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Navigating Sickness and Zoonotic Diseases: Managing Health and Well-being among the Nomads in Ghana

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Abstract:
Nomadic populations migrate uncontrollably across the West African sub-region. Their migratory tendencies have often marginalized them, denied them the opportunity to attain formal education, and also exposed them to diseases. This article applies the social constructionist theoretical perspective to nomads' ways of navigating difficulties in accessing health care services. Using interviews, questionnaires, focus group discussions, and observations for data collection, the paper found that nomads are exposed to both human and zoonotic diseases, have poor attitudes, and have limited access to modern health facilities. They prefer traditional treatment and self-medication. They pose a public health risk, and the state must take measures to employ mobile health services to curtail this.

Keywords: *Nomads, health, diseases, migration, lifestyle*

1. Introduction

Nomads and seminomadic populations are estimated to be 50-100 million globally, of which about 60% live in Africa [1]. Countries like Somalia have about 25.9% of their population being nomads [2]. Pastoralists engage in periodic migration with their herds to fully exploit limited resources (such as pasture and water) necessary for both their animals and themselves, which are distributed over different time periods and locations. In Ghana, the various population censuses have not been able to capture the exact numbers of nomads. Perhaps they are captured among the rural population and the migrants since they appear to be constantly changing locations. Seasonal migration appears to be a significant factor influencing the health of nomadic populations. Nevertheless, the prevalence and distribution of common diseases in these transient and dispersed communities remain poorly understood. The scarcity of demographic and medical data poses challenges in accurately delineating alterations in the health of nomadic populations. Despite these challenges, the World Health Organization [3] estimated that 600 million in Africa suffer from Neglected Tropical Diseases (NTDs), and nomadic pastoralists are among those with higher rates of morbidity and mortality [4].

The study focuses on understanding the perception of illness representations among nomads in Ghana and how they navigate through human and zoonotic diseases. Nomadic communities, such as the Fulani, live a wandering lifestyle, often moving with their livestock in search of suitable grazing lands [5]. This population faces unique challenges related to access to modern healthcare, cultural beliefs, and social networks [6,7]. Compared with no-nomadic communities in Ghana, and even access to health in city slum dwellers, access to modern healthcare facilities is relatively easier due to the expansion of health facilities in communities within 10 kilometers [8,9]. By examining their perception of illness, this research aims to shed light on the perspectives of nomads in Ghana and identify potential areas of improvement in healthcare provision.

In West Africa, nomads can traverse long distances, over thousands of miles across national boundaries. The Fulani pastoralists in Senegal, for instance, travel as far as northern Nigeria and Ghana. The nomadic pastoral tribes in northeastern Africa have traditional and tribal boundaries which cut across national boundaries. The tribes also have clan boundaries that are typically respected unless there are exceptional circumstances such as drought or civil conflict [6]. For instance, the Turkana people in Kenya usually do not trespass into the Boran or Rendille lands within Kenya, which are closer to them. However, they could cross the border to South Sudan because those lands traditionally belong to them. Though the delineation of international borders by colonial powers and the regional and district boundaries by national governments have partially impeded the mobility of nomadic populations, they still travel across traditional and national boundaries [6].

In Ghana, monads are members of a minority group who are subjected to persistent prejudice [10] and discrimination and may need the implementation of 'positive discrimination,' also known as affirmative action, to facilitate their access to health series and education. 'Positive discrimination' is permitted by human rights law in situations where a particular group has been subjected to persistent discrimination by the dominant group in a country [5]. The Ghanaian government may have to establish temporary rules that would be favorable to the nomads, and that could also be 'disproportionate' to reestablish a balance among the populace.

Despite their awkward position in Ghana as a minority group, the scholarly literature has further exacerbated this situation by over-concentrating on their conflictual relationships [11, 12, 13, and 14] to the neglect of other equally important aspects of nomads' lives. The over-concentration of scholarly work on the nomads' conflictual relationships could expose them to danger, targeting, and stereotyping [10, 15]. This paper is different because it focuses on one of the neglected areas of research -nomads' perception of illness and their health-seeking behavior in Ghana. The perception and understanding of illness representations among nomads in Ghana is a significant concern that needs to be addressed. Nomadic communities often face unique challenges in accessing healthcare services, and their understanding of illness may differ from mainstream society [6, 5]. It is crucial to investigate and understand their perceptions of illness representations to assist in developing culturally sensitive healthcare interventions and policies that cater to the specific needs of nomadic communities. By exploring this topic, we can identify potential barriers and gaps in healthcare delivery and work towards bridging these gaps to improve the health outcomes and well-being of nomads in Ghana.

This paper seeks to address the following research questions:

- How does a nomadic lifestyle present unique challenges for accessing healthcare?
- What are the impacts of cultural beliefs on the health practices and outcomes of nomadic communities?
- How do healthcare workers perceive the utilization of healthcare services by nomadic populations, and what barriers do they encounter?
- How do nomadic individuals perceive and understand illness within their own cultural and social contexts?
- How do social networks and support systems influence the health and well-being of nomadic groups?
- Finally, what are the key aspects of how nomadic communities understand and represent illness within their cultural frameworks?

The rest of the paper is presented as follows:

- The first section deals with the concept of health,
- The second section deals with health seeking in modern health facilities and the theoretical consideration,
- The third section discusses the research methodology,
- The fourth section focuses on the results and discussion,
- The final section presents the conclusions.

2. The Concept of Health

Health according to the World Health Organization (WHO), health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity [16]. It emphasizes that health encompasses more than just the absence of disease or infirmity. This definition acknowledges the holistic nature of health and recognizes that it goes beyond the absence of illness. It highlights the importance of addressing physical, mental, and social factors to achieve complete well-being.

By taking this definition into account, individuals, families, healthcare professionals and policymakers should focus on preventive measures, health promotion, and addressing the underlying determinants of health to promote overall well-being. It also emphasizes the need for a multidisciplinary approach involving healthcare providers, mental health professionals, policymakers, and communities to create conditions supporting individuals' health in all dimensions.

Different people and different cultures place different emphasis on different aspects of health and sickness. Community development is important for a number of reasons, including the fact that good health is a natural human condition, the prevalence of health problems and associated problems as topics of discussion at the national level, and so on. In traditional and backward communities, health and sickness are typically seen as intertwined problems that vary from culture to culture and from person to person. This perspective is widespread in tribal and traditional societies. According to Yadav and Sharma [17], the population's culture has a considerable influence on how individuals see their health and how they respond while seeking medical treatment in different civilizations.

The health status and health-seeking behavior of various tribal and backward groups are influenced by a variety of socio-religious beliefs and practices, utilization of the Indigenous medical system, income, communication and transportation, ecology, demography, socio-biological practices, genetic characteristics, and other factors. Some of these factors include genetic characteristics, socio-biological practices, ecology, and communication and transportation. Yadav and Sharma [17], the term "health culture" refers to the comprehensive network that is comprised of interconnected subsystems.

The health practices and behaviors observed among nomadic populations render them more vulnerable to morbidity or the occurrence of sickness. Schelling et al. [18] identified five primary factors that influence the morbidity patterns among nomadic pastoralists. These factors include the proximity to animals, a diet rich in milk, the nomads' mobility and dispersion, which pose challenges in accessing and maintaining healthcare services, the specific characteristics of the terrain (such as being hot, dry, and dusty), and socioeconomic and cultural aspects, such as the presence or absence of traditional healers.

El Sheikh [19] asserts that the health-seeking behavior of nomads is influenced by their own notions, beliefs, and attitudes toward their needs. The utilization of professional healthcare services, as well as conventional and spiritual healers, is somewhat affected by cultural traditions and belief systems. The utilization of informal health services is associated with individuals' perceptions and attitudes rather than only stemming from inadequate availability of healthcare facilities and limited information. The selection of services by individuals is influenced by tradition and social structure, with religious leaders playing a significant role in moulding individuals' thoughts and beliefs. Further

investigation and scholarly inquiry are necessary to address the dearth of data and understanding pertaining to the health-seeking behavior of nomadic populations.

From the above discussions, it is clear that findings derived from previous research conducted by Yadav and Sharma [17, 18 and 19], collectively demonstrate that the cultural customs and practices of various population groups, including nomadic communities, exert a substantial influence on their healthcare-seeking behaviors.

2.1. Health Seeking in Modern Health Facilities

More than 70% of people in underdeveloped countries still use traditional treatments, even though modern or Western medicine is believed to be the most successful at addressing health conditions [19]. This is true because a lot of people living in these areas believe that certain diseases or afflictions are caused by witchcraft or evil spirits. So, for their medical requirements, they turn on shamans and other traditional and spiritual healers. People employing self-care, home remedies, and consulting with traditional healers for their health needs and concerns are the most common cultural practices.

Despite the lack of published information on them, nomads face identical health and other difficulties that rural residents do. El Sheikh [19] claims that there are several choices available to nomads for receiving medical care, including self-medication with plants, herbalists, ambulant drug dealers, spiritual healers, and rural health clinics.

The Nomads often consult with traditional healers or buy pharmaceuticals from ambulant merchants to address their medical requirements because conventional and modern health facilities are either inaccessible to them or are not well adapted to their way of life. Nomads may not follow detailed treatment programs and may only acquire contemporary healthcare services in the last stages of their illnesses.

3. Theoretical Consideration: The Social Constructionist Theory

This theoretical framework focuses on how individuals and communities construct meanings and understandings of illness. It explores how cultural and social factors shape the perception and representation of illness among nomads in Ghana. Social Constructionist Theory is a sociological and philosophical framework that posits that societies and communities construct their social realities through shared meanings, interpretations, and interactions. It suggests that a group's perception and understanding of the world are not fixed or objective but are shaped by social and cultural contexts [20]. It argues that social practices and jointly carried out social acts give rise to all cultural and social realities, including values and meaningful behaviors [20]. Therefore, social norms produce and influence what is often seen as true and real, and so has an objective reality [21]. In this view, all knowledge, including fads and scientific knowledge, is the product of social construction processes, whether or not these processes are conscious [22].

Some writers employ the words constructivism and social constructionism interchangeably under the overarching category of constructivism [23]. The principles of constructivism and social constructionism often coexist and are commonly integrated into the overarching framework of "constructivism." Nevertheless, it is important to note that social constructionism primarily emphasizes societal aspects rather than individual ones. On the other hand, constructivism posits that individuals construct their own experiences through cognitive processes [24].

Language and discourse are essential elements in the construction and formation of our social reality. Social constructionists place significant emphasis on the role of language in shaping our cognitive processes, belief systems, and behavioral patterns. Additionally, the researchers analyze the discourses and narratives that shape our understanding of the world and the manners in which we convey information about it. Similarly, the social setting is of utmost importance. The Social Constructionist Theory recognizes that our vision and comprehension of the universe are influenced by our social surroundings, encompassing cultural norms, values, and institutions. The acknowledgment is made that diverse social collectives may possess unique viewpoints and understandings of events influenced by their cultural, historical, and societal contexts.

Social constructionists examine the impact of power dynamics and social hierarchies on the formation of meaning. This study examines the manner in which dominant groups exert influence over disadvantaged or minority groups, hence maintaining social inequities and altering the perception of sickness or other occurrences.

Reflexivity is a concept that pertains to the examination and critical analysis of one's Reflexivity and is a fundamental component within the framework of Social Constructionist Theory, emphasizing the need for people and groups to engage in critical introspection to evaluate their views and assumptions regarding the nature of reality. By recognizing the inherent constructedness of knowledge and comprehension, individuals possess the capacity to question dominant discourses and actively pursue alternative viewpoints.

In the specific research domain of investigating the perception of illness representations among nomadic populations in Ghana, the application of the Social Constructionist Theory entails a comprehensive analysis of how nomads in Ghana engage in a collective process of constructing their comprehension and depictions of illness. This construction is shaped by their cultural norms, beliefs, and interactions with both their social networks and healthcare providers. Additionally, this inquiry would entail an examination of the power relations and societal disparities that may potentially impact these depictions.

4. Research Methodology

4.1. Study Setting

The study was conducted in three regions in Ghana: Bono East, Savannah, and Northern regions. Kintampo North Municipal is one of the districts in the Bono East Region of Ghana. In the Bono region, the study was conducted in the Kintampo North Municipal. It is situated in the northern part of the region and covers an area of about 1,944 square kilometers [25]. The municipality is known for its rich cultural heritage, natural attractions, and agricultural activities. Agriculture is the main economic activity in Kintampo North Municipal. The fertile soil and favorable climate make it suitable for cultivation. The area is known for the production of food crops such as maize, yam, cassava, mangoes, plantain, millet, sorghum, and vegetables. Livestock rearing, particularly poultry farming, and livestock farming, particularly cattle rearing, are also prominent in the district. Additionally, there is a growing tourism industry due to attractions such as the Kintampo Waterfalls and the Boabeng-Fiema Monkey Sanctuary and a growing presence of small-scale industries, trading, and services, which contribute to the local economy.

The Central Gonja District, on the other hand, is located in the Savannah Region of Ghana. It covers an area of approximately 3,080 square kilometers and has a population of over 200,000 people [26]. The district is named after the Gonja people, who are the predominant ethnic group in the area.

Economically, Central Gonja District is primarily agricultural, with farming being the main occupation of the residents. The district is known for the cultivation of crops such as maize, yam, millet, groundnuts, and rice. Fishing is also a significant economic activity due to the presence of the Black and White Volta and their tributaries.

According to the Ghana Statistical Service [27], the Tamale Metropolitan Assembly has a population of 371,351, making it the most populated district in the area. This number represents 15% of the total population of the region. The fact that Tamale is both the regional capital and the most centrally placed city in the area may be the cause of this very high concentration. People from different regions of the region are moving to the city because of its commercial activity, employment possibilities, and educational institutions.

4.2. Study Population

This study focuses on nomadic individuals who engage in migratory or temporary settlement patterns and are responsible for the maintenance of livestock, regardless of their tribe membership or place of origin. In addition, a comprehensive interview was conducted with healthcare experts who provide medical services to nomads in the regions of Yapei, Buipe, Kintampo, Sang, Salankpang, Yong, and Lamashegu. The individuals residing in the study regions primarily consist of livestock herders who lead a nomadic lifestyle. The individuals in question relocate alongside the livestock to other locations as long as there is enough supply of grazing land. Nomadic populations predominantly inhabit the vicinity of prominent river banks during periods of aridity, mostly because of the anticipated presence of ample grazing land in those areas. A portion of these itinerant individuals, predominantly of the Fulani ethnic group, have embarked on extensive journeys originating from distant locations such as Mali, Burkina Faso, Nigeria, and Niger. According to anecdotal evidence, the nomadic population in the research regions is predominantly concentrated in rural districts or peri-urban areas.

4.3. Study Design

The present study aims to outline the design that will be employed to investigate the research question at hand. The present study largely constitutes an ethnographic inquiry that utilized textual analysis and qualitative data collection methods. Additionally, quantitative data was also analyzed using descriptive statistics. The inquiry employed a mixed-method study design. This study conducts a comprehensive analysis of the illness perceptions held by nomadic populations and the factors that influence their decision-making while seeking healthcare services. The depiction of sickness by a collective, such as the nomadic community, has a pivotal role in the identification of illnesses and, more significantly, in the management of contagious diseases, overall death rates, and specific and general mortalities. The qualitative research design facilitated a comprehensive exploration of participants' perspectives about the topic under investigation, encompassing their viewpoints on historical, current, and prospective occurrences. These opinions were afterward collected and subjected to further scrutiny by the researcher for analysis. Based on the preceding discussion, it is indisputable that qualitative research is the optimal methodology for assessing factors associated with perception, perspectives, and opinions since culture exhibits a strong correlation with these indicators. This approach entails the collection of data from individuals using methods such as observation, in-depth interviews, and subsequent analysis.

4.4. Sampling Technique

The three districts (Kintampo North, Central Gonja, and Mion districts) were purposively selected because of the large numbers of the nomadic population. Tamale Metropolis was added because it houses most of the health facilities and referral centres for the entire northern Ghana and parts of Bono and Oti regions. It also has large numbers of Fulani population. The study covers 1,063 nomadic respondents from four districts and 12 communities (see Table 1).

Region, District & Community	Category of Respondents		
Savannah Region: Central Gonja District	**Male**	**Female**	**Total**
Yapei	45	68	113
Fufulso	37	64	101
Buipe	62	51	113
sub-total	*144*	*183*	*327*
Bono East Region: Kintampo North Municipal	**Male**	**Female**	**Total**
Gulumpei	28	40	68
Kawampei	52	53	105
Fulanikrom	77	89	166
Sub-total	*157*	*182*	*339*
Northern Region: Mion District	**Male**	**Female**	**Total**
Sang	32	40	72
Kpabya	41	50	91
Salankpang	30	42	72
sub-total	*103*	*132*	*235*
Northern Region: Tamale Metro	**Male**	**Female**	**Total**
Yong	30	33	63
Bamvim	15	41	56
Lamashegu	23	20	43
sub-total	*68*	*94*	*162*
Grand Total	472	591	1,063

Table 1: Distribution of Selected Regions, Districts, and Communities

4.5. Data Collection Procedure

Data collection for this study started in January 2021 when we recruited and trained 12 enumerators, out of which four were of Fulani origin and spoke *Fulfulde* fluently. We constituted four teams, and each team had a Fulfulde speaker. Each team was in charge of a district, and they used 21 days simultaneously, doing interviews and focus group discussions. It was necessary to spend longer time in the field because gathering data from mobile nomads, in particular, was relatively a challenge, as they were not readily available. Most of the nomads retire home with their cattle late in the evening and go back early in the morning to graze their cattle.

4.6. Data Collection Techniques

Apart from the desktop review of documents, the study adopted three prong data collection methods: Interviews, Focus Group Discussions and observation:

4.6.1. Interviews

Data was collected during face-to-face interview sessions with the nomads at their convenience. We used a semi-structured interview guide with open-ended questions to conduct the interviews. The interview data collection method was adopted because it gave the respondents an impetus to give detailed explanations of the factors that influence the decisions they make during ill health and further exacerbated their health-seeking behaviour. The interview method has also proven to be an important component when it comes to delving into virgin areas of research where little knowledge is available. Interviews were also conducted with traditional healers, pharmacies, licensed chemical store dealers, nurses, and doctors in these communities. Interviews were conducted in the languages most understood by the interviewee. Most of the interviews were conducted in Dagbani, Hausa, Gonja, Mole, Twi, Fulfulde, and in English, depending on which one was most convenient for the interviewee.

- Focus Group Discussions (FGDs): Twenty-four FGDs were conducted in all, two in each community, one each for females and males. Each group consisted of five to ten persons.

4.6.2. Observation

Also, the interviewers made observations to give credence to what the respondents said. This necessitated the adoption of a checklist that sought to assess the quality of care in line with healthcare professionals and the nomads. This made the use of observation a cardinal point in the data collection so that it served as a base for confirming stated information by respondents. The interviewers observed the housing condition of nomads in relation to their contact with the cattle and measured for possible infection control.

4.7. Nomadic Lifestyle and Healthcare Challenges

This section provides insights into the nomadic lifestyle led by Fulani communities. It explores their nomadic practices, including the constant movement, traditional livelihoods, and reliance on communal networks. Additionally, it discusses the challenges nomads face in accessing healthcare services due to their transient nature, remote locations, and language barriers.

The nomadic people engage in constant movement and transhumance, sometimes across borders [6]. Nomads in Ghana, including the Fulani communities, lead a nomadic lifestyle characterized by constant movement with their livestock in search of suitable grazing land, often following seasonal patterns. This mobility poses a significant challenge for accessing healthcare services since healthcare facilities are typically located in settled areas. The research found that nearly 95% (94.6%) said they had never gone for a medical check. They only go to the hospital when the situation is critical.

Nomadic communities often reside in remote and rural areas, far from mainstream healthcare facilities. The lack of nearby medical centers and clinics makes it difficult for them to seek timely medical attention, especially in emergencies or for chronic conditions requiring regular care. With the exception of Fulanikrom in the Kintampo North Municipal, there are at least CHIPS Compounds/ small health facilities in all the communities. Despite this, 78% of the respondents indicated that they do not go to the hospital.

The study found that language is still a barrier for the Fulani people. The study found that though 75% of the nomads could understand the local Ghanaian languages, only 35% of them were fluent in these languages, and as low as 7% could speak the English language. Language barriers appear to present another obstacle to healthcare access for nomads. Many healthcare providers in Ghana primarily speak English, whereas nomadic communities typically communicate in their local languages or some Ghanaian dialects. This linguistic disconnect perhaps leads to miscommunication, misunderstandings, and difficulties in accessing appropriate health services.

Formal education is not patronized by the nomads for obvious reasons (constant movements), and this leaves them with limited awareness and uneducated. Nomadic populations, especially those living in remote areas, often have limited access to education and formal healthcare awareness programs. Though there are many radio stations that now present their programmes, including health education in the local dialects, only 28% of them indicated that they have access to televisions and radio sets. Out of this figure, only 13.5% said they listen to the news. The rest often listen to music and entertainment. This lack of information and awareness further widens their access to healthcare practices and preventive measures, and the importance of seeking medical help can contribute to delayed or inadequate healthcare-seeking behavior.

The study found that cultural stigma and beliefs constitute a serious challenge to the nomads in their integration and adaptation [13]. Over 45% of the nomads are skeptical about modern hospital treatment. They often have deeply embedded cultural beliefs surrounding illness and healthcare. The study found that 82% of them rely heavily on traditional healers, herbal remedies, or spiritual practices for health issues. This cultural stigma perhaps could deter them from seeking conventional medical care, particularly for diseases that carry cultural connotations or require specialized treatment.

Socioeconomic factors, such as poverty and limited resources, are also found to hinder nomads' access to healthcare. The research found that 93% of the nomadic herders are hired by wealthy people to take care of their animals. This put them in a difficult financial situation as they cannot sell the animals to meet their health need when the need arises. The hired herdsmen are entitled to the milk from the cattle [28], but this is sufficient for their daily consumption. Financial constraints (76%), lack of transportation (54%), and inadequate health insurance coverage (28%) further exacerbate the challenges faced by the nomadic communities in seeking and affording necessary medical care.

Addressing these healthcare challenges requires a comprehensive approach that takes into account their unique needs and circumstances. It involves improving access to healthcare facilities in remote areas, increasing the cultural competence of healthcare providers, developing mobile healthcare units or outreach programs, providing language interpretation services, and promoting health education and awareness programs tailored to nomadic populations.

Understanding the nomadic lifestyle and the specific barriers they face in accessing healthcare is crucial for developing interventions and policies that can improve healthcare provision and ultimately enhance the well-being of nomads in Ghana.

4.8. Cultural Beliefs and Health

Traditional beliefs and cultural practices significantly influence the perception of illness within nomadic communities in Ghana. This section delves into various cultural beliefs related to health and their impact on disease perception, symptom interpretation, and help-seeking behaviors. It also explores the role of traditional healers, herbal medicine, and spiritual practices in addressing health issues. Cultural beliefs significantly impact the health of pastoral nomads in several ways [6]. Here are some ways in which cultural beliefs affect the health of pastoral nomads:

Illness Perception and Interpretation are shaped by their culture. As part of their socialization processes, the Fulani thought their young ones to be brave and strong. They openly praise the brave ones and rebuke cowardice. They possess attributes of bravery, a propensity for warfare, and remarkable resilience. However, these characteristics are sometimes obscured by their gaunt countenance and prominent cheekbones [29]. In contemporary times, with the decline of tribal fighting, the Borori community demonstrates acts of courage via their participation in the traditional practice known as "Sharo," which involves a whipping contest. This event takes place during the Lesser and Greater Beiram festivals when men from two opposing clans alternate in administering floggings against one other. The individual subjected to flogging assumes an upright posture, raising his hands, while his adversary delivers forceful strokes. The individual who has been subjected to flogging assumes his opportunity to retaliate within the same or subsequent encounter. The female individuals remain positioned while engaging in vocalization and expressing enthusiastic support for their romantic partners [29].

These values are cascaded into their minds and are often exhibited even in sickness. Cultural beliefs shape how pastoral nomads perceive and interpret illness. Traditional beliefs may attribute illnesses to supernatural causes, such as spirits or curses, rather than biological factors. This can influence how nomads understand and respond to symptoms, potentially delaying or altering their healthcare-seeking behavior.

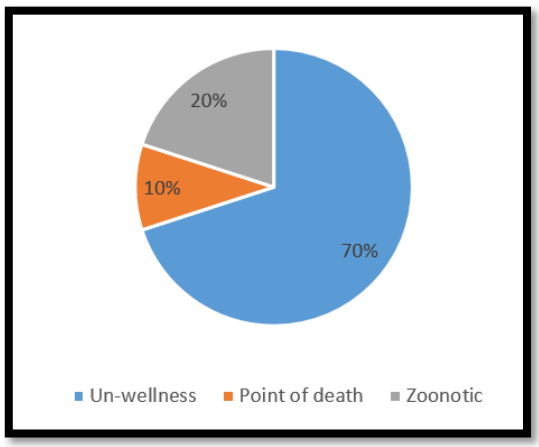

Figure 1: Sicknesses Are Diagnosed

From figure 1, the majority of the respondents (70%) indicated that their perception of illness was a person being unwell, while 20% said that their perception of illness was the transmission of illness from animals to a person. Some of the nomads' perceptions of illness were further illustrated as follows:

In the study setting, it was revealed that certain illnesses were perceived by respondents as not suitable for modern healthcare treatment. One respondent puts it this way:

Yes, you cannot start to run to the hospital with every illness; then, the hospital will have been choked. We go then, but only when the disease is so serious that we can no longer offer treatment." (A male respondent)

Traditional Healing Practices: Cultural beliefs often influence pastoral nomads' preference for traditional healing practices. Nomads rely on traditional healers, who use herbs, rituals, and spiritual practices to treat illnesses. While these practices can have cultural significance and may provide some relief, they may not always address the underlying medical causes of illnesses and can lead to delays in appropriate medical care.

The traditional herbalist or spiritualist remains the primary source of nomadic choice in seeking herbal treatment when taken ill, and the former still takes charge of chronic conditions as they have failed to respond to orthodox treatment, and one is made to believe that the illness that has afflicted him or her is of spiritual cause; hence, the treatment follows the same. One respondent indicated:

"Why would you be wasting money at the hospital seeking treatment for a disease condition that has persisted for years without a cure at the initial stages, such as epilepsy? It means it is not hospital sickness. The best treatment is a spiritual intervention." (A male respondent)

Clearly, this statement appears to advocate for seeking alternative, spiritual interventions instead of relying on medical treatments in cases where the disease condition has persisted without a cure or improvement. It suggests a belief that the root cause of the condition may be beyond the scope of medical understanding and requires a spiritual approach for effective treatment.

It is crucial to note that while spiritual beliefs and alternative healing practices are important to some nomads, it is always advisable to consult with healthcare professionals and follow evidence-based medical treatments for any health condition. Medical science has made significant advancements in understanding and treating epilepsy and other chronic conditions. Seeking professional medical advice and considering a holistic approach that combines medical treatments with spiritual beliefs can offer the best path to managing or improving the condition effectively.

Another respondent remarked:

"We only seek medical care when we are not able to do anything about the illness any longer, and w*hen the illness is such that it prevents us from going to work or doing our normal household chores, then we diagnose it as sickness." (A female respondent)*

Apparently, the statement indicates a perspective on seeking medical care that prioritizes self-management and recognizes the need for medical attention when the illness becomes unmanageable and significantly interferes with work and daily activities. It suggests a personalized definition of sickness based on functional impairment.

However, it is important to note that this approach may not always align with best medical practices, as early intervention and preventive care are essential to maintaining health and well-being. It is generally recommended to seek medical care earlier rather than waiting for symptoms to become severe or debilitating. Regular check-ups, preventive measures, and prompt medical attention can help prevent the progression of illnesses and improve overall health outcomes.

It was further perceived by the nomads that a snake bite was considered a spiritual attack; hence, there was no need to seek treatment that would completely take care of the teeth, which is the venom, at the hospital. This could not have been well explained until a respondent from a peri-urban community added:

"Let me tell you, whoever tells you that we nomads do not use local treatment to remove the teeth of a snake bite, even after hospital treatment, will be telling you lies. This reason makes it right to seek traditional herbal treatment instead of going to the hospital for incomplete treatment." (A male respondent)

Stigma and Shame: Cultural beliefs surrounding mental illnesses and epilepsy have stigma and shame connotations among pastoral nomads. This creates barriers to seeking help or openly discussing health issues. The nomads associate curses with these illnesses and fear of being tagged or judged by the community as cursed, and that prevents individuals from accessing necessary healthcare services, leading to worsening health outcomes. The study further found that Fulani women seriously abhor exposing their nakedness to people other than their husbands. The research found that an overwhelming majority (96%) of the respondents claim that exposing their nakedness to others is against the tenants of "*pulaaku*[1]" and as such, most Fulani pregnant women do not attend antenatal clinics (ANC) and prefer to deliver at home for fear of exposing their nakedness to midwives and gynaecologists.

Pastoral nomads often rely on friends, relatives, and social networks for guidance and support when it comes to health and illness. These networks provide valuable advice and home remedies but can also perpetuate misinformation or misconceptions about certain health conditions. It is important to understand the dynamics of these social networks and ensure that accurate health information reaches nomadic communities.

4.9. Accessibility of Healthcare Services: Healthcare Workers' Perceptions about Nomads' Healthcare Utilization

Cultural beliefs may influence the perception of healthcare services among pastoral nomads. They have reservations or concerns about Western medicine, perceiving it as foreign or incompatible with their cultural beliefs.

"These people seem to believe in their husbands; the women usually do not allow their nakedness unless they seek permission from their husbands. You cannot examine a Fulani married woman's genitals unless the woman is permitted by the husband." (A female health worker)

"I have had a great challenge dealing with a married Fulani woman in labor, where a male doctor has to intervene in the process. Imagine labor pains, yet I have to send for the husband on the account of seeking permission before this woman will open up for delivery. My sister, why would a woman risk her life for her values and beliefs? It is a problem." (A female health worker)

"I did not have a problem giving birth at the health facility as a Fulani woman in the hands of a male health practitioner and a midwife. I would like to go there this time too." (A female respondent)

The healthcare workers had different views of their attitudes, which affected the nomads' choice of healthcare location. One healthcare provider explained:

"We are professionals, trained, and received certification. We are regulated by our various professional bodies and are required to provide services professionally to all sorts of people, irrespective of their nationality, colour, creed, or social standing. I do not think that the nomads are discriminated against in any way." (A female healthcare provider)

Interviews with the health care professionals who were sampled as respondents revealed responses as illustrated below:

"As for this place, the nomads come to the health facility only when health complications have already set in. The delay in seeking healthcare services by these nomads generally impeded the quality of services that were expected to be rendered to them when they came to the health facility." (A female health care worker)

Clearly, the statement highlights the concern that nomads tend to postpone seeking healthcare until complications arise. This delay not only adversely affects the individuals' health outcomes but also puts a strain on the healthcare system's ability to provide timely and effective care. Encouraging early healthcare seeking among nomads and addressing any barriers they may face, such as access to healthcare facilities or cultural beliefs, can help improve their health outcomes and the quality of care that is received.

"As for the nomads, they will come to the health facility to seek health care services only when other means have failed them. They usually come to the hospital very late. They seek health care services somewhere and come to this health care facility only when situations are almost out of hand." (A female health care worker)

Obviously, the statement highlights a pattern where nomads delay seeking healthcare services until other means have failed and their conditions have worsened. This delay can lead to critical situations and impact the effectiveness of care provided at the health facility.

To address this issue, it is important to understand and address the barriers nomads face in accessing healthcare, such as geographical challenges, cultural beliefs, or limited availability of healthcare services. Additionally, implementing initiatives to increase awareness about the importance of early healthcare seeking and expanding access to healthcare services in nomadic areas can help improve their health outcomes and prevent situations from becoming critical.

It is worth noting that this analysis is based on the statement provided, and healthcare-seeking behaviors can vary among nomadic communities based on their specific cultural and contextual factors. Therefore, a comprehensive understanding of the specific community's needs and challenges is essential for effective healthcare delivery.

This can create a reluctance to engage with healthcare facilities, leading to a lack of access to essential medical care and preventive services. To address the impact of cultural beliefs on the health of pastoral nomads, it is essential to

[1] The term "pulaaku" is used to describe certain cultural and ethnic traits of the Fulani people that differentiate them from other ethnic groups (Schareika, 2010). It is also the virtues seen as a prerequisite to behaving as a Fulani are self-control (*manual*), foresight (*Hokkaido*), bravery (*causal*), and reserve (*sentence*) (See also Stenning 1959:55. 3).

implement culturally sensitive healthcare interventions. This may include incorporating traditional healers into the healthcare system to promote collaborative care, training healthcare professionals to understand and respect nomadic cultural beliefs, and developing community outreach programs that incorporate cultural norms and practices. By acknowledging and respecting cultural beliefs, healthcare providers can work towards improved health outcomes for pastoral nomads while preserving their cultural heritage.

4.10. Perception of Illness Representation among the Nomads

The conceptualization of illness among nomadic populations may diverge from the conventional notion of illness held by healthcare providers in clinical settings. The nomads' views of disease encompass a spectrum that spans from a general sense of malaise to a complete inability to independently perform typical daily activities. The Fulani people held diverse perspectives about the conceptualization of illness. The comprehensive manifestation of illness includes symptoms such as malaise, elevated body temperature, and sensations of discomfort.

In many Fulani communities, the presence of any previously absent negative emotions that last for over a month is considered indicative of disease. This finding elucidates that a significant proportion of the nomadic population (70%) conceptualized sickness as the subjective experience of an individual feeling poorly. This conclusion aligns with the research conducted by [19], in which participants in a study described the disease as the sensation of being in a state of poor health.

Consequently, it may be inferred that the incapacity of an individual to do their routine tasks has to be recognized as a state of poor health and addressed accordingly. The nomads' health-seeking behavior during the investigation was impacted by this particular viewpoint. Fulani individuals tend to seek medical assistance when their ailment reaches a level of significant discomfort or when the condition hinders their ability to engage in occupational or everyday activities.
The findings also indicated that the nomadic population had the perception that not all illnesses necessitated seeking medical assistance at a health center. This argument can be connected to the African sociocultural framework of sickness, where supernatural influences are also considered influential in the overall health and wellness of individuals. This statement was supported by a participant in the following manner:

> *"It is not feasible to immediately seek medical attention for every illness, as this would overwhelm healthcare facilities. Instead, we only visit hospitals when the illness reaches a critical stage where treatment is necessary."*

The participant was of the masculine gender. This conclusion is consistent with the research conducted by [19], which demonstrated the significant influence of cultural values on individuals' health-seeking behavior. It is clear that each individual has a yearning for both personal well-being and the betterment of society. Altruism may be seen in the context of cultural practices since these practices have a significant role in shaping the overall well-being, physical capabilities, and behavioral patterns of individuals within both emerging and established countries. Certain cultural traditions, which have withstood the test of time, are beneficial for the individuals involved.

When discussing the relationship between cultural traditions and health, it is fairly unusual for individuals to associate negative or inappropriate connotations. Notwithstanding the presence of cultural or traditional practices that may be seen as unfavorable, it is important to acknowledge that certain behaviors have endured over time and embody beneficial values, while others remain ambiguous and potentially detrimental. Understanding the cultural practices of certain societies is vital since these activities serve specific goals for the individuals who uphold and transmit their cultural heritage.

The findings also indicated that nomadic individuals held the belief that animals possess the ability to transmit diseases to humans. This viewpoint was expressed by one participant who stated,"...the animals carry certain diseases that can impact us, humans, when we interact with them." Certain symptoms of illness in animals include coughing and nasal discharge. In contrast, individuals from rural communities have the belief that consuming milk with an unpleasant taste may have negative effects. The participant in question is of the masculine gender.

Interestingly, nomadic communities have implemented proactive procedures to sanitize raw milk before consumption despite the presence of flies and animal excrement at the milk extraction site.

The present study aligns with the research conducted by [30], which suggests that nomadic populations have an awareness of their vulnerability to certain health issues and are motivated to adopt preventive measures in order to mitigate the development of diseases. This elucidates the awareness of nomadic populations on their vulnerability to diseases. It is widely recognized that the nomadic lifestyle has a significant impact on the overall health and overall well-being of individuals.

The use of these preventive measures aligns with the assertions made by [31] on preventive health behavior. They define preventive health behavior as any action taken by an individual who perceives themselves to be in good health to be able to prevent or identify illnesses in a state when symptoms are not yet present.

The findings indicate that nomads' health-seeking behavior is impacted by certain cultural beliefs and perceptions around sickness. As elucidated by the participant, one may question the rationale of using financial resources on hospital visits for a chronic ailment like epilepsy that has remained unremedied from its early stages. This implies that the illness in question may not be attributable to a medical cause. Spiritual intervention is considered to be the most effective kind of treatment. The participant in question is male. This conclusion is consistent with the research conducted by [32]. The selection of services to be utilized is influenced by both tradition and the societal framework. In this context, religious leaders exert a notable influence in shaping individuals' understandings and convictions towards disease.

4.11. Social Networks and Support Systems

Social Networks and support systems are powerful means of influencing the nomads' perception and illness representation. Social networks here refer to family members, friends, community members, school/classmates, coworkers, and other groups that one belongs to and where he/she regularly interacts with, either face-to-face or including platforms or online communities where her/she can connect and interact with one another. These platforms enable people to share information, communicate, and build relationships through various means, such as messaging, posting content, joining groups, and more. They may also provide support systems or structures that provide assistance, guidance, and help to individuals in need. These systems can be formal, like support helplines or counseling services, or informal, such as friends, family, or online communities.

However, the research found that the nomads have poor and weak social networks and support systems that they can rely on for information, resources, and healthcare assistance. This section explores the dynamics of social networks within nomadic communities and their impact on illness perceptions and healthcare-seeking behavior. It examines the roles of family, community leaders, and non-governmental organizations (NGOs) in supporting the nomadic population during times of illness.

One potential challenge faced by the nomads is the absence or limited access to established social networks or support systems in their localities. Over 95% of them said they do not have schoolmates or classmates. Similarly, all the nomads said they do not have relatives who work in the formal sector. The study observed that the nomads have very limited social networks beyond their families and external relations. They, however, have a strong relationship with the cattle owners and those who hired them to do the heading. They also have sporadic relationships with cattle dealers who buy cattle from them. Though this could be termed business relations, they benefit from these relationships by getting information, support, and resources.

The study observed that due to their constant movement and changing locations, nomads are unable to establish strong friendships and relationships with the communities they live. The study also found that nearly a quarter of the respondents (24.6%) indicated that the nature of their profession makes them experience social isolation and sometimes emotional solitude, as they encounter limited availability of the support networks they might have enjoyed if they were sedentary.

Another obstacle encountered by the nomads is the restricted availability of resources, including but not limited to healthcare, education, and career prospects. In most of the FGDs, the nomads frequently mentioned that those who lack sufficient support networks have difficulties in effectively navigating and accessing the necessary services within these systems. They further indicated that their continuous mobility presents challenges in the establishment of enduring social networks and support structures.

4.12. Nomads' Construction of Illness Representation

The construction of sickness among nomads exhibits significant variation, which, therefore, impacts their behavior in seeking healthcare services. This observation suggests that nomads' choice of seeking healthcare is influenced by their prior experiences and ideas on the causes of illness. The following illustrations depict the nomadic community's explanations of disease:

"When someone feels unwell, it often refers to experiencing a sense of discomfort or bodily aches that may necessitate seeking medication to recover." (A female participant)

Clearly, the statement suggests that feeling unwell often involves experiencing discomfort or bodily aches, which may motivate individuals to seek medication as a means to recover. However, it is important to note that this statement is a generalization because individuals feeling unwell and seeking medication can vary depending on the specific circumstances and underlying causes.

"Despite being aware of the potential risk of contracting animal-related illnesses when near sick animals, I choose to reside closer to them in order to ensure their safety from theft, particularly during nighttime hours." (A female respondent)

Generally, the statement suggests that despite the knowledge of the potential risk of contracting animal-related illnesses, the nomads choose to maintain close proximity to the animals in order to ensure their safety from theft, particularly during nighttime. This decision reflects their awareness of the risks associated with close contact with the animals.

It is important to note that maintaining close proximity to sick animals carries inherent health risks, and precautions such as proper hygiene, vaccination, and wearing protective gear should be taken to minimize the likelihood of acquiring animal-related illnesses. Additionally, consulting with healthcare professionals and following appropriate guidelines can contribute to safeguarding one's health in such situations.

"Yes, we have the capability to discern sick animals based on their lack of engagement with other animals and their overall lethargy. Consequently, we take precautionary measures to ensure that our children do not come into contact with such animals..." (Another participant)

Clearly, the statement suggests that the speaker can identify sick animals based on behavioural cues and takes precautionary measures to prevent their children from interacting with them. This demonstrates a responsible approach to animal health and safety, particularly when it comes to potential risks to human health.

It is worth noting that accurately discerning sick animals based solely on lack of engagement and lethargy may not always be reliable, as there can be various reasons for these behaviors unrelated to illness. In situations where health risks

are involved, consulting with veterinary professionals or animal health experts can provide more comprehensive guidance on identifying and managing sick animals effectively.

During the FGDs, participants were unanimous that when an individual experiences illness, they may perceive symptoms such as fever and bodily discomfort. However, if these symptoms persist for a duration beyond one month following medical intervention, it is postulated that the individual may have incurred displeasure from spiritual entities, necessitating the pursuit of spiritual assistance. One of the male responders indicated that there is a possibility of contracting illnesses from animals when humans come into contact with them. He further said that certain symptoms observed in ill animals include coughing and nasal discharge. The nomads believe that consuming milk with an unpleasant taste might have negative effects.

5. Conclusion

The social construct theory was used to guide the analyses. It is found that, due to their transitory lifestyle, isolated locations, and language obstacles, Fulani populations in Ghana have trouble getting healthcare. Ninety percent of nomads have never been to the doctor, and many live in isolated places distant from conventional healthcare. Language limitations include a lack of formal education and Television/radio access hinders their awareness and prevention.

Cultural attitudes and stigma can hinder nomad assimilation and adaption. More than 45% of nomads distrust contemporary medical care and 82% use traditional healers, herbal medicines, or spiritual practices for health difficulties. Cultural beliefs affect pastoral nomad healthcare practitioners' perspectives. Western medicine is frequently unsettling to nomads since it contradicts their culture. Healthcare personnel have varied opinions about nomad healthcare, which affects their decision. Economic reasons like poverty and limited finances make it harder for nomads to get medical treatment.

To address these healthcare concerns, a comprehensive strategy that considers their particular requirements and circumstances is needed. This includes increasing remote healthcare facility access, healthcare provider cultural competence, mobile healthcare units or outreach programmes, language interpretation services, and nomadic health education and awareness programmes.

Healthcare experts said that nomads typically wait until issues arise to seek treatment, which affects their health and the healthcare system's capacity to deliver timely and effective care. Early healthcare seeking and addressing obstacles, including geography, culture, and service availability, may enhance health outcomes and treatment quality.

Nomadic communities' requirements and problems must be understood to provide good healthcare. Culturally sensitive healthcare interventions should include traditional healers, training healthcare professionals to understand and respect nomadic cultural beliefs, and community outreach programmes that incorporate cultural norms and practices to combat the health effects of cultural beliefs on pastoral nomads. By honouring cultural beliefs, healthcare professionals may enhance pastoral nomad health and preserve their culture.

Healthcare practitioners and nomadic people see sickness differently. Seventy percent of Fulanis consider disease a subjective sensation. This affects their health-seeking behavior, as individuals seek medical help when their illness becomes uncomfortable or impairs everyday life.

As people want to improve themselves and society, cultural values affect their health-seeking behaviour. Culture affects people's well-being, physical ability, and behavior. Therefore, altruism may be understood in that framework.

According to nomads, animals may spread illnesses to people via coughing and nasal discharge. Nomadic communities sanitize raw milk before eating, supporting this idea. Support systems and social networks shape nomads' sickness perceptions. These official or informal networks provide information, resources, and healthcare information. Nomads frequently lack social networks and support structures, limiting their social ties. They also have limited access to regular schools, peers, and family, according to the research. They have great connections with cattle owners and traders but fail to make friends in their towns owing to continual moving. Their job also isolates them emotionally and socially.

Healthcare, education, and employment options are similarly limited for nomads. Due to their earlier experiences and beliefs about disease, nomads build sickness differently. Some nomads reside near ill animals to avoid theft despite the hazards. Additionally, nomads may experience heat and pain, which may signify spiritual discontent and need spiritual aid. Nomads worry that drinking bad-tasting milk may harm them.

In conclusion, understanding and regulating sickness perceptions and healthcare-seeking behaviour requires understanding nomadic social networks and the responsibilities of family, community leaders, and NGOs in assisting the nomadic population during illness. Understanding Ghanaian nomads' lifestyle and healthcare access hurdles is essential to establishing treatments and policies that promote healthcare and well-being.

6. Author's Contributions

Abdulai A. conceived and designed the research and the synthesis. He engaged Research Assistants to administer and conduct the interviews. Abdulai performed the in vivo experiments and analyzed the data. He read and approved the final manuscript.

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- Ethical Approval: All human and animal experiments were approved by the University for Development Institutional Review Board (UDSIRB) responsible for Ethical approvals. The author(s) have collected and preserved written ethical approval in accordance with international or university standards.

8. Availability of Data and Materials

The datasets used and analyzed during the current study are available from the corresponding author upon reasonable request.

9. Declarations

9.1. Ethics Approval and Consent to Participate

The University for Development Institutional Review Board (UDSIRB) provided the Ethical approval. However, informed consent to participate was obtained from all of the participants in the study.

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