made sure participants would not get harmed due to their participation in this research.

RESULTS AND DISCUSSION

Explanatory Models and treatment practices: Variation across & within Ethnic Groups

Very few of the study participants were familiar with the term 'Acute Respiratory Infections' or 'ARI', while some of them had heard the term pneumonia. However, they reported that children suffered from fever and cold along with cough, runny nose and

difficulty in breathing. Therefore, these 'signs and symptoms' formed the basis of subsequent questioning (although the term 'ARI' was used as a shorthand in this paper).

While some features of EMs were widely shared by all the ethnic groups involved in the study, there was also significant variation between participants from different groups – a phenomenon that reflects observations of other researchers that EMs are deeply embedded within local cultural specificities that influence all the elements in an EM: experience of symptoms, vocabulary used to report them, and health-seeking behaviour [16, 30]. Table 1 contains EMs of childhood ARI for all ethnic groups based on data collection in this study.

EMs of childhood ARI varied substantially across ethnic groups in the study area. Abrupt weather change- particularly the onset of cold weather, were commonly identified as the main causes of ARI. For example, one male Lushai participant said, "*I think abrupt change of weather is the main reason why children suffer from cold, cough, fever and respiratory problems. When suddenly fogs appear during pre- winter or sudden rainfall in pre- monsoon season, children are more prone to get sick*".

In contrast, one elderly Mro woman, who looks after her grandchildren, emphasized a hereditary/familial connection: "*If the parents and grandparents have respiratory problems, then the children in that family will also suffer from respiratory illness. It moves across generations. This is called ta yoo, respiratory illness transmitted by mothers' milk. One of my grandsons suffers from ta yoo*".

Similar variation was observed in treatment-seeking practices. In several FGDs, participants claimed to rely primarily on biomedical services, often contrasting this situation with that of the past – and sometimes with that of other groups. For example, one Lushai participant said, "*These days we only have faith in the biomedical treatment. We do not rely on the treatment offered by local herbalists and traditional healers. But, when I was young more people used to seek treatment from traditional healers*".

Table 1. Explanatory Models (EMs) of ARI in children in ethnic groups of CHT, Bangladesh.

Ethnic Group	Signs and Symptoms related to ARI	Local Terms	Perceived Causes	Home Remedies	Food Intake	Other Traditional Practices/ Rituals
Bawm	Fever	<i>Jow</i>	Weak body, lack of blood, season change	Hot water, hot drinks, washing the head with cold water	All kinds of <i>anthor</i> (sour) food are restricted	<i>Chabanak</i> and <i>tum</i> , both involve recitation and blessing the sick child- hoping for a quick recovery
	Cough	<i>Khooreng</i>				
	Running nose	<i>Daibor</i>				
	Difficulty in breathing	<i>Tosham, Harsha</i>				
Chakma	Fever	<i>Jor uitte</i>	Exposure to cold, season change, lack of supervision by the parents	Hot drinks, washing the head with cold water, massaging the chest area with warm mustard oil	All kinds of sour food are restricted along with <i>bilsha, puti</i> fish and beef	Making herbal medicine at home with a <i>baidya's</i> consultation
	Cough	<i>Chinnobiri</i>				
	Running nose	<i>Sheba haach</i>				
	Difficulty in breathing	<i>Dakbuk tana</i>				
Chak	Fever	<i>Ashainka nabe</i>	Season change, lack of hygiene and awareness, wrath of the angry gods	Massaging the chest area with warm mustard oil, using herbal medicine bought from pachari stores	All kinds of sour food are restricted	Three annual rituals called <i>kbug dube</i> to appease the supernatural powers
	Cough	<i>Kruksb gube</i>				
	Running nose	<i>Shummi lube</i>				
	Difficulty in breathing	<i>Paba jomegaa</i>				
Lushai	Fever	<i>Kboshik, Damlao</i>	Season change, abrupt change of temperature	Hot drinks, washing the head with cold water, massaging the chest area with warm mustard oil and garlic, use of unripe turmeric	All kinds of sour and spicy food are restricted	N/A
	Cough	<i>Khuu</i>				
	Running nose	<i>Fritlaang</i>				
	Difficulty in breathing	<i>Toshum</i>				
Marma	Fever	<i>Phia</i>	N/A	Hot drinks, washing the head with cold water	All kinds of sour food are restricted	N/A
	Cough	<i>Kbrong, Shoor, Shon</i>				
	Running nose	<i>Moi rare</i>				
	Difficulty in breathing	<i>Paang</i>				
Mro	Fever	<i>Krao</i>	N/A	Hot drinks, massaging the chest area with warm mustard oil	All kinds of <i>choor</i> (sour) & sticky food are restricted	<i>Wan tu kola</i> i.e. wrapping a loop of cotton thread around the neck of the sick child
	Cough	<i>Yoo</i>				
	Running nose	<i>Urma</i>				
	Difficulty in breathing	<i>Ta-Yoo</i>				
Khumi	Fever	<i>Kyanu</i>	No perceived causes	N/A	All kinds of <i>thoorna</i> (sour) food are restricted	Rituals to appease the angry evil spirit called <i>Toyoo naye</i>
	Cough	<i>Okbio</i>				
	Running nose	<i>Nu three thee theo na</i>				
	Difficulty in breathing	<i>Abaa youngne</i>				
Khyang	Fever	<i>Okolja</i>	Season change	Hot drinks, washing the head with cold water	All kinds of sour food are restricted	<i>Sheba</i> involves herbal treatment consisting of praying, eating jungle herbs and fruits.
	Cough	<i>Okbu u sha</i>				
	Running nose	<i>Konukhtebeet</i>				
	Difficulty in breathing	<i>Krushok lotejina</i>				
Tanchangya	Fever	<i>Joor</i>	<i>Thanda hawa</i> (cold air), season change	Hot drinks, washing head with cold water, hot mustard oil massage	All kinds of sour food are restricted	N/A
	Cough	Khashi				
	Running nose	<i>Hona, Daksume</i>				
	Difficulty in breathing	<i>Shebai dbourju dey</i>				
Tripura	Fever	<i>Lumi, Kuloo</i>	Exposure to cold, season change	Hot drinks, washing the head with cold water	All kinds of sour food are restricted	<i>Rakha huje khami</i> (similar ritual like <i>wan tu kloa</i> of the Mros)
	Cough	<i>Kuchoyumi</i>				
	Running nose	<i>Kongrai</i>				
	Difficulty in breathing	<i>Ramabaja</i>				

However, many other participants relied more on folk remedies. For example, one Mro mother mentioned, *“When a child becomes sick with fever, cough and breathing problem we perform ‘wan-tu-kloa’. We make a loop with a cotton thread 3, 5 or 7 times, pray and then wrap that piece of cotton thread around the neck of the sick child”*.

Not only do EMs vary across different ethnic groups, they also vary within them. For example, one elderly Bawm woman placed her faith very much in traditional folk medicine: *“When suffering from cold, fever and cough we usually take the sick child to the baidya. The baidya then checks the child and prescribes medicine to be bought from ‘pachari’ (local herbal drug stores located in market places, where prepared herbal medicine as well as ingredients for making herbal medication are available)”*. By contrast, a middle-aged shop keeper from the same ethnic group had a very different opinion: *“I have faith in the doctors’ treatment. I always take my children to the local government hospital when they become sick. I have doubts about the credibility of the traditional healing”*.

In this case, factors other than ethnic identity – for example, education, age and proximity to urban areas – may have greater influence in ARI-related beliefs and practices. In general, study participants with higher levels of education, younger age and proximity of living near urban areas seem to value biomedicine more than traditional healing practices. Previous research in the study area showed that the Mros, who have the lowest levels of formal education in the study area, tend to rely more on traditional practices and home remedies [19], but this study also indicated that educational differences may play out within ethnic groups.

Existing literature suggests that, across the world, people often combine both physical and psychosocial causes of illness into a single EM [16]. For example, during their work on the relationship between HIV and AIDS in Haiti, Farmer and Good (1991) found one man saying, *“I understand that a virus causes AIDS, but the question is who sent the virus!”* [31]. This tendency to incorporate physical

and supernatural causes into a single EM was found to be widespread among the participants of this study in CHT. For example, one Khumi participant explained: *“A child may catch a cold, fever and cough due to the exposure to cold. But if the fever is very high and the child becomes unconscious then it is due to the evil spirits. When we know the child is sick because of exposure to cold we buy medicine from the local drug store. If after taking the medication, the sick child’s condition doesn’t improve or if we from the very beginning sense that the cause is supernatural then we go for nature worshipping”*.

Sometimes, in different parts of an interview, a participant emphasized different kinds of disease causation. For example, one Chak grandmother talked about her faith in biomedicine, and linked this with modernity: *“The Chaks are the most literate compared to other ethnic groups in this area. Due to the active presence of NGOs in our area, we are aware about many health and hygiene issues. Now, even during a mild episode of cold and cough we either take our children to a doctor or go to a doctor to seek advice and suggestions or buy medicine”*.

However, later in the same interview, she went on to say, *“Even if we are Buddhist, like most hill people we believe in other gods”*. She went on to describe a number of rituals performed at particular times of year to ensure the good health of the local community. This syncretic mosaic of beliefs, in which biomedical beliefs coexist with, but do not contradict, other (psycho-social/supernatural) ways of thinking, was evident in many other participants’ accounts, including that of Pashu, an old Khyang male key-informant, who said: *“If a child suffers from cold, fever, cough and difficulty in breathing first we go to the local drug stores. But, if the situation does not improve, then we go straight to the local hospital. Sometimes the doctors cannot improve the situation. Thus, we bring the sick child back home and perform a special spiritual ritual”*.

Comparison between biomedical and local perspectives on the causes of ARI

On the surface, the local perceived causes of ARI mentioned by the participants ap-

pear to have little in common with biomedical perspectives. According to biomedicine, ARI is not a specific disease, but rather a syndrome that can be caused by several different infectious agents [32]. The infectious agents responsible for the causation of ARI are predominantly transmitted via direct person-to-person contact, either through the inhalation of droplets released through coughing/sneezing or through contact with hands or articles contaminated with infected discharge from the nose or throat [32]. ARIs can be caused by both viruses and bacteria [33]. In contrast to this, and in accordance with findings from studies on ARI elsewhere in Bangladesh, study participants from most of the ethnic groups identified exposure to cold and seasonal change as the main causal factors of ARI in children. Only Chakma participants associated lack of hygiene with the development of ARI. None of the participants, irrespective of their ethnic origin gave any explanations of ARI causation that involved any pathogenic agents such as virus or bacteria. However, although the study participants' beliefs concerning the proximate causes of ARIs appear to be at odds with biomedical knowledge, both share a common understanding that these proximate causes are embedded within deeper webs of explanation. The dominant public health perspective asserts that, while viruses or bacteria are the immediate cause of ARI, there are many other factors that increase an individual's susceptibility to these pathogenic agents. These factors include (in different combinations): malnutrition, poor hygiene and sanitation, past/recurrent episodes of ARI, environmental stress such as indoor and outdoor air pollution and excessive exposure to sunlight [32]. Many of these factors are present among the study population and are likely to contribute to the presence of ARIs in CHT. Malnutrition in under-five children in Banderban district is very high compared to the rest of the country [34], a situation attributable to a number of interlinking factors, including a drastic change in the agricultural and livelihood patterns as commercial tobacco plantation has abruptly

replaced traditional subsistence economy [35]. In recent years, the study population has also suffered from acute food shortages [36], caused in part by natural disasters in the form of flooding, alongside rodent attack of rice fields, with crop losses of up to 100% reported in many areas [37].

Water and sanitation are serious issues in the CHT: only a very small number of study participants had access to safe drinking water, let alone piped supply. Hand washing before food consumption and after defecation were rarely observed during fieldwork, a function at least in part of the long distances that women have to go to fetch water and the lack of hygiene education initiatives in the region. Observations during fieldwork also indicate that children are typically exposed to high levels of air pollution in the form of both tobacco smoke and smoke from firewood used for cooking. Cooking is generally done indoors with no chimney or other system to allow the smoke to be ventilated out. Tobacco smoking in the form of cigarettes, *bidis* (hand-rolled cigarettes) and pipes appears to be almost ubiquitous among both men and women the study population, in contrast with the plain-dwelling Bengali population, where smoking tobacco is a taboo amongst women [38]. Numerous studies worldwide have revealed that parental smoking is a significant risk factor for ARI among children under five [39, 40]. Likewise, study participants also talked about causes of cough and fever that incorporated proximate and underlying levels of explanation. Many of these, mentioned above, posited that, while ARIs might be caused directly by physical factors (exposure to cold, temperature change etc.), underlying causes might be situated within the psycho-social and/or supernatural realm. Others, however, drew on much more similar ideas to dominant public health understandings. For example, although most study participants smoked regularly both indoors and outdoors, there was widespread recognition that exposure to tobacco smoke could be detrimental to children's health, causing difficulty in breathing.

Another underlying explanation for childho-

od ARI common to both public health understandings and those of study participants was the lack of parental supervision and childcare – a factor highlighted in Young and Jaspers' (2006) multi-layered model of the contributors to child illness and death in developing countries [41]. Most households in the study population are dependent on jhum (slash and burn) cultivation, with both the husband and wife working in the field. This can leave a significant childcare gap; especially if there are no grandparents living locally, despite the fact that most married couples live close to their parents (could be either side). Echoing the findings of Rashid et al., (2001), many participants from the group discussions and individual interviews identified lack of parental supervision as a possible reason for ARI occurrence in under-five children [42]. A Chakma mother explained: *“During the pre-winter season children often roam around bare feet and without being properly covered with warm cloth. They get exposed to cold and develop fever and respiratory problems. But although we are aware of the possible consequences as we are poor, we cannot skip our work in the field to stay back home and look after our kids”*.

Workloads for households were dependent on jhum cultivation peak during the pre-harvest season (July to October), when intensive work is crucial for securing a good harvest. The difficulties this presents are often compounded by food shortages experienced at this time of year. In combination with year-round food insecurity, the risk of acute child malnutrition is recognized both by public health discourse and by study participants as increasing young children's susceptibility to health problems (including ARIs).

Beliefs, practices and treatment seeking: The limits of 'folk beliefs' and explanatory models

In contrast to much of the earlier qualitative work on health behaviour, which supposed that local beliefs and explanatory models shape treatment-seeking in a direct and straightforward manner and that 'inappropriate' folk beliefs and aetiologies represented a significant 'cultural barrier' to appropriate tre-

atment and care, this study suggests a much more complex and nuanced situation. Paul Farmer (1997) once accused medical anthropologists of unjustified and 'immodest' causal claims which posited that high rates of HIV/AIDS among many populations in the global South could be attributed to 'cultural factors', including polygamy, a tendency for sexual promiscuity and 'exotic voodoo rituals' entailing blood-letting [43]. Why is it, Farmer asks, that anthropologists have eagerly studied these 'exotic' practices while ignoring the much more mundane realities of poverty and lack of meaningful choices over the course of one's life?

In relation to ARI treatment-seeking in CHT, we can see that most of the times, study participants' understandings of the physical and psychosocial causes of ARI do indeed shape their responses to their children falling sick, leading them to seek treatment from biomedical services, as well as from different types of local traditional healers. However, rather than a linear relationship between 'beliefs' and 'behaviour', this study suggests that parents' responses to childhood illness are much more complex and contingent, comprising an entangled web in which 'culture' and 'folk beliefs' are heavily inflected by pressing social, economic and political realities. Thus, while study participants often recognized that their own behaviour (smoking, leaving children alone for extended periods of time even when ill, delays in taking sick children for treatment, etc.) were part of the wider (underlying) 'explanatory models' for their children becoming seriously ill with ARIs, their choices were often very limited. Many participants talked of their addiction to tobacco – a growing phenomenon across the global South where transnational tobacco corporations are marketing increasingly aggressively. Many others spoke of the challenges, particularly in the harvesting and pre-harvest period, of finding the time to take a sick child to seek treatment. As a Bawn mother explained, *“Harvesting time is very important for us. We are poor and cannot hire workers. If my child becomes sick during harvesting time I have to*

wait till the harvest time is over and then take her to hospital". Making the journey to a health centre is particularly challenging given the geographical isolation of much of the study area, especially in the hinterlands far from the highway that connects the area with Bandaran town. As one Khumi participant said, "We make a structure using two bamboo poles and a thick blanket to carry a sick child to hospital. It has happened numerous times in the past that the sick child died before reaching the health facility". Because of this reason to some individuals from the ethnic groups in CHT, hospitals are synonymous with death [44].

Underlying all of this, of course, is a daily reality embodied with grinding poverty combined with the geographical and political marginalization of a long-neglected area struggling in the aftermath of protracted violent conflict, which means depleted health and transport infrastructure and systematic under-investment. All the study participants, irrespective of their ethnic origin, identified poverty as the biggest barrier to receiving appropriate treatment of their preference for a particular episode of ARI in children. On many occasions, the study participants informed that because of lack of money they could not seek appropriate treatment for their children even when they thought it was absolutely necessary. One Chakma mother said, "The baidyas are from our communities and sometimes knowing the extent of our poverty they accept whatever we can afford to give them for herbal medicine or a ritual. But I will not get any such favor if I need to buy drugs from local drugstores". Study participants also stated that unlike medically trained doctors in their private practices, traditional health service providers don't always charge money upfront and sometimes the payment can be made in the form of agricultural products. However, even here, changing agricultural practices and environmental situations were changing things. An elderly Tanchangya baidya explained: "Because of massive deforestation in the area it is very difficult to find the required ingredients to make a specific herbal medicine. Thus, in the past I could find all the required ingredients in one

hill, now it requires more time and effort to make herbal medicines as I have to wander around hills for a long time to find the rare plants".

Although public health researchers and social scientists working in the field of health and treatment-seeking behaviour have long accepted that socioeconomically disadvantaged populations all over the world exhibit higher rates of mortality and morbidity than their richer and privileged counterparts, if carefully observed, we could reach the conclusion that the adverse effects of institutionalized inequalities in wealth and power on vulnerable populations seem not to be considered the subject of 'polite discussion' in many medical and epidemiological journals [45]. Another possible reason, according to Paul Farmer (1997), that large structural factors are not candidly discussed in the biomedical journals may be related to how public health research funds are allocated where anthropologists are assigned to conduct 'rapid ethnographic assessments' in order to identify the 'local cultural barriers' to effective health care and treatment seeking. By doing so many anthropologists working in the field of public health are forced to employ a narrow concept of folk beliefs that assume 'exotic' practices are out of the ordinary, isolated and even to a large extent voluntary despite the existence of extensive anthropological research evidence indicating that in most resource-poor settings decision-making process related to health care and treatment seeking is influenced by much more mundane and structural factors. By ignoring the impact of macro-level structural forces on the daily lives of marginal communities we may be at risk of associating 'exotic' beliefs and practices as the predominant reasons behind inappropriate health care practices and treatment-seeking. But then we cannot again neglect a micro-level focus on the ethnographic detail of individual biography, agency and local cultural context. As Farmer (1997) claimed: "Many of the issues of individual agency are illuminated by examining the gritty details of biography; life histories must be embedded in ethnography if their representativeness is to be understood. These local understandings are to be embedded, in turn,

in the larger-scale historical system of which the fieldwork site is part. Only through such a broad approach will the role of 'structural violence' come into view" [43].

CONCLUSION

It is clear that Explanatory Models do have a role to play in terms of identifying how ethnic minority people in the CHT understand and respond to ARIs and other threats to their children's health and survival. Understanding local aetiologies remains an important endeavor for those with a stake in improving the health of young children – and others – across the world [46]. But this study suggests that it is time to broaden the concept of EMs and not to place them in binary opposition to 'etic' biomedical models.

What might this entail? First, researchers should avoid the temptation to focus disproportionately on the 'exotic' and on those parts of explanations that best fit the assumptions of what 'folk beliefs' are and do. Alongside beliefs that illnesses are caused by malevolent supernatural forces, researchers must also meticulously document the more mundane realities lived and described by impoverished informants who are often struggling against what Paul Farmer (1997) has called 'the hard surfaces of life' [43]. If we continue to ignore or miss (or structure our research questions so as not to engage with) local explanations that go beyond the proximate and exotic, there is little wonder that we are stuck with increasingly sterile statements about 'cultural barriers' to effective healthcare.

Second, researchers should put away a pre-supposition that 'folk beliefs' or 'local explanatory models' exist in binary opposition to objective biomedical knowledge. As the growing work on the culture of science and biomedicine tells us, biomedical knowledge and practices are often in fact far from being culturally-neutral or value-free [47]. But, crucially, this study underlines the growing recognition among critical medical anthropologists that 'traditional beliefs' do not exist in unchanging isolation. The global reach of biomedicine in various forms, alongside increased global travel

of other medical ideas and technologies deriving from multiple 'traditions', makes 'system thinking' increasingly untenable. What we are seeing among the people of the CHT is not the conflict of two contrasting and coherent 'systems' but an inter-connected set of what Parkin (1995) has called 'latticed practices', which are in constant flux as new possibilities arise (for example, through the spread of formal education) alongside new constraints [48]. More ethnographic studies based on long term participant observation and extended case studies are required to better understand how caregivers and communities in disadvantaged contexts respond to childhood illnesses in the face of poverty, inequality, poor health care systems and continuing social and political change.

In policy terms, these insights are important if we are to avoid repeating mistakes by formulating policies to eradicate cultural barriers to effective healthcare by assuming that 'folk beliefs' or EMs one dimensionally shape treatment-seeking behaviour. Of course, it is important to understand and engage constructively with the health-related beliefs and practices of the indigenous people of the CHT, as it is with ethnic communities everywhere. This should entail, among other things, the introduction of culturally and linguistically appropriate child health-related programme interventions in the study area as well as the use of local terms of the signs and symptoms of ARI to undertake large-scale epidemiological studies to uncover specific information on child mortality and morbidity in the study context. These efforts are needed to avoid and tackle cross-cultural misunderstandings between biomedical and local health belief and practice systems which could potentially be disastrous [49]. But without extending the EMs to encompass structural forces (such as poverty, livelihood insecurity, poor transportation facilities, long history of discrimination, socio-economic and political inequalities) that influence the underlying factors that create the daily realities of the study population with reference to child healthcare and treatment-seeking practices, it

would not be possible to achieve significant improvement of child health in CHT region. As discussed earlier, policy-makers must understand the involuntary aspects of treatment seeking behaviour of the study population- and other marginalised populations- across the world by accepting the simple yet often hard to accept reality that like the participants in this study, structural factors incapacitate individuals from other marginalised communities of the world to attain their preferred ways of child care practices and treatment options. This study argues that it is high time that both researchers and policy-makers need to think about a more expansive concept of explanatory models: where 'folk beliefs' are not seen as binary oppositions to biomed-

cal 'truth'. This version of explanatory models suggests that individuals from marginalised communities, especially in resource poor settings often find themselves in situations where their treatment decision-making process is usually constrained by a web of interplaying large scale structural factors embedded in the local context.

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References

1. Martineau AR, Jolliffe DA, Hooper RL, Greenberg L, Aloia JF, Bergman P, et al. Vitamin D supplementation to prevent acute respiratory tract infections: systematic review and meta-analysis of individual participant data. *BMJ*. 2017 Feb 15;356:i6583.
2. Noordam AC, Carvajal-Velez L, Sharkey AB, Young M, Cals JW. Care seeking behaviour for children with suspected pneumonia in countries in sub-Saharan Africa with high pneumonia mortality. *PLoS One*. 2015 Feb 23;10(2):e0117919.
3. Abbey M, Bartholomew LK, Chinbuah MA, Gyapong M, Gyapong JO, van den Borne B. Development of a theory and evidence-based program to promote community treatment of fevers in children under five in a rural district in Southern Ghana: An intervention mapping approach. *BMC Public Health*. 2017 Dec;17(1):120.
4. Singer M, Baer H. *Introducing medical anthropology: a discipline in action*. Lanham: Rowman Altamira; 2011 Nov 4.
5. You D, Hug L, Ejdemyr S, Idele P, Hogan D, Mathers C, et al. Global, regional, and national levels and trends in under-5 mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Inter-agency Group for Child Mortality Estimation. *Lancet*. 2015 Dec 5;386(10010):2275–2286.
6. Chowdhury F, Sturm-Ramirez K, Abdullah Al Mamun A, Bhuiyan MU, Chisti MJ, Ahmed M, et al. Factors driving customers to seek health care from pharmacies for acute respiratory illness and treatment recommendations from drug sellers in Dhaka city, Bangladesh. *Patient Prefer Adherence*. 2017;11:479.
7. Dewan MH. Socio-economic Situation of the Indigenous People in the Chittagong Hill Tracts (CHT) of Bangladesh. *Middle East J Bus*. 2013 Jul;8.
8. Adnan S. *Migration land alienation and ethnic conflict: causes of poverty in the Chittagong Hill Tracts of Bangladesh*. Dhaka: Research & Advisory Services; 2004.
9. Rahman SA, Kielmann T, McPake B, Normand C. Healthcare-seeking behaviour among the tribal people of Bangladesh: can the current health system really meet their needs? *J Health Popul Nutr*. 2012 Sep;30(3):353.
10. Bangladesh UN. *Socio-Economic Baseline Survey of Chittagong Hill Tracts*. Dhaka: Human Development Research Centre; 2009.

11. Uddin J, Hossin MZ, Mahbub F, Hossain MZ. Healthcare-seeking behavior among the Chakma ethnic group in Bangladesh: can accessibility and cultural beliefs shape healthcare utilization? *Int Q Community Health Educ.* 2013 Oct;33(4):375–389.
12. Trostle JA. *Epidemiology and culture.* Cambridge: Cambridge University Press; 2005 Feb 21.
13. Parker M, Harper I. The anthropology of public health. *J Biosoc Sci.* 2006 Jan;38(1):1–5.
14. Whiteford LM, Bennett LA. Applied anthropology and health and medicine. In: Kedia S, Willigen JV. *Applied Anthropology: domains of application.* 1st ed. Westport Connecticut: Praeger; 2005. p. 119-49.
15. Kleinman A. *Patients and healers in the context of culture: An exploration of the borderland between anthropology, medicine, and psychiatry.* Berkley: University of California Press; 1980.
16. Lynch E, Medin D. Explanatory models of illness: a study of within-culture variation. *Cogn Psychol.* 2006 Dec 1;53(4):285–309.
17. Dimsdale JE, Xin Y, Kleinman A, Patel V, Narrow WE, Sirovatka PJ, et al. editors. *Somatic presentations of mental disorders: refining the research agenda for DSM-V.* Arlington Virginia: American Psychiatric Association; 2009 Mar 2.
18. Dein S. Against belief: The usefulness of explanatory model research in medical anthropology. *Soc Theory Health.* 2003 Sep 1;1(2):149–162.
19. Masud AS. Differing health and health-seeking behaviour: ethnic minorities of the Chittagong Hill Tracts, Bangladesh. *Asia Pac J Public Health.* 2001 Jul;13(2):100–108.
20. Rahman SA, Kielmann T, McPake B, Normand C. Healthcare-seeking behaviour among the tribal people of Bangladesh: can the current health system really meet their needs? *J Health Popol Nutr.* 2012 Sep;30(3):353.
21. Mohsin A. *The politics of nationalism: the case of the Chittagong Hill Tracts, Bangladesh.* Dhaka: University Press Limited; 1997.
22. Chowdhury AR. *Counting the hills: assessing development in Chittagong Hill Tracts.* Bangladesh. Dhaka: University Press Limited; 2001.
23. *Nutrition and health surveillance in the Chittagong Hill Tracts. Nutritional Surveillance Project Bulletin No. 13.* Dhaka: Helen Keller International; 2003.
24. Gain P. *The Chittagong hill tracts: life and nature at risk.* Society for Environment and Human Development. Dhaka: University Press Limited; 2000.
25. Bernard HR. *Research methods in anthropology: Qualitative and quantitative approaches.* Lanham: Rowman & Littlefield; 2017.
26. Guest G, Namey EE, Mitchell ML. *Collecting qualitative data: A field manual for applied research.* Thousand Oaks: Sage; 2012.
27. Hesse-Biber S. *Approaches to qualitative research: A reader on theory and practice.* Oxford: Oxford University Press; 2003.
28. Glaser BG, Strauss AL. *Discovery of grounded theory: Strategies for qualitative research.* New York: Routledge; 2017.
29. Sahoo KC, Hulland KR, Caruso BA, Swain R, Freeman MC, Panigrahi P, et al. Sanitation-related psychosocial stress: a grounded theory study of women across the life-course in Odisha, India. *Soc Sci Med.* 2015 Aug 31;139:80–89.
30. Kleinman A. Culture and depression. *New Eng J Med.* 2004 Sep 2;351(10):951–953.
31. Farmer P, Good BJ. Illness representations in medical anthropology: A critical review and a case study of the representation of AIDS in Haiti. In: *Mental representation in health and illness.* New York: Springer; 1991. p. 132-162.
32. Pebley A, Hurtado E, Goldman N. Beliefs about children's illness. *J Biosoc Sci.* 1999 Apr;31(2):195–219.
33. Campbell H. Acute respiratory infection: a global challenge. *Arch Dis Child.* 1995 Oct;73(4):281.

34. District Statistics 2011 Bandarban. Dhaka: Bangladesh Bureau of Statistics; 2013.
35. Gain P. The Chaks: life on the fringe. Dhaka, Bangladesh: SEHD Press; 2011.
36. Muniruzzaman AN. Food security in Bangladesh: a comprehensive analysis. *Peac Sec Rev.* 2013;5(10):46–73.
37. Singleton GR. Rodent outbreaks: ecology and impacts. Los Baños: International Rice Research Institute; 2010.
38. Roy A. Tobacco consumption and the poor: an ethnographic analysis of hand-rolled cigarette (bidi) use in Bangladesh. *Ethnography.* 2012 Jun;13(2):162–188.
39. Taksande AM, Yeole M. Risk factors of Acute Respiratory Infection (ARI) in under-fives in a rural hospital of Central India. *J Pediatric Neonatal Individ Med.* 2015 Dec 2;5(1):e050105.
40. Ujunwa FA, Ezeonu CT. Risk Factors for Acute Respiratory Tract Infections in Underfive Children in Enugu Southeast Nigeria. *Ann Med Health Sci Res.* 2014;4(1):95–99.
41. Young H, Jaspars S. The Meaning and Measurement of Acute Malnutrition: a primer for decision-makers. London: Humanitarian Practice Network. Overseas Development Institute; 2006. Paper No. 56.
42. Rashid SF, Hadi A, Afsana K, Begum SA. Acute respiratory infections in rural Bangladesh: cultural understandings, practices and the role of mothers and community health volunteers. *Trop Med Int Health.* 2001 Apr 1;6(4):249–255.
43. Farmer PE. Ethnography, social analysis, and the prevention of sexually transmitted HIV infection. *The anthropology of infectious disease.* Amsterdam: Gordon and Breach. 1997:413–438.
44. Dorgabekova M. On Mru women health beliefs and practices and on their non- use of health services. Masters Thesis, University of Amsterdam: 2003.
45. Pool R, Geissler W. Medical anthropology. Glasgow: McGraw-Hill Education (UK); 2005 Sep 1.
46. Straus L, Munguambe K, Bassat Q, Machevo S, Pell C, Roca A, et al. Inherent illnesses and attacks: an ethnographic study of interpretations of childhood Acute Respiratory Infections (ARIs) in Manhica, southern Mozambique. *BMC Public Health.* 2011 Dec;11(1):556.
47. Rhodes LA. Studying biomedicine as a cultural system. *Handbook of Medical Anthropology: Contemporary Theory and Method.* New York: Greenwood Press; 1996.
48. Fardon R, editor. *Counterworks: managing the diversity of knowledge.* New York: Routledge; 2003.
49. Fadiman A. *The spirit catches you and you fall down: a Hmong child, her American doctors, and the collision of two cultures.* New York: Macmillan; 2012.