

Climate Change and its Impact on Health: A Local Perception of People of Kotkhai Tehsil of District Shimla, Himachal Pradesh

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ABSTRACT

The anthropogenic climate change has many disastrous impacts, of which health implications are one. A holistic approach is needed to understand the impact of climate change on health and anthropological study caters to the need of understanding the physical, mental and social aspects of health. This study is an attempt to get a better understanding of how climate change has impacted the health of the people of the studied area and is based on the respondents' perception.

The present study was conducted in four villages of Kotkhai tehsil of Shimla district of Himachal Pradesh by using an exploratory research design. The sample for study was selected by using purposive and snowball sampling technique. The data were collected by participant observation and focus group discussions, and the analysis of the findings was done.

The findings suggests that the physical, mental and social health were being impacted by the changing climate and that the climate change had direct and indirect consequences that hampered the health by deteriorating the food and water quality, reducing the air quality, creating stress and anxiety, loss of cultural values and customs, and declining communal bond.

Climate change is a global phenomenon which needs action at global level, however, with small steps taken to mitigate it at individual and community level along with government, its rate can be deaccelerated. The impact of climate change on health can be reduced only when actions are taken to combat climate change.

Key words: *Climate change, Focus Group Discussion, Physical Health, Mental Health, Social Health.*

Introduction

Climate change, the change in the climatic conditions over a time period of

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several decades, has always been changing, but what has made it a matter of concern is the increase in the rate of this change due to anthropogenic activities which has turned it from a natural phenomenon into a man-made disaster. This anthropogenic climate change has impacted various aspects of every living being and has affected the natural ecosystem. For instance, flora and fauna are perishing, the mountain ecosystems are becoming unstable, increasing temperature is increasing the sea level and thus affecting the corals, epidemiology of various organisms is changing especially of disease-causing pathogens, be it plant, animal or human being related disease-causing pathogen. The 'anthropogenic' climate change, ironically, have had an overall adverse impact on the humans. One such adverse impact of climate change on humans is in the form of health implication/ailments. According to Costello et al. (2009), climate change is the biggest global health threat of the twenty-first century.

Health, as defined by World Health Organisation in 1948 (cf. WHO, 2006), "is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". It is one of the Sustainable Development Goals (SDGs), SDG 3, which ensure healthy lives and promotes well-being for all at all ages.

Climate change can affect human health in several ways, like, by changing the severity or incidence of health problems that are already affected by climate or weather factors and by creating new unexpected health problems or threats in places where they have not previously occurred (U.S. Global Change Research Program, 2016), by changing the epidemiology and thus, the distribution and transmission of several vector borne infectious diseases like malaria and dengue, and diseases related to heat stress, by causing loss of lives, livestock and goods due to extreme weather events like floods and droughts, by reducing the water availability for domestic uses, sanitation levels, by causing losses in food production, biodiversity and ecosystem functions (McMichael et. al., 2003).

As per the report prepared under U.S. Global Change Research Program (USGCRP, 2016), the impact of Climate change on health is as follows:

1. Medical/physical health: Changes in fitness and activity level; heat related illness; allergies; increased exposure to water borne and vector borne illness
2. Mental health: stress, anxiety, depression, grief, sense of loss; strain in social relationships; substance abuse; post-traumatic stress disorder
3. Community health: increased interpersonal aggression; increased violence and crime; increased social instability; decreased community cohesion.

Climate change and health: an anthropological approach

Even though anthropogenic climate change has been the talk of the town in the recent times, a discourse of climate and culture has been vividly discussed in human society for millennia and anthropology has played a central role in this discourse (Dove, 2014). Anthropologists have been taking keen interest in the climate related study throughout 20th century to till date. Classic studies in environmental anthropology delved deeply into emic or native views of climate (Dove, 2014). Anthropological work on climate change as the field of 'climate anthropology' (Nelson and Finan, 2000), is important as it uses the anthropological tool of respondent observation by being there and recording the emic view of the people.

While dealing with health in anthropological context, the concepts of disease and illness always tags along. While disease is a pathological condition, illness is a feeling of not being well which may be due to a disease or may be due to psychological or cultural factors. Hence, when the overall well-being is considered, the complete health system is to be taken into account which includes cultural perception and classification of health-related issues, healing practices, diagnosis, prevention, and healers (Miller, 2011).

Climate change impacts the human health, but the impacts vary according to geography and depend on factors like specific regional climate impacts, demographics and human vulnerabilities and existing local adaptation capacity, which is why there is a need to incorporate local data (Schramm et al., 2020). One of the characteristic features of the anthropological study is that it is a study of a small population and hence, suitable for conducting research at a local level.

When we talk about climate change and health in an anthropological sense, we attempt to study the impact of climate change on the health of the people, in a holistic manner, as observed by the people and what are the cultural factors that are involved. Also, the anthropological concept of health goes well hand in hand with the definition of WHO (1948) as mentioned earlier, according to which, health is not just about physical well-being and absence of disease, but also, mental and social well-being, therefore, while studying the impact of climate change on health all the factors, that are, physical, mental and social, were taken into account. As not much data is present on the health implications of changing climate, the present study is an attempt to get a better understanding of how climate change has impacted the health of the people of the studied area and is based on the respondents' perception.

Research Methodology

Kotkhai tehsil of Shimla district, Himachal Pradesh (India) has a mountain topography and ecosystem, and is situated in the sub-Himalayan range. The

present study was conducted in four villages of Kotkhai tehsil of Shimla district of Himachal Pradesh by using an exploratory research design to understand the perception of the people regarding climate change and its impact on health. The villages, viz., villages Bhawana (1825m from sea level), Kiari (2224m from sea level), Kufar Bag (2362m from sea level) and Jashla (2438m from sea level), were selected after the pilot survey in the month of May-June, 2017 during which it was observed that the villages at different altitude had varying impact of changes in climate conditions. The data were collected between the years 2018-2020. Ethical clearance was taken prior to data collection from Institutional Ethics Committee.

The unit of study were the people of the selected villages which comprised of members from alternative houses. The respondents were above the age of thirty which were selected by purposive sampling as climate change is the change in climatic conditions over the period of several decades. Snowball sampling was used for selection of the respondents with the help of the information provided by the key informants who had an idea about all the households of the selected villages.

The present paper is purely based on qualitative data which were collected by participant observation and by conducting Focus Group Discussion. For the analyses of the data collected, the perspectives of the people of the focus group have been used. This paper mainly comprises of findings of 5 Focus Group Discussions.

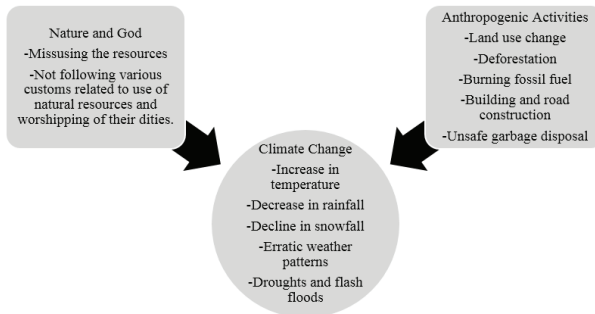
Climate Change and its Impact on People's Health

The phenomenon of climate change was observed by all the respondents of the selected villages, however, the impact perceived was different for respondents of different villages. The people belonging to relatively lower altitude villages, like Bhawana (1825m from sea level) and Kiari (2224m from sea level), faced the brunt of climate change to a greater extent than the villages at relatively higher altitude, that are, Kufar Bag (2362m from sea level) and Jashla (2438m from sea level). Though there was lack of clinical evidence regarding climate change's impact on health, the people of the field area were of the belief that over the time the health of the people have started to deteriorate and that change in climate has led to certain adaptations which have resulted in poor health of the people.

First and foremost, before understanding the perception of people regarding effect of changing climatic condition on health, the familiarity of people with the climate change and the factors that led to it must be take into account. All the respondents were aware of the changes in climatic conditions over the time. They had all observed an increase in temperature and a decline

in rainfall and snowfall over the years. According to them, the events of erratic heavy rainfall and hail were becoming frequent recently. The unseasonal events like no snowfall during winter, very high temperature and random lashes of rainfall made the ongoing global phenomenon of climate change felt strongly by the people. The people of the field area believed that there were various reasons behind the change in climate. Some believed that it was nature and their deities punishing them for misusing the resources and not keeping up with their culture, while many believed that it was a global phenomenon that was accelerated by various anthropogenic activities like deforestation, burning of fossil fuels, changes in the way the land was used, unsafe garbage disposal and building concrete buildings instead of traditional ecofriendly houses. Figure 1. depicts the various factors, like natural and man-made, that led to climate change, as perceived by the respondents.

Figure1. People’s perception regarding factors leading to climate change



Source: Field data

Focus Group Discussions

Group I (Bhawana village)

According to the respondents the temperature has at least increased by 2-3 degree. There has been negligible snowfall in the area for past few years and there were drastic changes in rainfall pattern. These changes in climate have resulted in drying of their water sources and given rise to drought like conditions. The respondents were of the belief that due to changes in climatic conditions there has been a rise in different types of diseases related to plants and animals. There has been an increase in use of pesticides and chemical fertilizers for promoting the growth of various crops being grown for personal use due to various emerging diseases, and unfavourable climate conditions which have led to issues like lack of moisture and nutrients in soil, and excessive moisture or drought like conditions. These chemicals have entered into the nutrient cycle and water cycle which have impacted the health of the people. As per a respondent,

The immunity of people has been compromised because of contaminated food and water, and it may be one of the reasons why there has been a spike in recent cases of cancer.

The contaminated water and soil have an impact on the health of their domesticated animals, especially cows. The respondents were of the opinion that the fodder for the cows has been affected by the chemicals in the soil along with the water that is contaminated by run-off chemicals and is getting scarce. This has impacted the quality of milk which then has indirectly affected the health of the people consuming the milk. In recent times most of the people have stopped raising cows due to lack of water and are now dependent on milk in tetra packs, which in comparison to cows' milk have lesser nutritional aspect.

According to the respondents, the increasing temperature had made it difficult for people to work in fields during the day time. If proper precautions were not taken, one might suffer from heat stroke. One of the respondents noted that,

Headache and dehydration are becoming common in the children in the school during summer. Also, the classes related to outdoor physical activities are being hampered which according to a respondent might take a toll on physical and mental health of the children and may also affect the social skills that are created and refined by such interactions.

As the people of Kotkhai belt were mainly orchardists, their main source of livelihood was affected severely by the changing climate. A respondent expressed concern over the changes saying that,

The expenditure on apple related requirements have increased as with new array of diseases like Scab use and pests like Woolly Apple Aphid and Mites, new cures in the form of expensive chemicals like Dodine, Captan, Carbendazim and pesticides like Chlorpyrifos and Spiromesifen are being used, and because the pattern of weather has become erratic and suitable requirement for a good crop are not being met, the income in comparison to the expenditure is less than before. As the return or profit have become a matter of chance which is solely dependent on how the climatic events turned out to be, an environment of stress and anxiousness have emerged.

Keeping in mind the future, one of the respondents has made an attempt to revive the deteriorating apple business by planting high-density saplings of apple which he brought in from Italy. According to him these high-density plants could thrive in lower belt where the traditionally grown apple trees were drying out due to increasing temperature and declining precipitation.

Group- II (Kiari village)

Respondents observed a decline in rainfall and snowfall and a shift in seasons. One of the respondents perceived that,

The change in climate is a global phenomenon and increasing population is the main reason behind climate change as needs are increasing with population and along with that the exploitation of natural resources.

Another respondent felt that,

Climate has always been changing. It was when humans started interfering with the nature by exploiting its resources that it started having a negative impact on flora and fauna. For instance, I had cleared of a piece of land which had Kanishk (Alnus neplalensis) trees for introducing apple trees to be used as a cash crop. Prior to cutting of these trees, there was abundant water supply in that area, but today that area has gone dry.

The respondents believed that the older generation were healthier and stronger in spite of no medical facilities than today's generation as they lived in a clean environment and ate healthy, organic, chemical free food that was grown at home. The food products today were full of chemicals and people were becoming dependent on artificial nutritional supplements. The respondents were of the perception that climate change had an impact on health as it directly affected the food and water that one was consuming. For the past decade and a half, there was a drastic change in the precipitation which had led to scarcity of water due to shortage of annual snowfall and rainfall and water conservation was difficult due to exploitation of water resources. This scarcity of water had affected the health directly by tempering with the water used for drinking, daily hygiene and sanitation, and indirectly through their livelihood based on horticulture. Recollecting from the incident of outbreak of jaundice in Shimla in the year 2015-16, one of the respondents stated how

In Kotkhai town and nearby areas that receive water from the common source such an incident occurred a few years back.

One of the respondents remembered that,

Some time back a team of health officers examined the water quality of the area and found it unsuitable to be drinking, even by the animals. Since then, most of the families, that are aware of the water quality's condition, have installed water purifiers.

Due to changes in seasonality and weather conditions new diseases related to apple were arising for which various chemical like fungicides were being used that were further contaminating the soil and water. According to a respondent, who was a veterinarian,

This contamination of soil and water has not only impacted the health of people but also of the cattle. The fodder and drinking water is unsuitable for the animals which affects their health and yield.

One of the respondents felt that,

People of the village must take care of themselves and their resources and think for themselves as the younger generation is moving out for better livelihood opportunities as some of them think that the future of apple-based livelihood is bleak in near future.

The migration of younger generation from villages to the cities had led to a sense of loss in the older people who were left behind in the villages as there had

been an influx of new cultural traits and ways of life as the younger people were coming in contact with different people of various culture and were imbibing in their traits, leading to acculturation, mostly in case of interstate marriages. The people, the elders, developed a sense of isolation and grief as there was so much changing around them– the temperature, the precipitation, the way different seasons felt, and the culture and their communal bond.

Group- III (Kufar Bag village)

The respondents of the village held the view that the climate was changing as was indicated by the change in flora around along with the changes in pattern and timing of rainfall and snowfall. Many species of plants and fruits in forest had now vanished. The taste and flavor of agricultural products was missing now and their shelf life had reduced considerably. According to a respondent,

Age of human beings and animals have reduced drastically in past fifty years and climate change is the indirect factor leading to it. Over the years number of diseases had increased manifold as compared to fifty years back. Allergies leading to runny nose and watery eyes are common now. People are facing physical ailments like lower vital capacity as the health was being affected by the type of unseasonal food being consumed and increasing pollution.

According to a respondent,

In Ayurveda every type of food has a season and time to be consumed, however, due to erratic weather pattern the former food cycle which was as per the weather and season, had been disrupted, thus affecting the health of the people and leading to allergies and deficiencies which led to declining immunity and onset of health issues related to respiratory and circulatory system.

The respondents observed a spike in incidence of gout amongst male members of the village, especially during the summer season, the reason being – the village originally had a cold climate and the villagers had a protein rich non-vegetarian diet and consumed alcohol but now that there has been an increase in temperature and the duration of winter had also reduced, the people who still had the same diet and alcohol intake were being troubled by the frequent bouts of gout, especially during the summer. One of the respondents was of the opinion that,

The recent case of Alzheimer's and memory related problems in the village are the consequence of climate change.

Group- IV (Jashla village)

The respondents felt that over the years the effects of climate change had become more prominent. The most striking effect of climate change observed by them was drying water sources, *chasme ka paani* (water from aquifers), the major reason being considerable decline in snowfall in winter and rainfall during monsoon. The villagers now were dependent on the water from the lift

water supply scheme to an extent. According to a respondent,

The water from the natural sources was clean and had healthy minerals and was safe for consumption, while the water from lift scheme is not clean and direct consumption can lead to upset stomachs and diarrhea.

According to some respondents, impact of climate change on water and food quality had an effect on the health which was visible in the children. The children today had weaker immunity in comparison to their generation who rarely fell ill as children. One of the respondents suggested that,

The reason for decline in health of children and elderly could be attributed to the quality of air which was deteriorating due to incidence of forest fires, which were becoming frequent in the forests nearby due increase in temperature and drying patches of land and grass owing to the lack of moisture and increased heat.

Besides the forest fire, as per a respondent,

Burning of garbage was also leading to respiratory problems like lower vital capacity and allergies as it comprised of toxic waste material, such as tetra packs and containers of chemicals being used in the fields for various diseases related to our crops, along with household waste.

Group- V (Women from different villages)

The respondents felt that there was comparatively lesser snowfall and rainfall than in earlier days. The villagers were being troubled by the shortage of water as most of the natural resources, *chasme* (aquifers) had dried out and people now had to share whatever sources were available. People were yet to adapt to shortage of water because of which fights generally broke out amongst the villagers regarding who used how much water and for how long, thus, affecting harmony of the village. One of the respondents recalled that,

Some years back there was a huge fight between the two households over lift scheme water as it was limited and came only for a short duration.

Some respondents observed gradual changes in customs associated to death and marriage over the time. During incidences like a death in village, earlier all the women of the village used to get together and wash all the clothes, used and unused, in the house of the deceased irrespectively and clean the whole house. Now only women of same clan helped in these chores and washed only those clothes that were used in order to save water. A respondent felt that,

Even though the burden of labour was decreasing, the women were now missing out on the time for bonding with others outside home and updating themselves regarding various events.

Also, earlier ceremonies like marriage used to take place at home and lasted for five to seven days where all the relatives and villagers used to gather and

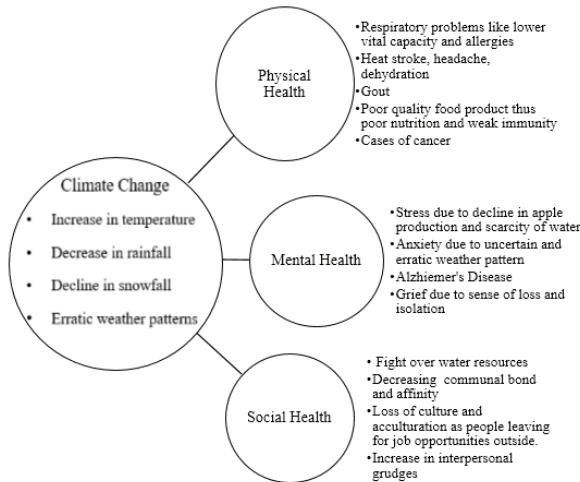
shared their joys and experiences. These days weddings usually took place in a hotel, for two days at the maximum, in order to avoid the trouble of cleaning afterwards. Not all people could attend these weddings as someone had to stay back at home for taking care of their land and domestic animals. Old people usually missed out these ceremonies leading to a sense of isolation amongst them. A respondent recalled,

Once I was not able to attend a marriage of the daughter of a fellow villager which led to sourness in the interpersonal relationship between the mother of the girl and me for some time.

The respondents felt that such incidents were hampering the peace and smooth function of the village community causing tensions between the people and affecting the communal bond.

From the above findings it can be inferred that the climate change impacted the health by affecting the physical, mental and social attributes of health of the people as depicted in Figure 2.

Figure 2. Climate Change’s Impact on Health



Source: Field data

All the respondents felt that with the ongoing changes in climate there had been a decline in the health status of the people. Sudden bouts of rain during summer which brought down the temperature or abnormally high temperature during day time made it difficult for people to adapt to the sudden change, which often led to them getting unwell either by catching cold and fever or due to dehydration and headaches. The respondents felt that there was an increase in temperature which led to problems of dehydration, headaches and hindered day to day outdoor activities as people were yet to adapt to these conditions of

high temperature which were similar to the study by USGCRP (2016), according to which heat exposure can cause exhaustion and heatstroke, and can worsen pre-existing conditions related to cardiovascular and respiratory system.

Due to unlikely climate conditions over the time, the quality of food products had declined and also use of insecticides and pesticides to tackle new diseases arising due to high temperature had made the food products unhealthy and harmful to consume. This perception of people can be supported by the assessment by Lake et al. (2012), which states that due to altered conditions for food production, new pathogens may emerge and with use of pesticides contamination will be transferred from environment to food which will have an impact on food safety and its nutritional content.

People were of the opinion that use of insecticides and pesticides contaminated the food and water sources which was a reason for the present increasing rate of cancer cases. Basil et al. (2007), reviewed literature supporting link between pesticide use and cancer and found a positive association between exposure to pesticides and cancer.

Due to decline in snowfall and rainfall, all the areas of study were facing the issue of water scarcity which further exaggerated the health impact due to contaminated water. Due to the climate related water shortage, supply of water for domestic use has been impacted which has affected the sanitation and hygiene adversely. The scarcity of water in all the villages due to decline in rainfall and no rejuvenation of water sources due to negligible snowfall has created tension among the villagers. The stress generated by water scarcity has led to a decline in the unity and affected the bond between the people of the village thus affecting the community health. Also, the feeling of oneness and trust is put to test when people outsource water from somebody else's source of water. Earlier all families had their own source of water but due to decline in precipitation, the water sources have dried out. This has led to sharing of water sources which sometimes lead to quarrels over the timing and amount of water being used. The similar impact of climate change on health in the form of water insecurity have been stated by McMichael and Lindgren (2011), according to which water scarcity hampered domestic and communal hygiene and in extreme situations led to tension and open conflict, with inevitable adverse health consequences.

The changing climate has not only brought down the immunity level of the people, but it has also led to stress amongst people. The head of the families were worried about the impact of climate change on their main source of livelihood, which is apple production in Kotkhai belt. Due to decline in snowfall and rainfall and increase in temperature, the production of apple has faced a blow especially at lower altitude villages. This has led to stress due to

uncertainty about the outcome of the apple production every year among the people of villages lying at a lower height, that are, Kiari and Bhawana.

Other than the increased temperature and water scarcity, the erratic weather events like hailstorm, droughts and flash floods were also paving way for mental and financial stress. According to a respondent, in the year 2018 (September) there was a cloud burst in Kiari village which led to flash flooding of the market area leading to damage to property and injury of a few people working there. The events like hailstorm during apple cultivation and growth period has become frequent. During the year 2020 the village of Kufar Bag suffered from hailstorm which damaged half of the apple crop thus severely affecting the income. The people of the Kufar Bag village who had never witnessed such an event before, thereafter installed anti-hail net to avoid such disasters in future, thus increasing the expenditure further. Such incidents or erratic weather have instilled the fear of the unknown, which is the weather in this case, and have led to anxiety and fear among the people whose livelihood is based on weather dependent cash crop economy. Cianconi et al. (2020), in their study also found that climate change can lead to extreme weather which not only affected the physical health but also the mental health.

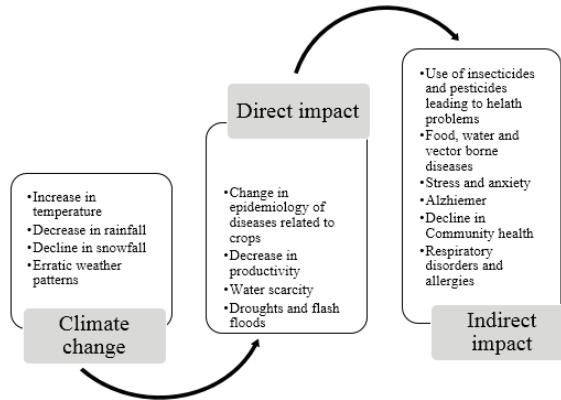
One of the issues that the respondents were facing was that of garbage disposal. Unlike the older times, when most of the garbage waste comprised of organic waste which could be used as fodder and fertilizer, in today's times the access to market and various products wrapped in plastic and non-biodegradable material have made it difficult to dispose garbage in the safe manner. The only collective method of garbage disposal observed in the field was that of burning the garbage, however some people did try to use the method of composting the waste. As the garbage comprised of non-biodegradable material like tin cans, plastic, tetra packs, etc., the burning of garbage have declined the air quality and the respondents were of the opinion that it had led to respiratory issues in people such as sinusitis. The inference of the respondents is similar to the study by Trevino (1996), according to which pollutants accumulate in nasal mucosa which may irritate the nose and sinus and lead to inflammation and result in sinusitis.

According to a respondent from Jashla and Kiari village, one of the factors that have impacted the community health is the loss of cultural values and customs. The younger generation were moving towards the cities for better job opportunities. During the study it was observed that the majority of population in villages comprised of old people, their children would only visit during holidays or during the harvesting of the crop, i.e., the apple season. This has led to grief, a sense of loss, amongst the people in the

village as everything – the seasonality, the temperature, the precipitation, the culture, the flora and fauna, the way of life was changing. The respondents felt that although the younger generation were still attached to their roots, their villages, the uncertainty of livelihood flourishing in near future due to climate change have forced them to move out, thus creating a social void where there is a chance that the coming generation may forget their roots and communal bonds altogether. Climate change is leading to livelihood transition which is leading to cultural changes, and alteration in environment and interactions are changing not only traditional knowledge but also identity as suggested by the work of Morrissey et al. in 2013 (cf. Straza et al., 2018).

According to the data collected during the field work, the climate change had various direct and indirect impacts on the people as depicted in Figure 3.

Figure 3. Climate change and its direct and indirect impacts



Source: Field data

Conclusion

The climate change in the form of increasing temperature and declining precipitation have jeopardized the health of people by compromising the quality of food and water; by leading to stress and anxiety amongst the people due to the uncertainty of the climate conditions; by developing sense of grief, and affecting the social health by changing the dynamics of the various social activities and interactions, and bringing in changes in the communal bond and affinity, thus disturbing the balance of social cohesion.

The respondents attributed to climate change for cases of cancer in the area due to increase in use of pesticides and insecticides to combat the impact of climate change on their crops. The younger generation had comparatively weaker immunity due to poor nutritional quality of food and polluted

environment. There were outbreaks of diseases like jaundice and a rise in new disease-causing agents in plants. The inapt techniques of garbage disposal, which now comprised of mainly non-biodegradable waste due to changes in consumption, had led to respiratory disorders and allergies due to polluted air. The rise in temperature had led to harsh day time conditions which often resulted in dehydration and headaches if precautions were not taken.

As the people of the field area were mainly horticulturists, the changes in climate conditions had led to anxiety and stress amongst the people due to the uncertainties in weather patterns and rise of new diseases which has resulted in use of chemical fertilizers and pesticides which in turn has affected the health of the people and the climate. Furthermore, due to decline in the apple production which is the main source of livelihood, there has been an outward migration of younger generation for better job opportunities leaving behind the older generation with a sense of loss and grief.

The scarcity of water due to decline in precipitation have led to never seen before circumstances and incidences like fights amongst people over water sources, and change in customs and norms related to marriage and death. With the outward migration, there has been a contact with other cultures leading to acculturation and changes in the traditional way of life.

Climate change is a global phenomenon which needs action at global level, however, with small steps taken to mitigate it at individual and community level along with government, its rate can be decelerated. The impact of climate change on health may be due to different factors at different places, for instance, places lying near to sea level and with hot and humid climate may face the health effect in the form of diseases like malaria, natural disasters like floods and tsunamis. Similarly, the regions like mountain region, which have a sensitive ecosystem, may see adverse effect of climate change in the form of disasters like cloud bursts, landslides, degrading water sources, etc. which would further impact the health by affecting the mental and physical health, and the social or community health. Chamoli glacier burst (Uttarakhand) which occurred on 7th February, 2021 (Narain, 2021), is one such example of sensitive mountain ecosystem being affected by climate change which led to deaths of several people and damage of property.

The impact of climate change on health can be reduced only when actions are taken to combat climate change. Climate change has led to transitions in the way of life which needs action to be taken in order to adapt to these changes in climate. The people of the study area in the present paper have taken up steps like afforestation and rain water harvesting at individual and community level to combat the impact of climate change. An attempt to use organic fertilisers and pesticides has been made to counter the negative health implications of

using harmful chemicals.

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