



PREVALENCE OF DISEASES AMONG THE PASTORALISTS OF WESTERN HIMALAYAS (INDIA)

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ABSTRACT

The health status of livelihood assets is an important aspect for pastoralists' sustainable and viable livelihood. Pastoralists throughout the world are facing a socio-ecological dynamic in their habitat which makes the pastoralists vulnerable to several diseases. Socio-ecological dynamics took place in the Western Himalayas which gives birth to the environment of disease; this study thus tries to investigate the diseases among the Western Himalayan pastoralists. For this, a case study of Bakarwal pastoralists of Western Himalaya has been taken to investigate the occupational health among the Western Himalaya pastoralists. The study used verbal autopsy whereas 239 households were interviewed. The findings of the study stated that Bakarwal livestock and labourer are frequently affected due to diseases, they possess ethnobotanical knowledge also used magic and religious practices to cope with the diseases.

KEYWORDS: Bakarwal, Diseases, Health, Occupation, Pastoralist

INTRODUCTION

Globally pastoralism is an occupation for nearly 20 million households; it produces ten per cent of the meat and covers about 25 per cent of the world land area (FAO 2001). It is one of the most viable economic systems in the areas where cultivation is not possible. Pastoralism provides employment, income, and controlling the national territory, except this pastoralism has some direct and indirect benefits such as the sale of milk, fur, meat, hides and some of the unmeasured economic benefits like manures, transport, employment, and environment services (Davies and Hatfield 2007). From the last few decades, the environment is continually changing due to natural and anthropogenic factors; these changes produce many diseases and mostly affect the health of marginal people such as pastoral nomads that depend upon traditional economic activities, live in a marginal environment and have poor access to health services (UNESCO, MAB 1990 and IPCC 2014).

The Western Himalayas are inhabited by many pastoralist communities such as Dudhia Gujjar, Bakarwals, Changpas, Van Gujjar and Gaddi. Pastoralists of western Himalayas faced many challenges on their livelihood such as cold weather stress, issue of heavy rainfall, militancy, army confrontation, venomous bites and stings, wild animal attack, droughts and water scarcity. Many scholars have already discussed various issues of Western Himalayan pastoralists such as Rao and Casimir (1982), Khatana (1984), Dev, Singh and

Misri (2003), Shashi (2006), Koundal (2011), Bhasin (1993), Bhasin (2011), Rafiq (2013), Bhatnagar et al. (2006), Jaweed et al. (2014), Aryal, Cockfield, and Maraseni (2014). The study on diseases among the pastoralists in the western Himalayas is somewhere less focused. Thus the main objective of this research article is to study the diseases which are common among the pastoralists and how much loss these diseases brought on pastoralists livelihood in terms of mortality rate and affected rate. Diseases are the chief challenges on the livelihood of pastoralists, the whole economy of pastoralists depend upon the livestock and family member, each member of a family play an important role in this livelihood. The deprivation of health of any family member leads to poor care and surveillance of herd from diseases, wild animal attack and theft which lead to the deterioration of livelihood and sometimes livelihood collapse whereas the poor health and morbidity of livestock lead to monetary loss and livelihood collapse. Knowledge of the prevalence of the disease is important so that through interventions the livelihood collapse and failure due to disease effect could be controlled and prosperity of pastoralists could continue. Therefore this study tries to investigate the health status of pastoralists in the western Himalayan region of India, in this study a Bakarwal community has been taken as a case. Bakarwal is a nomadic pastoralist community inhabited in the Western Himalaya in the administrative state of Jammu and Kashmir of India, (Dewan 1999) and also found in Northern Pakistan in



Swat and Kunhar valley (Ehlers and Kreutzmann 2000).

METHODOLOGY

The study used mixed methods to get the information where with the help of veterinary experts from the sheep husbandry department and the assistance of experienced pastoralists were interviewed. A cross-sectional survey was conducted in the pastoralists habitat using purposive sampling, 239 families were selected, 160 families from the Banihal pass route and 79 from the Pir Panjal pass route. A verbal autopsy has been used in this study to draw the information. Verbal autopsy is a research method that helps to determine the probable cause of injuries, affectedness and deaths in those cases where there was no formal attention given to the cause of deaths or where no medical record was kept (Centre for Global Health Research-CGHR 2018).

DISEASES AMONG PASTORALISTS

Most Bakarwal pastoralists are generally poor and used traditional methods of health recovery due to lack of access, money and education. Bakarwal pastoralists live in an open and marginal environment and are vulnerable to diseases. Bakarwal divides the diseases into three types that are witchcraft, God's will or given, and common disease. For witchcraft, pastoralists went to the magician (*Fakir, Peer, Duala*) and for God-given diseases, they went to Masjid, on peer Manjar. For normal diseases, pastoralists used indigenous methods and if there is accessibility then went to the chemist. Further diseases among Bakarwal livelihood can be divided into two categories first one is livestock diseases and the second one is labour (human being) diseases. This study covers the various kind of livestock and animal disease prevailed among pastoralists of Western Himalaya.

LIVESTOCK DISEASES

The introduction of exotic bred¹ of sheep and goats in the Western Himalaya (Jammu and Kashmir) has led to the vulnerability of indigenous animal species. The local Bakarwali indigenous goat and sheep are resilient to many diseases but the introduction of crossbred, make the whole herd vulnerable to diseases. Pneumonia, foot and mouth disease, sheep pox, goat pox, clostridial disease, contagious ecthyma, fascioliasis, foot root, anthrax, and pasteurellosis are the common disease among goat and sheep of pastoralists in western Himalaya

¹ Introduction of livestock Breed in J&K such as Russian merino, Australian Merino, Polldorset and Corriedale breed.

(Govt. of J&K, Directorate of Sheep Husbandry 2018). Sheep pox (*Thandi or Mata*) is a viral disease; the common sign is showing skin scratch of pox. Sheep of all age groups are susceptible to sheep pox. Before the introduction of sheep pox vaccination in the state, there was great livestock loss in the time 1980s. The state sheep husbandry department brought the vaccine from USSR, and the disease was controlled. In the 1990s again there was a spell of sheep pox which again caused great livestock loss; at that time the reason identified was the unchecked import of livestock from the other states which spread this viral disease among the pastoralists herd. Tetanus (*Chanini*) is a bacterial² disease that brings great economic losses in the pastoralists herd. The symptoms are dysentery, weakness, bloody diarrhoea; young livestock is more vulnerable as compared to older. To control the disease, the vaccination is served by the sheep husbandry department of J&K once or twice in a year. Footrot (*khur*) is a bacterial disease and spread from one animal to another animal. The disease is common in high altitude pastures and in the marshy areas. The sign of this disease is the feet and nails of the animal gradually start affected (Govt. of J&K, Directorate of Sheep Husbandry 2018). Goat plague also known as PPR³ is an infectious viral disease, the Bakarwal migratory livestock when comes in contact with alien livestock get affected and brings an outbreak of disease, the symptoms are fever, rapid respiration rate, diarrhoea and anorexia. The active time of the disease is in summer (Mahajan et al. 2013). Blue Tongue (*Neeli Jubban*) is a viral disease caused due to sand fly named fly and mosquitoes, the indication of the disease is high fever and lameness. Foot and mouth disease (*Maukhar*) is a contagious viral disease; the symptoms are high fever, lension in mouth and foot. It caused a greater economic loss for the Bakarwal pastoralists. The affected livestock is usually incapable to survive with this disease and suddenly died. Orf or Contagious ecthyma (*Pakka*) is also a common livestock disease among the pastoralist of Western Himalaya. It is a viral disease characterized by formation of scabs near the mouth (Dar et al., 2015), it affects the skin around the lips,

² A kind of Toxin is produced by clostridial bacteria the sign are botulism and tetanus. See also <http://www.goatworld.com/articles/enterotoxemia/clostridial-ebook.pdf>

³ PPR stands for *Peste des petits ruminants* commonly called as goat plague. PPR has 80-90 percent morbidity. See also Kumar, P, et al. 2015. PPR control in Goat: A guide for animal health services providers.



nose and mouth of animal, and the young livestock are more susceptible to this disease. The active time of disease is in the spring season but can occur any time of the year. Pneumonia is common among goat caused due to mycoplasma organism the symptoms of the disease are cough and cold, livestock stop to take fodder, watery nose. The vulnerable places for it are winter camps because the livestock is weak here due to fodder and water scarcity and unable to cope with the disease. Maggots among the Bakarwal livestock are common kind of health problems which usually took place during humid season. The maggots nurture in the moist condition, the wounds are the spot of maggot growth. The animals with open wound during the hot-humid time are more vulnerable to maggots. Dysentery in goats and sheep (*Ba*) is also the common issue among pastoralists herd in the Western Himalaya, the reasons behind are paratyphoid, rift valley fever, worms and consumption of poisonous plants and grass. The poisonous plants and grass species has been increased in the pastoralists habitat due to climate change. Fascioliasis disease usually occurs at the time of November and December and Pasteurellosis which is a bacterial disease; common during transhumance time due to long journeys and mall nutrition of livestock also provides economic loss to the pastoralist of western Himalaya. (Govt. of J&K, Directorate of Sheep Husbandry 2018).

HUMAN DISEASES

The health issue straightforwardly influences other livelihood assets management, for example, the bad health of shepherds prompts less security to domesticated animals and defenseless against wild animal attacks. If the ailment continues without being cured leads to death which brings psychological stress on the family members. The common diseases among Bakarwal pastoralists' family members are fever, sickness, dysentery. The climatic condition and sanitation make the creepy crawlies and microorganisms thrive and grow their numbers. Besides, the Bakarwal residential camps are in a marginal environment, which is vulnerable to diseases. Exposure to an open and stressful environment is responsible for various kinds of impairment such as a headache, abdominal pain due to consumption of infected food and water. Food poisonings, food allergies, and stomach viruses are the common reason behind abdominal pain. During transhumance, Bakarwals are more vulnerable to abdominal pain due to halting in unhygienic places and in taking of affected food and water. Joint pain is common among Bakarwal old age people, the long-distance seasonal migration and upward slope and rugged topography makes the old age people vulnerable to joint pain. The aged weak people are

more vulnerable to cardiac death at high altitude areas due to altitude exposure (Levine 2015). The low oxygen level at the high altitude makes the unfit Bakarwal vulnerable to cardiac disease. World health organisations defined diarrhoea as the more frequent passage of loose stools per day than normal. The causes may be viruses, parasites or bacteria organisms, food allergies, and anxiety (Govt of India-NHP 2017). In the winter and transit camps, Bakarwal pastoralists are more vulnerable to diarrhoea they faced the issue of non-potable water, unhygienic living conditions, poor nutrition, infections and ingestion. The contaminated water or food often spreads infection. The active period of this disease is the early rainy season. Children below the age of five years are more prone to this disease (Govt. of India-NIDDK 2017). Pastoralists used ethnobotanical knowledge such as for the treatment of high fever they use Handri (*Taraxacum officinale*), whereas Kahzaban (*Arnebia benthamii* Wall) is also used to get relief from fever and abdominal pain. For the treatment of Joint pain Soi (*Urtica dioica* Linn), is used. For minor skin disease, Kikar (*Acacia Nilotica*) leaves are burnt and paste it as an ointment on the affected area during winter camps, whereas Charma (*Hippophae rhamnoides* L) fruit is used in the summer and transit camps for minor skin diseases. For diarrhoea control, the leaves of Sakhvan (*Fragaria nubicola*) are used. For Jaundice Amla (*Emblia officinalis*) is used. .

SENSITIVITY TO DISEASES

The sensitivity of pastoralists against diseases is quite helpful to know that how resilient the pastoralists against diseases as a stressor on livelihood, thus it is an important indicator of approaching the occupational health of pastoralists. The mortality and affected rate was found through verbal autopsy, the affected rate per thousand populations was 152.78 persons in the winter camps followed by 59.34 persons in the transit habitat and 109.85 persons in the summer habitat. Mortality rate due to diseases was high as compared to the other stressors; it was found that 1.26 persons per thousand persons died due to diseases every year in the winter camps followed by 1.26 persons per thousand in the transit and 1.89 persons in the summer habitat. The CFR reported for the year 2016-17 in the winter camps was 0.83 followed by 2.13 in the transit camps and 1.72 in the summer camps. If we look at the livestock sensitivity to diseases, it is found that 68.18 livestock affected per thousand livestock every year due to diseases in the winter camps followed by 42.33 in the transit camps and 28.37 in the summer camps. The livestock mortality rate per thousand livestock was 13.52 livestock every year in the winter camps followed by 5.69 livestock in the transit



habitat and 4.41 livestock in the summer habitat. If we look at the CFR, it is found that the CFR in the winter habitat for the disease was very high that was 19.83, whereas it was 13.45 in the transit camps and 15.53 in the summer camps.

CONCLUSION

Pastoralists in the Western Himalaya lives in marginal environment and are exposed to many diseases, they are far from modern health services due to remoteness, poverty trap and illiteracy. Most pastoralists are generally poor, illiterate and use traditional methods such as ethnobotanical medicines, magic and religious practices instead of using modern medicines. The prevalence of major diseases such as cancer, Aids is low among the pastoralists. The observed reasons are: most of nomadic pastoralists do not go for disease diagnosis thus recognition of diseases are absent in the community. Whereas the people affected due to recognisable diseases are more in numbers because these diseases do not need any machinery or gadget for recognition, thus we found that common diseases are more prevalent while sophisticated recognized diseases are less common due to absence of diagnosis of the disease among the pastoralists.

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