

**EFFECTING SOCIO- CULTURAL FACTORS INFLUENCE  
LIFE EXPECTANCY OF THE PEOPLE OF HUNZA**



By

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## *Formal Declaration*

I hereby, declare that I have produced the present work on the **Effecting Socio-cultural factors influence life expectancy of the people of Hunza** by myself and without any aid other than those mentioned herein. Any ideas taken directly or indirectly from third party sources are indicated as such.

This work has not been published or submitted in any other examination board in the same or in a similar form.

**The content of this thesis is exclusively my responsibility.**

## *Acknowledgements*

*In the name of Allah, the most beneficent, the Most Merciful*

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# Table of Contents

<b>1. INTRODUCTION</b> .....	<b>1</b>
1.1. Objectives .....	2
1.2. Statement Of the Problem .....	2
1.3. Significance Of the Study .....	3
<b>2. AREA PROFILE</b> .....	<b>1</b>
2.1. Map Of Hunza .....	1
2.2. Micro Profile .....	1
2.3. Regions .....	1
2.4. Population .....	3
2.5. Tehsil .....	3
2.6. Languages .....	3
2.7. Religion .....	3
2.8. Macro Profile .....	3
2.8.1. Mir Of Hunza .....	3
2.9. 2010 Landslide .....	4
2.10. Tourism .....	4
2.11. Cuisines .....	5
2.12. Caste .....	5
2.12.1. Shin caste and its origin .....	6
2.12.2. Yashkun caste .....	7
2.12.3. Talany Festival .....	8
2.12.4. Interactions among castes .....	8
2.12.5. Other Castes .....	8
2.13. Community Values and Norms .....	9

2.14.	Festivals .....	9
2.15.	Dress Pattern.....	9
2.16.	Education .....	10
<b>3.</b>	<b>LITERATURE REVIEW .....</b>	<b>10</b>
<b>4.</b>	<b>RESEARCH METHODOLOGY.....</b>	<b>1</b>
4.1.	Qualitative Methodology.....	2
4.2.	Rapport Building .....	2
4.3.	Participant Observation .....	3
4.4.	Sampling Procedure .....	3
4.5.	Key informants .....	4
4.6.	Semi structure interview.....	4
4.7.	Fully structured Interviews.....	5
4.8.	Tools For Data Collection .....	5
4.8.1.	In-depth Interviews .....	5
4.8.2.	Photography .....	6
4.8.3.	Informal Discussions .....	6
4.9.	Case Study Method .....	6
4.10.	Focus Group Discussion.....	7
4.11.	Audio Recording.....	7
4.12.	Interview Guide .....	7
4.13.	Data presentation .....	8
4.14.	Informed consent .....	8
4.15.	Anonymity and Confidentiality .....	9
<b>5.</b>	<b>REASONS OF THEIR AGE LONGEVITY.....</b>	<b>1</b>
5.1.	Natural and Organic diet of hunza's .....	1

5.1.1.	Hunza bread .....	2
5.1.2.	Vegetable and fruit consumption .....	2
5.1.3.	Fresh water .....	3
5.1.4.	High amount of fish consumption.....	4
5.1.5.	Less meat consumption.....	4
5.1.6.	Use of apricots both dried and fresh .....	5
5.2.	Impact of environment on longevity .....	6
5.3.	How long do hunza people live.....	7
<b>6.</b>	<b>CULTURAL AND SOCIETAL ASPECTS WITH RESPECT TO THEIR FOOD AND LIFESTYLE .....</b>	<b>1</b>
6.1.	Ginani Festival .....	1
6.2.	Nowroz Festival .....	2
6.3.	Spring Blossom Festival.....	3
6.4.	Role of Hunza people & local food in raising tourism .....	5
6.5.	Promote Their Culture Through Their Food .....	6
6.5.1.	Golee .....	7
6.5.2.	Harissa.....	7
6.5.3.	Chapshuro .....	7
6.5.4.	Shopan.....	8
6.5.5.	Gittey.....	8
6.5.6.	Sharadi .....	8
6.5.7.	Diram Phiti.....	8
6.5.8.	Buttering Daudo .....	8
6.5.9.	Tumuro.....	9
6.5.10.	Fenugreek Soup .....	9

6.6.	Promote Their Culture Through Their Lifestyle .....	9
<b>7.</b>	<b>ROLE OF DIET IN PREVENTION AGAINST DISEASES .....</b>	<b>1</b>
7.1.	Role Of Diet in Prevention Against Cancer .....	2
7.2.	Role of apricots and kernel oil .....	2
7.3.	Role of vegetables and fruits .....	3
7.4.	Prevention Against Cardiovascular Disease .....	4
7.4.1.	No smoking.....	4
7.4.2.	Maintaining a healthy weight.....	4
7.4.3.	Following a healthy diet.....	5
7.5.	Prevention Against Diabetes .....	5
7.5.1.	Green vegetables.....	6
7.5.2.	Non-starchy vegetables.....	6
7.5.3.	Beans.....	7
7.5.4.	Nuts and seeds.....	7
7.6.	Psychosomatic Diseases .....	7
7.7.	How the people of Hunza don't suffer from diseases .....	9
7.7.1.	Organic food .....	9
7.7.2.	Fresh atmosphere .....	10
7.7.3.	Physical activeness.....	10
7.8.	Impact of glacier water on their health.....	11
<b>8.</b>	<b>SUMMARY AND CONCLUSION .....</b>	<b>1</b>
<b>9.</b>	<b>REFERENCES .....</b>	<b>1</b>

# 1. INTRODUCTION

Hunza Valley is one of Gilgit Baltistan's most attractive valleys. This valley is known for its tranquil beauty, rich history, high literacy rate, fresh fruits and vegetables, and is flanked by the spectacular Karakoram Mountains such as Rakaposhi, Hunza Peak, Darmyani Peak, and Ladyfinger Peak, among others. Hunza Valley is located in Pakistan's Gilgit-Baltistan territory. It is a fertile valley that supports agriculture and it is located at a totally excessive altitude. There are numeral legends that have grown up around the Hunza people that they live to be 150 years old, Every day is a gift when you are over 100 (Alexander Leaf -National Geographic, 1973). Leaf reported unusually high occurrence rates of centenarians, many of whom were peculiarly healthy and disease free, in a cover story in National Geographic.

In hunza valley, womenfolk can conceive between the ages of 60 and 90 and that the local population is protected from cancer. It is true that the average life expectancy of hunza is significantly greater than the rest of Pakistan, where the average is 67 years old. Part of the reason for this extended lifespan is geographic. The Hunza people live in a remote area of the country where they use fresh glacier water for drinking and bathing. They also live at a high elevation, which means that they are breathing clean, fresh air, whereas many undertake active outdoor jobs which helps keep them mentally and physically fit.

Hunza has long been known as the home of another long-lived civilisation. Hunza's people have been labelled the world's healthiest and oldest living people for many years. Sir Robert McCarrison, a renowned British physician and nutrition researcher, was the first to perform scientific studies on the Hunzas and their cuisine in 1920. He claimed that my own experience represents a race unrivalled in physical perfection and disease-free living in general. Hunza people enjoy a healthy lifestyle due to the valley's geography and unique surroundings. Their healthy lifestyle traits are extremely comparable to those of the Blue Zone populations who have lived for a long time. Hunza's residents are highly active and healthy, with both young and old working in the stepped fields and maintaining their gardens, skillfully raising organic vegetables in the clear mountain air and sunshine. They get plenty of exercise all day



long climbing up and down the terraces on their farms. The pure water they drink comes directly from the glacial streams found in the high Himalayas. They mostly eat a vegetarian-type diet. Most of the protein they eat comes from plant sources such as beans and legumes. They enjoy whole-grain chupati bread (a delicious flat unleavened bread) at almost every meal. The Hunzakuts eat a large quantity of organic fruits and vegetables. Apricots, both fresh and dried and the kernels/seeds inside them are a main staple in the Hunza diet and are famously thought to be a major reason for their legendary health and longevity. Other fruits they consume include mulberries, cherries, apples, peaches, grapes, and pears. Vegetables in the Hunzakut diet include leafy greens, potatoes, carrots, turnips, squash, onions, and garlic. 80% of vegetables are eaten raw with their skins and the remaining 20% are usually lightly steamed. They get their essential fatty acids from eating nuts (walnuts are a dietary staple), apricot kernels and its oil. In addition to the glacier water, they also drink herbal/ medicinal tea which prevents them from many diseases.

### **1.1. Objectives**

- To understand the various reasons of age longevity of the people of Hunza.
- To explore the culture and societal aspects with respect to food and lifestyle.
- To investigate specific foods which are responsible for prevention of many diseases especially cancer

### **1.2. Statement of the Problem**

In the early 1970s, National Geographic ran an extensive series of articles investigating claims of long-lived people around the world. The Hunza people, who lived in the Hunza Valley in Northern Pakistan, were one of those peoples. They became fascinating case studies of the unique region in which they live.

In this research, I have tried to analyze why the people of Hunza are having longer life expectancy than other areas of Gilgit-Baltistan and to know about their lifestyle, daily routine and diet. Furthermore, what type of food they eat due to which they don't suffer from health issues. As WHO states that "investing in health and promoting it throughout the life span is the only way to ensure that more people will

reach old age and good health and capable of contributing to society, intellectually, spiritually and physically”.

### **1.3. Significance Of the Study**

The significance of this study is that the people who want to live a healthy life can learn a lot from the people of Hunza and adopt their lifestyle habits and foods to live a healthy long life. This research is to provide best knowledge to find the underlying reasons for the longevity of the people of Hunza. For this, researcher visited Hunza and interviewed the local populace of Hunza to know about their lifestyle, food and other allied reasons for their healthy and long-life. After interviews, researcher found out the unique healthy lifestyle of the Hunza people as we know our health is totally depend on our way of living.

Through this research, reader can understand the daily life routine of the people of Hunza, where they wake up early in the morning with the first ray of sunshine to work on their farms/fields. All men and women work together in the fields from which they get plenty of exercises all day long which acts as a morning exercise and helps keep them physically fit. Almost all their food comes from their own fields, they eat what they grow which is purely organic. Their food is mostly consisted of vegetables and they get their protein from local dairy products like milk, butter etc and only a small portion of food comes from outside, this is the reason they don't get sick and live a healthy life. This research also shows that how our way of living effect our health.

## 2. AREA PROFILE

This chapter deals with the area where I conducted my research. The research was conducted in Hunza valley situated in Gilgit Baltistan. This chapter helps to understand the culture, history, population and analyses the social position of the locale.

### 2.1. Map Of Hunza



Source: google

Hunza is a mountainous valley in Gilgit-Baltistan, bordering on the west with Khyber Pakhtunkhwa and the north-east with China's Xinjiang region.

### 2.2. Micro Profile

The Hunza Valley is **2,438 metres** above sea level (**7,999 feet**).

### 2.3. Regions

Hunza is divided into three regions.

- **Upper Hunza (Gojal);** Upper Hunza (Gojal) is a lovely valley with three distinct language groups: Burushaski speakers, who originated in central Hunza and migrated during the Ayashoo empire, and Wakhi speakers, who originated in the Wakhan corridor. Wakhi speakers compensate 65 percent of the population, while

Burushaski speakers make up the remaining 34%. Domki is the third dialect spoken by 1% of the population in Nazimabad and Shishkat area. The upper Hunza begins in Ayeen Abad village, which has been fully submerged in an artificial lake due to a natural disaster (the Atta Abad Disaster). Misgar, Shimshaal, and Chuporson are all part of Upper Hunza. Gulmit village is the capital of upper Hunza, while Sost is a commercially important village due to the Sost dry port. Upper Hunza is separated into four sections known as Gojal 1, 2, 3, and 4.

Gojal one composed of Ayeen Abad, Shishkat, Gulmit, Passu and Hussaini. Gojal two composed of Khyber, Galapan Murokhoon, Jamal Abad, Gircha, Nazimabad, Hussain Abad, Sost, Khudabad and Misgar. Gojal 3 composed of Shimshaal and the last Gojal 4 composed of Khair Abad, Rashit, Kirming, Kill, Espangi, Shersaabz, and Zodokhon.

- **Central Hunza**

During the monarchial administration of the Ayashoo dynast, a ruling family of Hunza for 980 years from 996 to 1974, Center Hunza was the administrative region, and it is now the primary centre of Hunza State. Hunza's centre begins in the lovely village of Murtaza Abad and ends at Atta Abad. Murtaza abad, Hassan abad, Ali abad, Dorkhan, Shiras, Garelt, Hyder abad, Ganish, Karim Abad (Baltit), Momin Abad, Altit, Ahmed Abad, and Attabad are among the villages that make up the central Hunza. This is Hunza's most populous subregion. Hunza Center is divided into two dialect zones. Burushaski is spoken by 97% of the population, while Domki is spoken by the remaining 3%.

- **Lower Hunza (Shinaki)**

On the east and south, Lower Hunza shares borders with the Nagar Valley. Lower Hunza begins in the village of Khizir Abad and terminates in the town of Nasir Abad. Khizir abad, Mayoan, Hussain abad, Khana abad, and Nasirabad make up the area. Nasirabad's placement on the KKH distinguishes it as a Lower Hunza central village. This neighbourhood is mainly comprised of Shina speakers who are mostly migrants from Hunza's surrounding areas, with many families belonging to Hunza's centre. Shina is a dominated language, which is why it is referred to as "Shinaki." It is culturally rich and not unlike to the culture of central Hunza. The

area's culture is shaped by social norms as well as religious practises surrounding births, marriages, and deaths. KKH enters the region via the first Hunza bridge, near Nasirabad, in the Nagar Valley.

## **2.4. Population**

According to the figures of 1998, the total population of hunza was **243,324** and the total area is **11,660 km<sup>2</sup> (4,500 sq mi)**.

## **2.5. Tehsil**

It consists of two tehsils;

- **Aliabad Tehsil**
- **Gojal Tehsil**

The Aliabad Tehsil contains the villages in lower and central Hunza, whereas the Gojal Tehsil contains the villages starting from the Attabad Lake to the Khunjerab Pass.

## **2.6. Languages**

The locals of Hunza speak three languages:

- Burushaski (spoken in central Hunza)
- Shina (spoken in lower Hunza)
- Wakhi (spoken in upper Hunza)

## **2.7. Religions**

Ismailis, Shias.

## **2.8. Macro Profile**

### **2.8.1. Mir Of Hunza**

The title of Mir of Hunza was given to rulers in the Hunza Valley in Pakistan's Northern Areas. The Mir used to be known as “**Thum**” in Burushaski, but his name was eventually changed to Mir, which is a Persianized version of the Arabic title

Emir. According to a narrative given by John Biddulph in his book “Tribes of the Hindoo Koosh:”

The ruler family of Hunza is known as Ayesha "aya-sha," (heavenly). Hunza and Nagar were once one state, controlled by a branch of the Shahreis, Gilgit's ruling family, whose seat of government was Nagar. Some 1000 years ago, the first Muslim arrived in the Hunza-Nagar Valley (At the time of Imam Islam Shah 30th Imam Ismaili Muslims). Following the arrival of Islam to Gilgit, he married Trakhan of Gilgit's daughter, who gave him twin sons, Moghlot and Girkis. Nagar's current ruling dynasty is descended from the former. The twins are claimed to have been hostile against one another since childhood. When their father was unable to settle the succession issue, he split his kingdom between sons, giving Girkis the north/west bank of the river and Moghlot the south/east bank.

## **2.9. 2010 Landslide**

A landslide choked the river and created Attabad Lake, also known as Shishket Lake, on January 4, 2010, resulted in 20 deaths and 8 injuries, as well as effectively blocking around 26 kilometres of the Karakoram Highway. When the Hunza River backed up, the new lake emerged, stretching 30 kilometres and rising to a depth of 400 feet (120 metres). The Karakoram Highway was entirely buried in some areas by the landslide.

## **2.10. Tourism**

Hunza is among Pakistan's most fascinating regions. In the Hunza Valley's surrounds, several high peaks climb above 7,000 metres. Rakaposhi 7,788 metres (25,551 feet), Ultar Sar 7,388 metres (24,239 feet), Bojahagur Duanasir 7,329 metres (24,045 feet), Diran peak (7,266), Spantik (7027 metres), Ghenta Peak 7,090 metres (15,631 feet), Hunza Peak 6,270 metres (20,571 feet), Darmyani Peak 6,090 metres (19,980 feet), and Ladyfinger Peak (19,685 ft).

Baltit, a Hunza monument built over 800 years ago and resembling of a fairytale castle, is located above Karim Abad. Its wooden bay windows, which are supported

by huge legs, glance out over the valley. Originally, it served as the home of the former rulers of Hunza, known as the Mirs. The ancient watchtowers of Ganish, Baltit Fort, and Altit Fort may also be found in Hunza Valley. The Ganish Village watchtowers are positioned in the heart of the village. The top of Karim Abad is Baltit Fort, while the bottom of the valley is Altit Fort. A large Buddha figure flanked by little Buddhisatvas is etched on a rock dating from the 8th century AD. Carved prehistoric men and animal sculptures can be found on the valley's rocks. Hunza is home to lakes such as Attabad Lake, Borith Lake, Shimshal Lakes, and Hassan Abad Lake.

The Karakoram Mountains' Khunjerab Pass is a 4,693m high mountain pass. Hunza is situated in a crucial location on Pakistan's northern border, as well as on China's southwest border. Views can also be found on eco-friendly hiking excursions such as Ondra Poygah Gulmit and Leopard Trek Shiskhat. During the journey, one may see the 57-kilometer-long Batura Glacier, the world's fifth-longest glacier outside of the polar area, which is surrounded by the Shispare, Batura, and Kumpirdior peaks. After arriving in Sost, one can either continue on to Khunjerab or head west towards the Chupursan Valley.

## **2.11. Cuisines**

Hunza's signature meal is 'chupati, phitti,' which is quite tasty and worth trying. These are generally cakes baked on a hot stone with wheat flour, milk, butter, and salt. Fresh fruits such as apricots, apples, plums, peaches, cherries, and grapes are farmed in this area. Hunza bread is a nutrient-dense grain-based diet. When it comes to international visitors, grape juice known as 'Hunza Water' is quite popular.

## **2.12. Caste**

A caste is a social group made up of people who share the same financial status, profession, or rank. The Brusho people, also known as the Botraj, are an ethnolinguistic group native to Yasin, Hunza, Nagar, and other valleys, with a smaller community of roughly 350 Burusho people living in Jammu and Kashmir, India. **Burushaski**, their native tongue, has been designated as a language isolation. Though

their origins are uncertain, the Burusho people were most likely indigenous to northern India (now Pakistan) and were forced into their current homeland by Indo-Aryan migrations southward circa 1800 B.C.

The majority of Hunza's residents are Ismaili Shia Muslims who follow Prince Karim Aga Khan, while over 90% of the residents of Ganish Village are Shia Muslims.

There are two main casts in Hunza valley:

- Shin caste
- Yashkun caste

I will further discuss about each briefly.

### **2.12.1. Shin caste and its origin**

Shin caste has known to be originated from, Qureshia, Central Asia. The shin people do not agree with this. According to them they have been originated from Arab and belong to the Quraish tribe. Their language, their names, and their lineage suggest that they have been originated from Central Asia. Shin people are still found in Central Asia. The castes are usually recognized by the names of people and the languages they speak. The accent and their names suggest the castes. The names of Shin usually had “ko” attached with it. Sunni and Shia weren't the terms back in the days. Both shin and Yashkun have migrated from Central Asia. Back in the days, they worshipped fire, trees. There's a tree in our village which according to our forefathers was worshipped. They were Hindus and Buddhists. People came from china a few years ago and worshipped the statues that are still found here. Still, statues are found in the walls of old houses.

Islam came after a long time. In the reign of Suu Malik (the king of Gilgit), Syed Shah Afzal came from Iran. Suu Malik and his followers accepted Islam and that's how it spread. Probably, in 725 hijri. Shin caste accepted Islam at last. Geographically, by kinship, tradition, language, and culture, the Shins of Chilas, Gilgit, Astor, Darel, Tangir, Haramosh, Bagrote, Gultari, Gurez, Dras, Soro, and Baltistan are linked to the Shins of Chilas, Gilgit, Astor, Darel, Tangir, Haramosh,



Bagrote, Gultari, Gurez, Dras and Soro. These people are thought to have travelled from Central Asia via the Khyber to Pakhli above Darband, Siran, and eventually Kohistan. The area between Kohistan and Chilas, above Darband and Siran valley, was where they first settled. They continued to migrate to Kashmir and Ladakh in two ways. One from the Pakhli and Siran valleys via Muzaffarabad, and two from current Kohistan to Jammu and Ladakh.

**Occupation:** The main occupation of Shin caste is in Agriculture. They were most famous in wood work. There are some things of them that were famous are listed below;

- Shinni hai (Scale; weighing machine)
- Shinni khapai (spoon)
- Shini Gudur (plate)
- Shino hal (instrument for ploughing the fields)
- Shino Rako (room of wood)

### **2.12.2. Yashkun caste**

The second dominant caste in Hunza is Yashkun caste. Their ancestors migrated from a disputed territory “Chechnya”, A 100 years long and deadly famine was the reason of their migration.

The names of the famous tribes of YASHKUN in East Asia are;

- Sirga yashkun tribe
- Zaibak yashkun tribe
- Golpong yashkun tribe

The name of the Chairman of central Asia sixteen countries federation is “Duma sirgana yashkun”.

It is generally believed that the Yashkun are related to the Aryans. They made their way to Northern Pakistan via the Hindu Kush. In Gilgit, Hunza, Punial, Raushan, Gupis, Phandar, Yasin, Ishkoman, and Chitral, they form the majority. Chilas, Astor, Gurez, Dras, Gultari, Talil, bagrote, haramosh in Kohistan. Rono is, in fact, Yashkun.

The terms Gushpoor and Rono are used to describe their social level in relation to their mother. Gushpoor were the sons born to the Raja's wife from the Raja's own kin-ship, whereas Rono were the sons born to the Raja's wife from the Raja's own kin-ship. Yashkun is a large community with many resources that stretches from Northern Pakistan to Chitral, and the law-and-order situation has gotten worse.

**Occupation:** The main occupation of Yashkuns is also Agriculture. In the past, Yashkuns had their local industries where they used to make the below mentioned things and women also contributed their part in the industries;

- Woolen long coats (shoka)
- Woolen carpet (sharma)
- Woolen cap (farati khoi)
- Woolen blankets (khon)

### **2.12.3. Talany Festival**

Yashkuns had a ruthless king named “Sheribatat”. When he died, people used to bring fire from their homes and used to put it on his grave to celebrate his death. Only Yashkuns used to celebrate it.

### **2.12.4. Interactions among Castes**

SHIN and YASHKUN relations weren't good from the beginning. They don't marry their daughters in the other castes and consider it a matter of ego and self-respect. There have been many clashes between the two castes. They avoid sitting in the same gathering. They have many disputes over land. There are some political and personal issues as well. They have many disputes over land businesses.

### **2.12.5. Other Castes**

Apart from Shin and Yaskuns, there are three other castes that are found in Hunza valley namely;

- Kashmiri (Kashero)
- Dom

- Karmin

### **2.13. Community Values and Norms**

The term “values” and “norms” are frequently interchanged. However, there is a critical distinction to be made between the two conceptions. Values are a broad concept. They serve as the foundation for norms, which are action-guiding rules. Permissions, instructions or directives, and prohibitions are the three types of such rules. Values reveal what individuals and groups consider to be significant. Norms specify what must be done for values to be realized.

As I stated earlier that the residents of Hunza valley are Ismaili’s and Shia Muslims, and every individual is expected to follow the community’s norms and beliefs for example; respect for elders and highly respect for religious occasions.

### **2.14. Festivals**

There are many festivals celebrated in Hunza some of which are as follows;

**Nasalo festival:** This festival has been a very prominent festival from British reign.

In that, they slaughter animals like cows and goats and let their meat dry for over 2, 3 months and they eat that meat throughout the winter season.

**Shaap:** In this festival All the boys from the neighborhood gather and go into houses of the their relatives and neighbors and call them by names and give prayers and the neighbors give them dry fruits, meat and money and then they eat the meal together.

**Nawroz festival:** People make dinner and sweet dishes and invite other people over.

**Ginani:** It is a harvest festival.

**Cherry blossom festival.**

There are many more other festivals celebrated in Hunza valley.

### **2.15. Dress Pattern**

The way a person dresses is very important to their personality. The region's traditional dress is influenced by local culture, topography, and weather. Hunzas are also known for their distinctive clothing.

**Men's Dress:** In the summer, men wear shalwar kameez, woollen robes with long or short sleeves, and several types of woollen caps, while in the winter, men wear a loose gown as an overcoat known as a '**Shuqaa,**' which they regard as an honour.

**Women's Dress:**

The traditional cap is the most elegant feature of a woman's outfit. Caps of several sorts are used. The lovely embroidered Iraghi cap with the traditional piece of jewellery called silsila is the most popular cap. Embroidery and stitching are widespread in hunza, and glasswork is important in women's clothing.

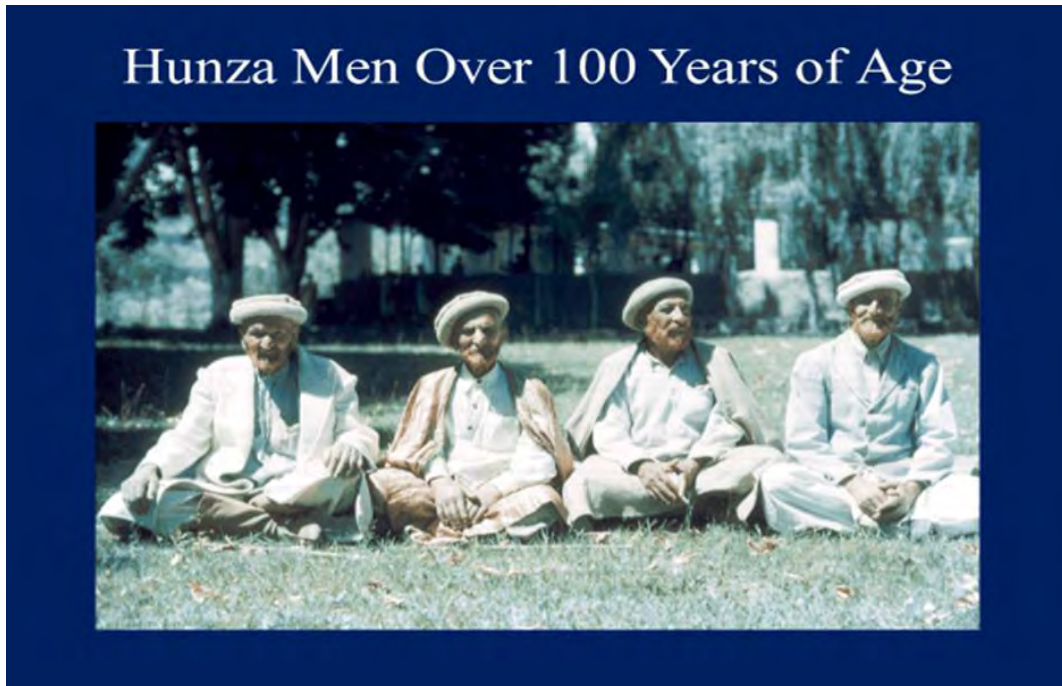
**2.16. Education:**

Hunza's residents are well-educated. The literacy rate in the area is over 98%, and the

majority of the kids in the area move abroad for their further education. Because of its excellent literacy rate and school enrollment figures, Hunza has been called the role model for Pakistan. Almost every Hunza's youngster nowadays has had at least a high school education.

## LITERATURE REVIEW

A person's life expectancy is a quantitative assessment of how long they can expect to live based on their birth year, present age and other demographic parameters. Hunza people have been characterised as the world's healthiest and oldest living people for many years.



Source: *google*

Many trips to Hunza took place during the 20<sup>th</sup> century, some of which were covered in National Geographic magazine. Sir Robert McCarrison, a renowned British physician and nutrition researcher, was the first to perform scientific studies on the Hunzas and their cuisine in the 1920s, because it was believed that the diet and their daily routine was the reason behind their longevity. Sir Robert McCarrison spent many years at Hunza and claims that the people of Hunza have a very high life expectancy and during his time in Hunza he couldn't come across a single person who's been diagnosed with cancer, stomach ulcers, appendicitis, or any other disease. Sir Robert McCarrison devised a series of tests to see how important a Hunza's food is to their overall health and lifespan. The Hunza diet was fed to 1189 albino rats

from birth in the first experiment. This included whole grain flatbread with a pat of fresh butter, homegrown beans, raw carrots and cabbage, unboiled whole milk, and a small bit of meat and bones once a week. There was plenty of water for drinking and bathing. The rats were given this diet for 27 months, which itself is around 45 human years. The rats were subsequently killed and meticulously inspected. Surprisingly, no signs of sickness were discovered.

Dr. McCarrison replicated the low-quality food of an impoverished rural region of India in his laboratory as a follow-up to his earlier experiment. 2243 rats were fed a diet low in vitamins, minerals, and other critical nutrients throughout this larger-scale experiment. Diseases were discovered in every organ of the rats as a result of this group's investigation. Dr. McCarrison's most distressing discovery came in a later experiment in which he went out to see how rats would respond to the poorer classes of England's diet. White bread, margarine, sweetened tea, boiled vegetables, and cheap canned meats and jams were on the menu. Not only did the rats not prosper physically on this diet, but they also acquired neurological abnormalities before things got even worse. The doctor writes, "They were nervous" and choose to bite their companions. They lived in unhappiness together, and by the 16th day of the experiment, they had started to kill and consume the weaker members of the group. (Wrench G.T, 2006)

Dr. Alexander Leaf, a Harvard physician and longevity researcher, wrote about his journey and research in Hunza in National Geographic Magazine in 1973. "I had the definite impression of an unusual number of very vigorous old folk clambering over the steep slopes that make up this mountainous land. It was the fitness of many of the elderly rather than their extreme ages that impressed me." In hunza i have also seen people's physical activeness even in the age of 70 and 80 plus. Dr. Leaf discovered that the average Hunza diet gets its protein and fat calories primarily from plant sources after studying the Hunza diet. He claimed that hunza's diet consisted primarily of complex carbohydrates derived from unrefined whole grains and other nutritious plant items. He discovered that meat and dairy items made up only 12% of the total. Animal fats are scarce; therefore, apricot seed oil is widely used for a variety of applications, including culinary, traditional medicine, and natural cosmetics. It is

a perfect addition to every salad and can be used as an oil for cooking all kinds of foods, from soups to meats and vegetables. As a cosmetic, this kernel oil is used to nourish the face, dry skin and hair. Its benefits are due to the minerals and vitamins present in its compound. In hunza tribe traditional medicine the apricot kernel oil treats pulmonary and heart diseases and relieves chronic pain. Dr. Leaf came to the conclusion that the Hunza diet would delay the onset of atherosclerosis, or the fatty degeneration of the heart's arteries. (Leaf, 1973)

Another scientist, Dr Henry Coanda, lived in Hunza and researched about the glacial water that is used by the Hunza people for drinking and bathing. He carried out deep research and wrote a book on the Hunza water where he described several reasons for the longevity of the tribe.

He explained that water freezes at a lower temperature in regions like hunza land and has different flow properties than in other areas. He discovered that the lower the freezing point of water in a given place, the greater the life expectancy of the people who lived there. Minerals and salts present in that water affects the freezing point. According to Dr. Coanda, the water in Hunza Land held the secret to health and longevity. He recommended that we all live to be at least 120 to 125 years old and in good health. We should not die in a situation of decrepitude, where our minds, memories, and physiological functions have all failed us. So he informed Dr. Patrick his findings and told him that one day he would develop the equivalent of hunza water and offer it to the world. He then gave Dr. Patrick his 60 years of research and began his search for the fountain of youth. (Patrick, 1994)

There are many other anthropologists who worked on longevity, as Dr. Sula Benet, who was the professor emeritus of anthropology at Hunter College she has an authority on longevity and Eastern European culture. She wrote "How to Live to Be 100, The Lifestyle of the People of the Caucasus". J. I. Rodale, an American author, released a book called "The Healthy Hunzas" in 1948, claiming that the Hunza people were known for their longevity and numerous centenarians because they ate healthy organic foods such dried apricots and almonds and got lots of fresh air and exercise.

In his Prevention magazine, he frequently used them as examples of the benefits of living a healthy lifestyle. (Rodale, 1948)

According to a number of studies, some places have very high rates of nonagenarians and centenarians, or persons who live to reach 90 or 100 years old.

Dan Buettner (creator of blue zones LLC) began researching blue zones in 2004. When Buettner and a team of researchers studied the people of Blue Zones, they discovered that they all share a set of lifestyle practices known as "The Power 9." These characteristics, which include mentality, community connections, food, and exercise routines, could be the key to health and longevity. The power nine principles are as follows:

- **Move Naturally:**

People who live in the Blue Zone are unlikely to engage in strenuous exercise or run marathons. Rather, they live lifestyles that include everyday movement as a normal part of their daily routine.

- **Purpose:**

It's known as "Ikigai" in Okinawa and "plan de vida" in Nicoya; both terms mean "why I wake up in the morning." Knowing your sense of purpose can extend your life by up to seven years. A significant Blue Zone quality is having a sense of purpose in life. According to a 2019 study, having a feeling of purpose is linked to a lower risk of mortality from any cause. People who have a strong sense of purpose have better physical health.

- **Down shift:**

Chronic stress has a negative impact on our health. While it is nearly impossible to live a stress-free existence, it is critical to learn how to manage stress so that it does not cause serious physical or mental health problems. Blue Zone residents have stress-relieving habits, such as Okinawans remembering their ancestors for a few moments each day, Adventists praying, Ikarians napping, and Sardinians doing happy hour.

- **80% Rule:**



The 2500-year-old Okinawan Confucian mantra "Hara hachi bu" is recited before meals to remind individuals to stop eating when their bellies are 80 percent full. The 20% difference between not being hungry and feeling full could determine whether you lose or gain weight. The Blue Zones consume their smallest meals in the late afternoon or early evening, and then don't eat anything again for the remaining of the day.

- **Plant-Based Diet:**

Researchers discovered that people in Blue Zones eat mostly plant-based diets, with beans and legumes providing the majority of their protein. While they may consume some meat, it is normally in modest amounts and just once a week.

- **Drink Wine in Moderation:**

People who drink alcohol in balance have a lower risk of dying young, according to research. Except for the seventh-day "Adventists," everyone in the Blue Zones consumes alcohol in moderation and on a regular basis. Non-drinkers outlast moderate drinkers. The key is to consume 1-2 glasses of wine per day.

- **Belong:**

The last three Blue Zone habits are based on social relationships and community. Residents of the Blue Zone are almost always members of a faith-based community. Attending religious services has been linked to a longer lifespan in studies. It doesn't appear to matter that what religion or denomination you are. All but 5 of the 263 centenarians we spoke with were members of a faith-based organization.

- **Loved Ones First:**

In the Blue Zones, successful centenarians always prioritise their families. This entails keeping elderly parents and grandparents close by or at home (It lowers disease and mortality rates of children in the home too.). They commit to a life partner (which can add up to three years to their life expectancy) and invest time and affection in their children. When the time comes, they believe they'll be more likely to look after you.

- **Right Tribe:**

Okinawans developed "moais," or groups of five friends who committed to each other for life, since they chose or were born into social circles that fostered healthy

practises. According to the Framingham Studies, smoking, obesity, happiness, and even loneliness are all contagious. As a result, long-lived people's social networks have changed their health practises in a positive way.

As the Blue Zones data shows, boosting your health and lengthening your life does not have to be difficult. If we are proactive in implementing more of the Power 9 habits into our daily routines, we can begin to reap the advantages of improved health and happiness as well. (Zones, 2004)

Researchers discovered that the small, sandy, and mountainous island of Sardinia has roughly ten times the number of centenarians per capita as the United States. They dubbed it the world's first blue zone, a place or region where people live substantially longer than the average. Dr. Giovanni Pes, a demographer and physician, discovered exceptionally low mortality rates and long-life expectancies in many villages in central Sardinia in the early 2000s. Another researcher, Luigi Corda, author of "100 X 100: The Twentieth Century Through Portraits of a Hundred Sardinian Centenarians," spent about two years photographing and interviewing centenarians in the Barbagia, Ogliastra, Trexenta, and Middle Campidano regions, where he witnessed the importance of family. (Corda, 20<sup>th</sup> century)

"Family has a fundamental role in the possibility of living such a long life," he wrote in his book. "The fact of still feeling important, being the center of attention and head of a family, makes them active and gives them the strength to move ahead, underlying the importance of the family, in addition to genetic aspects, diet and religion. He also noted that all of the centenarians he met were in excellent health, do not take much if any medication and are astonishingly lucid. "They frequently read without spectacles and continue to do what they have always done," he stated. According to psychologist "Paul Hitchcott" of the University of Caligari, the senior population in central Sardinia "is highly remarkable in that they have very low levels of depressive symptoms." He's also a member of a group studying the minds of Sardinian centenarians. They have "a resilience to the regular knocks that older people have later in life," while not living calm rural lives. Sardinia is characterized as a low-income island with endemic sickness and a "not-exceptional health state," according

to Pes. Residents have been able to cope with hardships in their older years because of their close relationships, he said.

According to Hitchcott's research, older adults in this area have stronger working memory than those in Northern Italy. "Because they were more involved in activities, they were less sedentary, more physical activities; these aspects all together promote well-being, physical and psychological".

The Japanese islands of Okinawa are likewise known for their lengthy life spans. Craig Willcox, a professor in the department of health and gerontology at Okinawa International University and a co-principal investigator of the Okinawa Centenarian Study, which has been examining Okinawan longevity since 1975, says that a lot of research has been done on them. In his research he said that "About two-thirds of longevity is related to diet and way of life, the rest is genetics. Generally speaking, you need the genetic rocket booster if you want to get into the hundreds, not just a good diet," Willcox says. "We haven't looked into whether or not Okinawa has a genetic advantage over other parts of Japan, but longevity does run in families here." In terms of preventing against cancer and cardiovascular disease, the Okinawan diet provides more than five servings of fruits and vegetables per day and contains more heart-healthy fish than meat, according to Willcox.

He mentions the Okinawan phrase "nuchi gusui," which translates to "let food be your remedy." "Anti-aging foods in the diet include sweet potatoes, bitter melon, carotenoid-rich marine foods like seaweeds, green leafy vegetables, and fruit, which lower inflammation and oxidative stress." "The traditional Okinawan diet is likewise nutritionally dense but low in calories, which is excellent," Willcox writes, noting that sweet potato was the staple in Okinawa until the 1960s, rather than white rice.

(Sho. H. 2001)

In 1975, "Dr. Makoto Suzuki" conducted another study on Okinawa Centenarians, in which over 1,000 100-year-olds were researched in order to better understand the genetic and environmental lifestyle variables that contribute to good ageing. Clean arteries and low cholesterol; low risk of hormone-dependent cancer, with 80 percent less breast and prostate cancer than North Americans; strong bones, with half the risk

of hip fractures as North Americans; lean and fit bodies; and remarkable mental clarity were among the findings shared in their 2001 book. (Suzuki, 1975)

Ikaria, Greece's gorgeous distant island, has also been identified as one of the world's healthiest places and a site of outstanding lifespan. The University of Athens conducted a "Ikarian study" in this region, during which one of its researchers, Dr Christina Chrysohoou, a cardiologist at the university's medical school, discovered that the Ikarian diet is high in beans and low in meat and refined sugar. Locals also eat potatoes and goat's milk, as well as locally grown and wild greens, some of which contain 10 times more antioxidants than red wine. Chrysohoou believes the diet is different from that eaten on other Greek islands where people live shorter lives. "Ikarians' diet may have some differences from other islands' diets," she says. "The Ikarians drink a lot of herb tea and small quantities of coffee; daily calorie consumption is not high. Ikaria is still an isolated island, without tourists, which means that, especially in the villages in the north, where the highest longevity rates have been recorded, life is largely unaffected by the westernized way of living." (Chrysochoou, 2008)

### **3. RESEARCH METHODOLOGY**

The current chapter, research technique, aids in comprehending the full study procedure. There are several approaches for conducting research. To choose cases, measure and monitor social life, gather and refine data, analyze data, and report on results, a study employs a range of methodologies. Methodology and method are inextricably related and interdependent. (Neuman, 2014).

The present chapter, research technique, assists in understanding the entire research procedure. There are many other methods for conducting a study. It is on three premises. Initially, since reality exists outside, one must use a specific lens to identify it. Moreover, direct observation is the greatest way to determine the precise reality and finally, material justifications are sufficient for observable happenings. The purpose of this chapter is to offer a comprehensive overview of the current topic. The study's approach, whether deductive or inductive, is determined by the nature of the research issue. The researcher employed qualitative methods to address this question. So, in the anthropology field, there are several ways that the researcher uses in order to get legitimate data.

The term "research methodology" refers to a collection of methods and processes for analyzing, identifying, selecting and processing a topic. Data. Research methodology is the precise procedure by which the researcher thoroughly solves his or her problem, whereas research methods are all the tools and methodologies used to perform the study. The ultimate goals of research are to pose questions and find solutions to them. Other aims, which researchers strive for, are nestled inside these goals. We need to find some measures to limit what we are aiming to do since no one can ask all the questions and no one can find answers to even a single question. Exploration, description, explanation, and action are the immediate goals of research. They provide us with a framework for determining which questions to ask and which answers to seek.

Research methodology provides reasoning and logic that how the procedures, methods and techniques are used to identify, obtain, and explain data to understand

the research problems. It explains how a research is conducted and includes the tools and techniques used to collect information. I will also employ some anthropological research tools to carry out my research.

### **3.1. Qualitative Methodology**

This approach is utilized to gain an in-depth insight of the respondent's hidden perspectives. The primary reason for picking this qualitative approach is the research's distinctiveness. It is Preferable and most beneficial to have a deeper grasp of any occurrence. This is useful for gaining an emic viewpoint and uncovering the hidden reality behind human behavior. Because it is based on reality, it is referred to as unstructured and unplanned study. As part of an in-depth interview, I intended to unearth the truth and explain occurrences based on first-hand facts. In qualitative technique, this method is well-known. Qualitative approach is critical for analyzing first-hand data in a socio-cultural situation. This practice aids in making reality evident to both the investigator and the reader. (Neuman, 2014).

### **3.2. Rapport Building**

In Anthropology, the most successful approach for making relationships and revealing hidden truths about a topic is rapport building. The contact between the researcher and the respondent is considered formal if this tool is not used. Respondent is wary of the researcher since he or she is an outsider with whom he or she has not developed rapport. (Neuman, 2014; Thomas, 2006).

It is one of the basic steps and most important technique of anthropological research that involve the ability to build a relationship of trust and understanding by interaction with people. It is researcher ethics to build rapport and break the ice after being involved in the observation or population so that they can make it easy for the respondent to give information to the researcher easily. It will help the researcher to reveal hidden experiences of people and make effective communication without difficulties. After defining the questions related to research, qualitative research starts with rapport building. It is just like putting yourself in the shoes of other people in order to feel and think the way sample of your research my feel and think. If you

want to dip in the environment of others its essential to first develop rapport, so people will permit you to enter in their life settings. (Nancy, 2006). When I started my fieldwork, I focused on rapport building with my respondents. Initially I faced a lot of difficulties due to the respondent's unfamiliarity with research. The respondents were first doubtful of the study that I was supposed to do, but after several visits and requests for interviews, I have learned that how to convince respondents for detailed interview. To acquire useful data, the researcher worked hard to establish a rapport and I have spent one weeks for establishing rapport.

### **3.3. Participant Observation**

In anthropology, participant observation is referred to as the fieldwork technique. It is a type of approach used by anthropologists. It is utilized in current research to observe people's actions. This approach can be used at many phases of an evaluation. To begin, identify the problem in order to uncover it and then evaluate it since things are witnessed directly.

“Through participant observation, the information about people can be easily observed and record. This method can be applied by making people agreeable. It is the substratum of cultural anthropology.” (Bernard, 2006)

Participant observation is an essential method of social research but an indispensable tool of qualitative research. It means observing people from inside by living with them for long period of time to get detailed information about their daily life experiences and events by face to face interaction and communication with people in a natural setting. I was also be participant observer in some different daily life settings and spent time with the families to properly understand their dietary habits and lifestyle. First of all I tried to observe the daily routine of people from dawn to dusk that what type of activities they undergo the whole day then I observe their diet that what type of food they are consuming after all that, I tried to communicate with them.

### **3.4. Sampling Procedure**

The findings of research are influenced by the sample size of a study. The method of extracting a sample from a population is known as sampling. The sampling procedure refers to the various approaches used to narrow down the population. To draw a sample from the population in this study, systematic random sampling will be used.

My sample size was 28 and I utilized purposive and snowball sampling because the respondents are chosen based on the researcher's judgment, purposive sampling is also known as judgmental sampling. I chose those respondents who were more appropriate for my study. I cannot study a whole population without using a community sample, so I must use a community sample, which is the process of selecting and choosing some respondents from the target population. It is difficult to interview the whole locale, so I conduct it in a smaller group to find out the data for my research. I choose my respondents on the behalf of age because my focus was on age longevity and its factors.

### **3.5. Key informants**

When researcher travelled to the field for my research, the first thing researcher did was look for an important informant. A key informant is a source of foundational knowledge about the field and community in which a researcher is conducting research. Key informants are those who have a lot of expertise about a particular society and can help the researcher investigate the responses. A key informant is basically a well-informed source of information.

Researcher's key informant was one of my friend's cousins, she was running an old age home in Hunza. She made me visit there, which helps me a lot to find appropriate respondents.

### **3.6. Semi structure interview**

During the research, in-depth interviews were done. For the goal of genuine and accurate data, the researcher considered in-depth interviews. These interviews were quite important to this researcher and he divided them into two categories. The researcher conducted a semi-structured interview in the first phase. The researcher



conducted these interviews with the use of a semi-structured interview guide. In the initial portion of the interviews, the researcher asked simple questions.

### **3.7. Fully structured Interviews**

The researcher chose fully organized interviews after doing partially structured interviews. The researcher employed a properly organized interview guide and thoroughly investigated all 28 respondents with the use of that interview guide. Fully structured interviews provided detailed information.

### **3.8. Tools For Data Collection**

To collect data, the researcher uses a variety of tools and techniques. (Creswell, 2007)

Every researcher should have data collection methods. These methods must be relevant and capable of collecting data that will help you reach your goals. Interviews, observation and focus group discussions were all used in this study, which was semi-structured and completely structured. The data gathering methods have been explored in depth below. I have used following different tools to deeply understand the reasons and factors affecting the age longevity of Hunza people.

#### **3.8.1. In-depth Interviews**

“An In-depth interview is comprised of free and a comfortable environment so that complete and detailed information is obtained” (Boyce & Neale, 2006). I used this strategy to get information about the topic. In-depth interviews using open-ended questions try to capture the respondent's intellectual and practical environment. Individual interviews allow participants to share their feelings on the issue. Prior to the interviews, I created a semi-structured questionnaire. There was open-ended interview guide created. To prevent becoming sidetracked, researcher utilized various strategies to get back on track. Before and during the interview, the researcher established rapport in order to obtain accurate and dependable information.

It is one of the methods used in qualitative research which includes detailed and in-depth interviews with a small number of people to completely explore the beliefs, attitudes, and behaviors of respondents. These are usually conducted on face to face

communication by using open-ended and flexible response questions in which the researcher speaks less and listens carefully. So, a guided and positive rapport can be built between the researcher and the respondents. The researcher observes and understands the verbal and non-verbal i.e. body language, gesture information provided by respondents.

### **3.8.2. Photography**

Photography is used to support field research. (Neuman, 2014). It is an important tool that gives readers a better grasp of the surrounds, environment and physical atmosphere of the location. It also aids in the creation of an image in the minds of the readers in order to keep them properly informed of the location. During my fieldwork, I photographed their local foods and the food which they consumed daily but none of my respondents were allowed me to take their photos.

### **3.8.3. Informal Discussions**

Informal discussion is a part of participant observation that involves relaxed and unpretentious conversation. It allows people to talk openly.

Interviews are the fundamental tool of qualitative research. Informal interviews are more necessarily used in the disciplines of social sciences such as Anthropology and Sociology. During an informal interview, open-ended questions are asked to access the personal beliefs and attitudes of people. They do not require specific time and place. Informal interviews are based on free and daily life discussions. I have also conducted informal interviews to reveal the true nature of their everyday life.

## **3.9. Case Study Method**

The case study approach is a prominent type of qualitative analysis that entails observing a social unit, such as a family, an institution, a cultural group, or even an entire community, in detail. It is a method of in-depth research. The researcher might use this method to analyse a single social unit or a group of them; he can even study a situation in general. The case study emphasises a thorough examination of a small number of events or conditions, as well as their interrelationships. It is a method

entails few or limited individuals to probe the past experiences, conditions and social problems. It is used as a resilient technique (Zainal, 2007). Case study method is the reconstruction of one's past life experiences that provide in-depth and detailed insight as well as the real causes of behavior and problems. It is suitable for the investigation of complex situations.

### **3.10. Focus Group Discussion**

“A type of focused interviews used to apprehend the perception and viewpoints of people in a small group through discussion by a researcher”. (Marczak & Sewell, 2018) It is another significant tool of anthropological research to gather information about a specific issue or topic and beliefs of people through discussion. It is conducted in a group of 7-10 people that fulfill the criteria of research questions and objectives. It helps the researcher to explore the opinions, worldviews, perspectives and ideologies of people. I have also conducted the focus group discussion in my research because an individual answer differently to particular queries in person, and answer differently in group discussion. There is difference in both responses from same individual, and I used this technique to find that difference.

### **3.11. Audio Recording**

Audio recording is one of the noteworthy methods used in qualitative research. By using Audio recording method instead of writing notes during interviews will ensure the holistic picture because if a researcher records the whole interview, he/she will be able to concentrate properly and collect non-verbal data. It also avoids interruption during interviews. Some respondents refused to have their interviews recorded, therefore instead of recording them on tape, the researcher wrote them down in his daily diary. As a social researcher, I have also employed this method during my interviews and focus group discussions after taking permission from my respondents.

### **3.12. Interview Guide**

It is the method to transfer the ideas of research questions to interviews. Before Interviewing it is necessary to prepare a plan to direct the ideas related to the study

for the fulfillment of a successful conversation between the interviewer and interviewee. I've also developed an interview guide with questions linked to my research as well as some general inquiries about their age, nutrition, and daily routine. I've created questions for them that are clear, meaningful, and understandable.

### **3.13. Data presentation**

The deductive approach and the inductive approach are the two primary ways to interpreting qualitative data. Deductive techniques entail analyzing data using a structure or planned framework. In essence, the researcher applies their own structure or beliefs to the data before analyzing the interview transcripts. Although this method is quick and straightforward, it is strict and has the potential to distort the entire analytic process because the coding framework has been decided in advance, which can severely limit the development of themes and theories. Inductive analysis, on the other hand, involves examining data with little or no predetermined theory, structure, or framework and depending on the data to determine the structure of analysis. This technique is lengthy and time-consuming, and it works best when little or no information on the phenomena under investigation is available. Inductive analysis is the most often used method for examining qualitative data.

### **3.14. Informed consent**

Informed consent has long been recognized as a critical component of ethical research in a range of fields. It is crucial for qualitative researchers to determine which data will be collected and how they will be used ahead of time. The concept of informed consent emphasizes the researcher's responsibility to properly inform participants about all aspects of the study in plain language. The nature of the study, the possibility of participant involvement, the researcher's and funding organization's identification, the research objective, and how the findings will be published and used are all subjects that must be addressed in the explanations. In the current study, before conducting the interview, the researcher obtained permission from the respondents and also told them about myself and why the researcher is conducting this study and what is the purpose of this study? The researcher also obtained permission before

recording the conversation and taking any photographs. If they approved it, the researcher also requested for permission to visit their home. All sorts of study require informed permission. It is a vital idea that must be remembered at all times. Participation in research must be entirely voluntary. This is referred to as the concept of voluntary consent. (Richards & Schwartz, 2002).

### **3.15. Anonymity and Confidentiality**

Large volumes of detailed personal information are gathered in qualitative research. Not only are there practical hurdles to obscuring this information, but certain contextual data is frequently required for analysis. (Richards & Schwartz, 2002). Before adding their personal information, the researcher must obtain consent from the respondents. The researcher is not permitted to communicate their sensitive knowledge with anybody else.

## **4. REASONS OF THEIR AGE LONGEVITY**

The word longevity means living for a long time. It is sometimes used as an alternative word for "life expectancy" in demography. The topic in which I have researched is the life expectancy of Hunza people that how and why they lived for so long. Many people believe that genetics play a major influence in determining life expectancy, although genetics have a far lower role than most people believe. Environmental factors such as diet, lifestyle, and daily routine have been discovered to be the primary causes. It's true because when I went to Hunza, people told me the same things that the reason of their high life expectancy is due to their healthy lifestyle and daily routine. I interviewed many people in hunza and got to know a lot of new information. When I asked one of my respondent his name was Altaf Hussain with the age of 89 and he was still active and healthy. After asking, He claims that they get up and go to bed early, participate in a variety of outdoor activities, and that all men and women work together in the fields, where they get plenty of exercise all day. He was claiming that 70% of the population is vegetarian, and that the majority of their protein derives from plant sources such as beans and grains. They naturally live a very healthy lifestyle because we know that hunza people live at very high altitude which means they breathe fresh and clean air and the water they drink is mineralized which comes directly from glaciers enriched with minerals like potassium, calcium, iron, etc that are essential for the body and somewhat explain the anti-ageing of the Hunza people, other than these they have a lot of physical activities as they have to walk 3, 4 miles a day and going on long hikes in rough, mountainous terrain on a daily basis which keeps them physically and mentally fit and healthy. They also eat fresh fruits like as apples, apricots, mulberries, cherries, peaches, and other fruits that they have grown themselves, and apricots, both fresh and dried, are the predominant fruit in their diet, which they believe is the key to their legendary health and longevity. They eat a fully organic food and don't buy even a single thing from outside this is the reason they don't get sick and live a happy life.

### **4.1. Natural and Organic diet of Hunza's People**

In Hunza, researcher have seen many people with the age of 90 years and above are physically and mentally healthy. It is believed that the secret of this life is associated with their lifestyle, natural environment and dietary habits. Their diet is rich in vegetables, fruits, raw foods and pure water etc and all these healthy foods make them stronger to fight against many diseases therefore they live a very healthy and innocuous life.

Some of the hunza diets are as follows;

#### **4.1.1. Hunza Bread**

Hunza bread which is also known as **Chupati or phitti**. It is a type of leavened bread made by the People of Hunza. The process of making this bread involves mixing flour with water, salt, butter and yeast. Other ingredients such as milk can be added depending on personal taste. The dough thus prepared is placed in a metallic container called a **Khimishdon** in Burushaski and placed in a hearth which is heated with a wooden fire. They can also use oven for making phitti. One of my respondent named as Sherbaz Ahmed also told me about this protein millet bread, he said that his whole family eat chupati with butter during breakfast or as a snack or light lunch along with a salted cup of tea. Chupati is their traditional meal and they eat it at almost every day.

#### **4.1.2. Vegetable and fruit consumption**

The ingestion of vegetables and fruits are very high among the Hunzakuts. They eat what they grow at their farms and home. When I interviewed people over there many of my respondents said that they eat plenty of fruits which include apples, cherries, mulberries, pears, peaches and apricots. They eat Apricots both fresh and dried and the seeds inside them are a main staple in the Hunza diet and the vegetables they eat include leafy greens, squash, carrots, turnips which are rich in antioxidants and all these fruits and vegetables are home grown they don't buy even a single thing from outside. They said in summers, they eat whatever vegetables and fruits ripen and in winter same these all but dry. The people of hunza eat a large quantity of organic fruits and vegetables and these are thought to be a major reason for their legendary

health and longevity. In hunza 70% of the people eat a vegetarian diet. The vegetables they eat are raw with their skins and are usually lightly steamed. These healthy foods make them strong both internally and externally.

#### **4.1.3. Fresh water**

There are many factors which can be the reason of longevity of hunzakutz but the majority of the researches done on this population comes down to Hunza water. The pure water which hunza people drink comes directly from the glacial streams found in the high Himalayas which contain minerals like potassium, calcium, iron and many other useful minerals. As these minerals comes from natural sources so they act as natural mediators which makes them healthy. However, Hunza water has some facts to back up its anti-aging claims. One of my respondent also told me about this that they mostly consumed meltwaters which flowing down from the snow covered mountains instead of spring water because it is relatively unpolluted, fresh and rich in minerals. She further said that they use this water for growing vegetables and fruits in their farms and gardens. Due to the high quality of pure water, it adds to everything eatable in Hunza.

In 1963, Dr Patrick Flanagan was consulting for the United States Pentagon when he met the Father of Fluid Dynamics, Dr Henri Coanda.

“Water is the most vital thing you put in your body, but not all water is equal” said the legendary Romanian scientist as he told Dr Flanagan about his search for the Fountain of Youth for the past 60 years.

He had been studying the five mountainous regions in the world where people normally lived healthy and productive life for over 100 years, he said that while their diets were different, the one thing they had in common was form of water they drink. One such region was Hunza land located in the northern areas of Pakistan, where the water contained certain silicate minerals that originate from the surrounding glacial mountains and the people over there drink this glacial water which contains all those minerals. Taking over the research, Dr Flanagan found that these minerals gave the Hunza water irregular properties, for example, a lower surface tension and freezing



point. Other characteristics include a high zeta potential, regular colloids, minerals and interesting small silica. The Hunza water is significantly connected with the water surrounding our cells, bringing about better cell hydration and nutrient absorption for the people who consume it.

#### **4.1.4. High amount of fish consumption**

As we know that a diet which is rich in fish consumption predicts a longer life, may be therefore the people of hunza also lives a long and healthy life because the intake of fish is high among hunzakutz and consuming a fish has also been suggested as part of a nutritious diet. As it is rich in high-quality proteins, vitamins and healthful oils. Fish is completely considered a healthful choice. When I asked questions about their age longevity one of my respondent named as Mohammad Ali with the age of 81 told me that apart from the consumption of organic or plant based food they eat large amount of fish in their diet atleast 2 or 3 times in a week because consuming a daily portion of fish is healthy.

He was saying that he isn't belong to any sea side but the river of hunza which later become get mixed into the Indus River is the source of fish for them and sometimes they ordered it from District Ghizer. Because the trout fish of Ghizer is very famous among Gilgit. As we know that fish oils are rich in omega-3 and over recent years this oil has received a great amount of attention from medical researchers and supplement manufacturers. It is said that fish also has a role in the longevity of life because people with the highest levels of omega-3s reduced their overall risk of death especially cardiovascular death by up to 27% compared to those with the lowest levels. He said that this can also be the reason of their higher life expectancy than other cities.

#### **4.1.5. Less meat consumption**

As we know that Hunza people mostly prefer a plant-based diet and the consumption of meat is very low among them. When I interviewed people over there, one of my respondent named as Nadia Hussain told me about the things which my previous

respondents have already mentioned but one thing I believe is different that is 'dry meat'.

She was saying that normally they eat a less amount of meat because they mostly eat a vegetarian diet but in winters they slaughter animals like yak, cows, sheep's and goats or make pieces of their meat and hang them in an airy, cold room for almost 2 to 3 months until its fully dry and this dried meat which they call '**NASALO**' is then use in whole winters and it's a traditional dish of hunzakuts and a part of their culture.

There are so many benefits of Nasalo. For instance eating a dry meat is very good in protein digestibility, an important contribution of minerals and vitamins. Vitamins include B3, B6, B9 and B12 that plays an important role in the metabolism of carbohydrates, proteins and lipids as well as in the restoration of our cells and which have a major impact on our nervous system.

#### **4.1.6. Use of apricots both dried and fresh**

In Hunza, we have seen that their diet is highly plant-based, especially focused on the use of nuts of different types. They eat a lot of fruits every day, especially apricots, both fresh and dried, as well as the kernels inside. The Hunza Valley is filled with lots of different species of apricot trees and the sweetness of the apricots found in Hunza is extraordinary.

When I asked my respondent about the use of apricots, she was saying that she along with her whole family starts a day with fresh juice of apricots which they call '**CHAMUS**' is rich in vitamin b17 and she said it's the healthiest drink she have daily in the morning. Her whole family consumes plenty of apricot juice as a result, they are immune to all diseases, even cancer. Because the vitamin B17 also known as amygdalin found in apricot seeds. Apart from eating apricots she further stated that they used to squeeze oil from walnuts and almonds and this organic oil then they used for their skin, hair, cooking and even they take a sip of it at night especially in winters to keep themselves warm and also, it's very beneficial for the healthy immune system. On some research I found that walnut oil is very good for diabetes. After squeezing the oil out, the remaining thing which they call "**PINO**" which is actually

like a scrub, they apply this scrub to their face which exfoliates all the dead skin and makes the skin glow.

There are numerous health benefits of consuming apricots because they are rich in fiber, Vitamins A, C, E as well as Potassium.

Apricots are consumed in various forms during all four seasons in the Hunza Valley. During summers, fresh apricots are eaten as a snack as well as apricot juice is their common everyday drink. In the months of July and August, the people of Hunza sun-dries the apricots on the roof of their houses while separating the seeds to be used up separately. The dried apricots are then eaten during winter and spring seasons along with the apricot seeds. Some of the seeds are used to make the apricot kernel oil which is the sacred goal of the Hunza cuisine. They used this oil for cooking as well.

#### **4.2. Impact of environment on longevity**

Hunza Valley is one of Pakistan's most beautiful northern regions, with snow-capped mountains and lush flora. The attraction of this lovely valley is well-known. The residents of this region are exceedingly kind and welcoming. Burushaski, Wakhi, and Shina are the languages they speak most commonly, but they also comprehend the national language.

As we all know, the Hunza Valley is recognised all over the world for the long-term survival of its inhabitants. Many studies have been conducted in order to uncover the top secret behind these people's long lives. Many researchers believe that it is just because of the pure and healthy diet they consume that they are able to retain their health and lifespan, but their fresh and natural environment could also be a factor. It is of global importance to improve human health and longevity. The environment, genetics, and stochastic circumstances are all elements that determine people's longevity. Among all of these, the environment is critical. To learn more about the relationship between the environment and longevity, I researched the atmosphere of Hunza in depth to discover the true reason why its residents enjoy such long lifespans. I found that Hunza people naturally live a very healthy environment because they lived at a very high altitude which means that they breathe fresh and clean air, there

is not any type of pollution because there is no such factories, bad traffic found in hunza valley. The water that they drink is mineralized which comes directly from glaciers and they also make herbal tea from boiled glacier water and a herb called **Tumuru** which is very beneficial for high blood pressure and weight loss. This glacial water contains minerals like potassium, calcium, iron and many other useful minerals other than these they have a lot of physical activities as they have to walk 3,4 miles a day and going on long hikes in rough, mountainous terrain on a daily basis. Which keeps them physically and mentally fit and healthy. When I asked questions about their environment and lifestyle, one of my respondent named as Aziz from Ganish hunza with the age of 79 years old. On asking he told me about one of the secret of healthy people of Hunza that unlike other citizens they are mentally healthy, they don't really care about the finances and materialistic things and are not depressed at all. That's so true we can literally see this on their faces, No worries just happy people, sharing their happiness. One thing that I noticed in Hunza that there was not even a single patient in hospitals, Mr. Aziz said that they don't really get sick because of being mentally and physically healthy. The fresh environment keeps them fit he told me one of the healthy lifestyle practices of the people of Hunza is that they sleep and wakeup early and the plenty of fruits they eat. Especially during the summer season. Most of the people have apricots, mulberry, cherry, apple, peaches and pear trees right outside their houses. They pick fresh organic fruits and eat them up right from the trees. These are the factors hunza people live happily and healthy long life.

### **4.3. How long do hunza people live**

As we all know that Hunza people are mostly famous for their high life expectancy and the Centre of attraction for many people and researchers around the world. The world is full of mysteries and one of them is the longevity of Hunza people, a tribe which lives on the Himalayan high lands. J. I. Rodale, a proponent of healthy living, wrote “The Healthy Hunzas” in 1948, claiming that the Hunzas, who are known for their longevity and many centenarians, lived long lives because they ate healthy organic foods like vegetables, less meat, dried apricots, and almonds, and got plenty of fresh air and exercise. It is one of the most mysterious tribes on earth who lived

the happiest and healthiest life with an average life span of 100 years and more than that. It's true because when i went to hunza I have seen people with the age of 80, 90 plus, on asking about the reason of this longevity and physical activeness one of my respondents said that the main reason of their high life expectancy is their pure organic food, glacier water and simple lifestyle. She told me that she has a very healthy diet, the food she consumes is rich of proteins, vitamins and nutrients etc. she said she never eat anything from outside she always prefers home-cooked food which is fully organic and self-grown. she told me about her husband that he's 83 years old and he don't have any disease till now because he has the same healthy diet and routine as mine. She further stated that even in this age we work together in the fields, growing fruits of our own and we also have 2 goats and 1 cow from which we get fresh milk and make yoghurt and ghee from that milk which we use in our meals and we eat fruits a lot especially apricot because apricot and its seeds are very essential for prevention of many diseases especially cancer. I have seen that the people of hunza rarely have any disease because of the intake of fresh fruits and healthy food and the outdoor works they do all day makes them even more fresh and fit due to which they live a healthy and long life.

Hunza has long been known as the home of another long-lived civilization. Hunza people have an average life expectancy of 100 years, however some have lived to be 120. I have interviewed more than 25 people in hunza and most of my respondents were above 75 and 80 and I was amazed to see their physical activeness because they were still very active and healthy even in this age. When I went to hunza I have seen many aged people who walk miles daily for working in their fields, carefully raising their organic food from which they get plenty of exercises all day long. This is the

reason they don't get sick and becomes healthy both mentally and physically.



**Source:** google

One of my respondent said that the life expectancy in their family is very high it is due to their vigorous lifestyle, daily routine and intake of natural food and the water they drink. Her father's age was 99 and mother was 90 and they were still alive. She said that we work together in the fields and grow our own vegetables and fruits. The veg's they eat include leafy greens, potatoes, carrots, turnips, squash etc. They eat raw vegetables with their skin and usually lightly steamed. She was saying Nuts provide them with all of their needed fatty acids. and apricot kernels and they made oil of that kernels(seeds) and use it daily like took 1,2 spoons before leaving for their work because it's very good for their immune system and also makes them strong due to which they do such hard things. They believed that their diet of raw, eating apricots and their seeds in their daily life and fresh food along with exercise is the key factor contributing to their long and healthy life-span.

## **5. CULTURAL AND SOCIETAL ASPECTS WITH RESPECT TO THEIR FOOD AND LIFESTYLE**

Culture is essentially our way of existence. Our values, beliefs, standards, languages, and traditions are all part of it. Our history, tradition, and the way we communicate our thoughts and creativity are all examples of culture. It is a group of people's qualities and knowledge, including language, religion, cuisine, social habits, food, what we eat, what we wear, how we wear it, our language, marriage, music, and what we believe is right or bad. It is all a part of our culture.

We know that Hunza has a unique culture and the people of hunza carry their culture with them where ever they go and this is one their strongest points. Almost every aspect of their life is influenced by their strong cultural values and traditions. We can see these cultural values being returned in their art, architecture, music, lifestyle, food, dressing and traditions like marriage, death and religion. The culture of hunza is one of the most captivating cultures of the world because it influences almost every single aspect of an individual's life. Apart from these, they are also famous for their high life expectancy from other areas of Pakistan this is all because of their unique lifestyle and diet.

As Hunza Valley is rich in culture and is known for its unique festivals which are held annually. These festivals are related to religion as well as tradition. In these festivals people from all over Hunza exhibit their hand made things, makes different traditional cuisines and people performed cultural dance and music which is also an important part of their culture. Eid and other religious festivals are also being celebrated throughout the valley. There are so many traditional festivals celebrated in Hunza some of which are as follows;

- Ginani festival
- Nowroz festival
- Spring blossom festival

### **5.1. Ginani Festival**

The traditional Ginani festival is an annual agricultural harvesting event held in the Hunza and Nagar valleys, with most of the festivities taking place in Altit, Baltit, and Aliabad. This celebration is held to provide joy and happiness to the new harvesting season. It takes place on the 21st of June which is the longest day of the year. On that day, Musicians from Altit fort played a melody which is called Hareep and people dance in it.

They cook wheat berries which they get from the harvested wheat plants and also make a special dish called '**Dirum Phitti**' which is also prepared to celebrate the occasion. Dirum phitti, the sprouted Wheat bread is a traditional dessert of Hunza and Nagar valley. It's created from expanded wheat flour and has a natural sweetness to it that's similar to maple syrup. It takes very little time to prepare if we cook in a traditional way. After eating desert they Offer prayers for the well-being of the whole community.

## **5.2. Nowroz Festival**

Nowroz is the traditional festival which is celebrated in all over Gilgit Baltistan especially in Hunza with full zeal and dedication every year on 21st March. At that day a special type of event held named as '**Da Da**' in which people make different kind of traditional cuisines such as Nasalu, bukak etc. Nasalu is basically a dry meat. Normally the people of hunza eat a less amount of meat because they mostly eat a vegetarian diet but in winters they slaughter animals like yak, cows, sheep's and goats or make pieces of their meat and hang them in an airy, cold room for almost 2 to 3 months until its fully dry and then use in whole winters and it's a traditional dish of hunzakuts and a part of their culture.

There are so many benefits of Nasalo. As it is very good in protein digestibility, an important contribution of minerals and vitamins. Vitamins include B3, B6, B9 and B12 that plays an vital role in the metabolism of carbohydrates, proteins and lipids as well as in the restoration of our cells and which have a major impact on our nervous system. The main objective of celebrating Nowruz is that we have to keep live our ancestor's old rituals and values.



### 5.3. Spring Blossom Festival

Spring blossom festival is started at the end of scorching winters which brings with itself a delightful aura of life and welcoming the spring season. Spring blossom is that time of the year when the buds break into flowers, spreading loads of colors and hue in its surroundings which reveals the nature in its true essence. This festival is celebrated in Hunza with full excitement and passion. At that day traditional dance, music and variety of different traditional foods have made which are the speciality of this festival. **Harissa and Sharbat** are the main dishes of that occasion.

**Harissa:** Harissa is regarded as one of Hunza's most delectable meals. Meat, rice, wheat, and green lentils come together beautifully in this dish. This is similar to haleem, but it has a distinct flavour due to the use of ghee in its preparation. It is a highly healthy dish that the residents of the area enjoy to consume. Harissa is a simple dish to prepare and is a fantastic source of protein. It can be eaten on its own or with naan bread.

**Sharbat:** Sharbat is another energizing dish which is made especially at that day. The locals prepare it with wheat and butter and it is very rich in nutrients and proteins and served in special occasions.

Other than these many further festivals are celebrated in Hunza throughout the year and one of my respondent said that the basic purpose of celebrating this type of festivals is that through these events or occasions they get an opportunity to promote their traditional food which is rich in nutrients, fibers, vitamins, proteins etc. she said that in that events not only their community members are invited but they also try to summoned the people from all over the world so that they can also take advantage from their food by knowing their significances in life prolonging.

She further said that the people of Hunza also try to bring their new generation forward especially in this type of occasions to show what type of life they had and they're living and what type of food they're having due to which they have such an amazing high life expectancy then other areas of Pakistan. I have seen that the people of Hunza are very passionate about their culture, their lifestyle and their organic food

this is the reason they don't leave their culture and traditions wherever they go, their culture stays with them. The Hunzakutz enjoy not just a good health but also their delicious foods that satisfies one's taste buds. People from Hunza moved to different cities and countries, bringing with them the unique Hunza cuisine recipes, which are not only tasty but also nutritious. We know that People from all around the world are undoubtedly impressed by their health and longevity. One of my respondents said that his sister moved to abroad because his brother-in-law had job there so after marriage her sister also had to move to abroad, he said even after going there she didn't change her traditions. At first, they had to face a lot of difficulties because they came up with a totally different culture. When they were in Hunza their diet & routine was totally different as they had to wake up early, had a lot of physical activities and above all their consumption of food was fully organic they eat what they grow at home but the day they shifted Abroad their whole life has changed. Because they don't have to do any physical activities like look after their farms and livestock's, walk miles daily and most importantly they started eating processed food, junk foods and everything from outside due to which they started getting diseases, so his sister thought why don't they start their own business in which she makes all her traditional cuisines which they used to eat in their village, they took a small cabin on rent and start their small business of selling their traditional foods so that Along with them, other people also benefited from eating their healthy food which is very simple yet healthiest and full of nutrition. As we know that the people of Hunza are famous due to their healthy long life this is all because of their natural food.

Apart from the mesmerizing landscapes, picturesque valleys and distinctive hospitality of its people, Hunza valley is also known for its bright and vibrant festivals. Other than these many further festivals are celebrated in Hunza throughout the year and one of my respondent said that the basic purpose of celebrating this type of festivals is that through these events or occasions they get an opportunity to promote their traditional food which is rich in nutrients, fibers, vitamins, proteins etc. she said that in that events not only their community members are invited but they also try to summoned the people from all over the world so that they can also take advantage from their food by knowing their significances in life prolonging.

#### **5.4. Role of Hunza people & local food in raising tourism**

As everyone knows that the Northern Areas of Pakistan are a popular tourism destination for both foreign and domestic visitors. The area's principal tourism assets are natural beauty, some of the world's highest mountain peaks, the world's largest glaciers outside of the polar zone, rich cultural heritage, local food, handicrafts, and the relics of a long history in the form of archaeological sites. Hunza has an open society and the people over there are very open hearted and open minded. They value their rituals and traditions and are very interested in celebrating and preaching all these. Every year, a number of climbing and hiking expeditions visit the Hunza valley. The good thing in the people of Hunza is that they always do their best in promoting their culture, every men, women and children give their equal input.

One of my respondents said that, recently in upper Hunza Gulmit, people make a hiking track named as **ONDRA POYGAH**. The people of Gulmit created this track in 60 days, a world record time during the winter of 2021. The Ondra hiking pathway Gulmit is 1.3 kilometers long. It is the longest and highest stair tracking route ever built in Pakistan. She saidh that Ondra Poygah track is a self-help project every individual gave their equal share/help in making this track which is consist of 1655 mud and stone stairs erected by the people. The Gulmit Ondra Poygah route begins at the historical Gulmit Shagaram (Polo Ground in local language) and concludes at the site of an ancient hilltop fort known as "Ondra."

The Ondra Poygah project is a one of a kind and groundbreaking effort. The goal of this project is to develop environmental and adventure tourism in the region. We have seen that how the people of Hunza work together in almost everything. They are peace loving and lively people due to which they have long lives than other areas of Pakistan. The villagers are really kind and eager to assist the tourist. They'll make them feel right at ease. This is the reason thousands of tourists visit Hunza each year because of their kind and friendly behavior towards them.

Other than this, Tourism is one of the most important economic sectors in the Northern areas, providing employment and earning money for a big portion of the

population. Hunza is a community-oriented society which means that a society that values community. We can never determine a Hunzai's financial situation just on the basis of their appearance. Whether it's a businessman or a street vendor, they all talk, dress, and act the same way. There is no segregation at all. This is the specialty of hunza people which many tourists admire a lot.

Apart from the kind and friendly behavior of people, their local food also plays a vital role in increasing of the eco-tourism. Because we know that the reason of their age longevity is the intake of organic food which is rich in proteins and nutrients. When the tourist visit hunza they also want to try their traditional food after knowing all the healthy benefits. There are also several restaurants in which they serve their local food like chapshoro, dirum phitti, Go-Lee, Harissa etc so that other people will also like it and get advantage from it. The loving and hospitable people of hunza and their delicious healthy food not only attracts the local tourists but also millions of people from around the world.

## **5.5. Promote Their Culture Through Their Food**

Hunza Valley is well-known throughout the world for the long existence of the people who live there. Many researchers have also worked to uncover the top secret behind these people's long lives which is truly inspiring and remarkable. Too many of them feel that their pure and healthy food is the only factor that contributes to their health and life. Hunza has an excessive number of traditional foods for various occasions. As I have already mention above that the people of hunza try to promote their culture through their food because everyone knows that the basic reason of their high life expectancy is the food they eat. This region's cuisine is rich with tasty flavours and whosoever goes to Hunza, only they can appreciate the tastes of these delectable dishes. Because these meals gives a true sense of nature's flavour and purity. Other than these, there are many types of fruits which the hunza people grow by themselves are very delicious and unique. The fruits include apricots, cherry, mulberries, peach, apple, plum berry, grapes etc. One of my respondent said that whenever we discuss about other fruits we never forget apricots because of its healthy benefits. We have cultivated a numerous number of fruit trees especially apricot trees in their fields

which are also known as the valley's legend fruit and were once the main source of food in an ancient times. She told me that they drink apricot juice as a diet and drying them in the summer and using them in the winter. As a result, they never got cancer or had a low cancer risk. Other stone fruits are also important crops in these regions. Most of the tourists visit northern areas in summers when the fruits are very fresh, the locals take them to their fields and offer them their self grown fruits and also fed them with their traditional cuisines. Some of the local foods which gets tourists attractions are as follows;

### **5.5.1. Golee**

Go- Lee is a classic Hunza breakfast item which is also known as Giyaling. Giyaling is mainly a flatbread made from whole grain flour. It is served with tea and butter spread on top and they also prepared this bread for special events like ginani festival which takes place every year in the months of May and June following the harvest of wheat crops.

### **5.5.2. Harissa**

Harissa is one of Hunza's most delectable meals. Meat, rice, wheat, and green lentils come together beautifully in this dish. This is similar to haleem, but it has a distinct flavour due to the use of ghee in the preparation. It is a highly healthy dish that the residents of the area enjoy to consume. Harissa is a simple to prepare dish that is high in protein. It can be eaten on its own or with naan bread.

### **5.5.3. Chapshuro**

In Hunza valley, Chapshuro is considered as pizza. It's a type of bread stuffed with beef, mutton or chicken chopped meat, onion, red chilli, tomato, coriander, onion, black pepper, green chilli, plain flour, water, salt, and oil. This meal is roasted until both sides are golden brown in the oven at a set temperature. People who come to visit Hunza also enjoy this delicious bread. This dish is simple to prepare and tasty to eat, so everyone can try it at home.

#### **5.5.4. Shopan**

Shopan is also a delectable food of Hunza valley. It is made up of a sheep/goat stomach or minced meat, as well as flour, salt, red chilli, coriander, onion, mint, water, salt, and oil. Meat is generally marinated in vinegar or lemon juice to get rid of the smell. It can be served with rice or wheat bread as a side dish.

#### **5.5.5. Gittey**

Gittey is a type of dish which is made up of animal intestines, wheat flour, buckwheat flour, salt, crushed red chilli, coriander, mint powder, onion, water and oil and it is just like sausages. To fill the intestines with the mixture, they are thoroughly cleansed. It is normally cooked in 45 minutes on average and then served it with a soup. They consider it a very healthy dish and people of Hunza love to eat this.

#### **5.5.6. Sharadi**

Sharadi is a luscious dish which is made with mustard greens and served with flatbread. The hunza people called it Hoi lo Garma as well. It is generally eaten with a simple salad of chopped tomatoes, green onions, green chilies, and salt. Lemon juice is also used to enhance the flavour. This is the simplest yet yummiest dish of the hunzas they eat sharadi almost in their daily routine. They love this dish because it is made in very low amount of oil which is very beneficial for their health.

#### **5.5.7. Diram Phiti**

As we know that the hunzakuts are very hardworking people they work all day long in their fields and walk miles daily so they require high energy foods to meet their nutritional needs. Diram fitti is an excellent food option for these people. The hunzas having diram fitti in their breakfast, they love to enjoy this dish because it gives energy. The natural sweetness comes from the bread, which is produced from sprouted wheat flour, Butter, almond or apricot oil are used to serve this meal.

#### **5.5.8. Buttering Daudo**

Buttering Daudo is a traditional apricot soup that is traditionally served throughout the winter months. It is a great way to get rid of cold related illnesses and it also work for people who have constipation problems. This soup is made with dried apricots and additional components such as sugar, water, and lemon. We know that apricots have a multiple benefits, so it is virtually prepared in everyone's home in Hunza throughout the winters.

### **5.5.9. Tumuro**

Tumuro is a sweet-smelling wild shrub found in the upper mountains surrounding Nagar valley. The tumoro tea is made by boiling it in water over medium heat. It's cooked for a few minutes to extract the essence from the leaves before straining and serving. This tea has many health benefits for the human body, including headache reduction, nerve relaxation, and sore throat treatment.

### **5.5.10. Fenugreek Soup**

In Hunza, fenugreek soup is known as Sikarkuch'e Dagowang. It's made with fenugreek that's been dried and powdered. The plant's stem is dried and crushed to a powder form. After that, it is thickened by cooking it with wheat flour. It's a nutritious soup that lowers cholesterol and reduces inflammation in the body.

Hunza cuisines have so many health benefits. The foods which are mentioned above are full of nutrition's and proteins. They made some of these dishes on special occasions or some on daily basis. The local food of Hunza valley is of great importance as I have already stated that they are very healthy and people also love to try and take advantage from that, their culture and food are getting many peoples attraction especially tourists who come to visit Hunza every year. It is a way through which Hunza's promote their culture and celebrate their happiness with the other people.

## **5.6. Promote Their Culture Through Their Lifestyle**

Hunza is among the areas having high life expectancy rates as compared to the other areas of Pakistan. In Hunza valley we can see people of all the ages and gender are

living a happy and healthy life. Their way of life is the reason they are regarded as the world's longest-living people. Hunza valley has a very unique and simple lifestyle. As Hunza is located in a very high Altitude due to which the inhabitants of Hunza breathe fresh and clean air. The Hunzas fascinate many people around the world because of the long and happy life they live. Many of the researchers think that the reason of their healthiest and longest life is their organic food and natural lifestyle. It's true because when researchers went to Hunza, researchers have interviewed many people about the reason of their age longevity; they told me the same thing that it's because of their food and lifestyle. One of my respondents said that his day starts in the early morning like around 5 or 6am after that they had to go to their fields to look after their crops, organic foods and livestock's like goats, cows etc from which they get fresh milk and make yoghurt and desi ghee (butter) from it which is very good for their health. As Hunza is a remote area, he was saying that the water they drink is mineralized which comes directly from glaciers, they use this fresh glacier water for drinking and bathing. It's worth noting that the diet of Hunza's consists primarily of organic raw vegetables and fruits with a low protein level, majority of the people are vegetarian and their food is very simple and organic. They eat plenty of fresh fruits which they grow by themselves and he said among all other fruits apricots both fresh and dried are used excessively in their diet because they thought it's the major reason for their legendary health and longevity. Other than these the Hunza people are very hardworking. All men and women work together in their fields to grow their own fruits and vegetables and every individual gives their equal input. They have a lot of physical exercises all day long as they have to walk miles a day and going on long hikes in rough, mountainous terrain on a daily basis. Their hard work, in addition to their food, plays an important role in keeping them fit and healthy. Apart from this, Hunza's are a very peace loving and a lively people they don't really care about the worldly things like other citizens do that's why they are mentally healthy and are not depressed at all. These people are so close to nature and Nature has a healing effect on their minds and body. Many travelers who come to Hunza and spent time with the local people have always praised their general charm, intelligence and physical stamina. Because they are physically very active even at the



age of 70 and 80. These healthy habits and the unique lifestyle makes them more attractive for the tourist and they try to adopt and incorporate these things into their lives.

## 6. ROLE OF DIET IN PREVENTION AGAINST DISEASES

Due to their age longevity, the Hunza people have captivated the interest of many researchers. Hunza's people are well-known for their long-life expectancy. Their longevity can be attributed to the organic and fresh food they consume. They live in a very stress free environment and begin their day with sunrise, which includes a variety of activities such as going to their fields and working on them. Hunza residents are free of diseases such as cancer, heart disease, asthma, kidney disease, diabetes, and others. When researcher went to Hunza, Researcher met many people over the age of 70 who were very energetic and fresh even at that age, so when researcher asked them about the hidden truth of their activity, they told me regarding their diet. One of my respondents stated that they primarily consume milk-based products. They don't use or buy oil from the grocery store; instead, they use "GHEE" to prepare various dishes. They eat natural and desi food, such as nuts, fruits, and seeds mixed with yoghurt, which is a good source of nutrients. Yogurt, in addition to its nutritive benefits, is a great source of probiotics, which aid in the prevention and treatment of a variety of illnesses such as intestinal diseases, cardiovascular disease, and cancer, and they are protected from all of these diseases due to their intake of these fruits, nuts, and vegetables. They grow their own vegetables, eat dry fruits, and drink fresh juices, particularly apricot juice. These natural foods protect the Hunza people from a variety of diseases. My respondent also mentions their outdoor activities, such as working in the fields and going for early morning walks, which helped to strengthen their bones and keep them active.

*Bes kare ga dukan jo tail ga doodh ne walones, anino dish'r bes tom gutar sanito Ghee ga mail istemal thones. Tom Gutai nawashi khurak ga phal fruit sy asot ayaak shat dain ke bes mafair'er ga cheech'o komi thok bones.*

The Hunza people don't get any disease due to all these physical exercises, daily routine and diet. They are free from many diseases some of which are as follow;

- Cancer

- Cardiovascular disease
- Diabetes
- Psychosomatic diseases

## **6.1. Role Of Diet in Prevention Against Cancer**

Hunza people eat mostly vegetables and 70 percent of Hunza people are vegetarians. They also eat fruits, particularly apricots. Apricots are high in antioxidants, which help to fight cellular injury and prevent blood cell mutation. The residents of Hunza eat apricots in a variety of ways, which is why they are cancer-free. Apricots act as an anticancer drug. They eat mostly what they grow in their fields, particularly fruits and green leafy vegetables (cruciferous vegetables). Green vegetables are centers with the special ability to alter human hormones, activate the body's natural purification system, and prevent cancer cell growth. To release their powerful anti-cancer properties, starchy veggies should be chewed comprehensively or eaten shredded, chopped, juiced, or blended. Sulforaphane, a cruciferous phytochemical, has been known to protect blood vessels from inflammatory signaling, which can lead to heart disease. Cruciferous vegetables have the highest nutrient density of any food. The Hunza people consume a variety of vegetables, both raw and cooked, on a daily basis, including broccoli, cabbage, Brussels sprouts, kale, and cabbage. These vegetables are grown in their fields. Hunzas are free of diseases, particularly cancer, because they consume a lot of vegetables and fruits and live in a very clean environment. The main reason I believe Hunza people are cancer-free is because they consume apricots and kernel oil. Hunza people's diet is important in the prevention of diseases such as cancer.

## **6.2. Role of apricots and kernel oil**

The people of Hunza, as we all know, eat apricots throughout the year. Apricot seeds are high in "vitamin B17," which kills cancer cells and boosts the immune system. The Hunza's consume apricots in excessive amount in various ways they eat apricot and make drink from apricot called **Chamoos** which they used in summers and they

dried apricots and used in winters. The apricot juice is very healthy and mostly the people of Hunza use the apricot juice throughout the year instead of tea. One of my respondents said that she never used tea in the morning and she along with her whole family drinks apricot juice instead of tea throughout the year. She also adds some benefits of kernel oil which is abstracted from apricot she stated that the kernel oil is used to keep the body warm in winters they use it daily like took 1, 2 spoons daily before going to their beds and also used in day time when they leaving for their work because it's very good for their immune system and also makes them strong due to which they do such hard things. She said they believed that eating apricots and their seeds in their daily life prevents them from getting ill. The people of Hunza eats apricots in several ways, they use dry apricot as snacks in winters and apricot juice throughout the year. Apricots are also used to prevent against asthma attack and help in treating asthma and respiratory related diseases, apricots also remove stress and pressure on respiratory organs such as lungs. Dried apricots have numerous advantages as well. They contain a high concentration of pectin cellulose, which aids in constipation relief. Apricots are high in fibre, which stimulates gastric and digestive juices, aiding digestion and preventing constipation. Dried apricot also aids in the treatment of infertility and vaginal infections, which is why Hunza women can conceive in their 50s and 60s.

*Asai Gutar chaa kosga ne piyen. Aesai dish'r gutai pures suba chamos piyones os asot takat dain. Jaroti saal puro istemal bain, uwalaj chamoos sane piyok kaar or younaj resai hani'o chito tail nikly piyok kar, hani'o tail sy be younaj garm chupiyen har balat aik aik shuk pury gutai aes thain.*

### **6.3. Role of vegetables and fruits**

Vegetables and fruits, as we all know, are high in vitamins and minerals. Vegetables and fruits, like other plants, are low in calories and high in dietary fibre. They also contain ingredients that may help prevent diseases such as cancer. Hunza people eat more fruits and vegetables, which may help them reduce the amount on higher calorie foods like meat, cheese and snack foods. One of my respondent stated that they consume fruits and vegetables. She stated that she washes and cuts the vegetables

and keeps them in her refrigerator for quick snacks and she keeps fruits in a bowl in her kitchen so that she remembers to eat and serve them to their family members. She said she choose recipes that have vegetables or fruits as the main ingredients, such as vegetable stir-fry or fresh fruit mixed into salads.

#### **6.4. Prevention Against Cardiovascular Disease**

A diet rich in fruits and vegetables, whole grains, nuts, fish, and vegetables is the best way to prevent heart disease. Hunza people are thought to be the healthiest people on the planet due to their age longevity. The people of Hunza are disease-free, as previously discussed. We will now discuss the prevention of cardiovascular disease, because the individuals of Hunza are free of diseases also because they consume a lot of vegetables and fruits, grow fresh vegetables in their fields and use them in their daily lives. Hunza people follow the following steps and by doing so, they suffer from fewer heart diseases. These steps are as follows.

- No smoking
- Maintaining a healthy weight
- Exercising
- Following a healthy diet

##### **6.4.1. No smoking**

Tobacco use is a difficult-to-break habit that can make people sick and shorten their lives in a variety of ways, one of which is by contributing to heart disease. Hunza people are one of the healthiest in the world, one of the best aspects of Hunzas is that they do not use tobacco in any form. In fact, there is not a single shop in Hunza that sells tobacco in any form. One of my respondents said that he never tries cigarettes in his life he further told me that in Hunza there is very strict rule against smoking, the tobacco intake is very rarest in the Hunza.

##### **6.4.2. Maintaining a healthy weight**

When I went to Hunza for my research I saw many people that are very fit in the ages of 70's and 80's. When I interact with them, they told me about their physical activities and diet. As we know that excess weight and an extra-large waist size both add to heart disease, as well as a host of other health problems. The people of Hunza make themselves fit by doing activities like working in fields and climbing in the mountains. They eat very healthy food likes vegetables, fruits, fish, nuts etc. They consume less meat in their diet. The Hunzas try to keep themselves very fit even in their old age.

### **6.4.3. Following a healthy diet**

Diet plays an important role in our lives. As we know that the people of Hunza are famous due to their high expectancy of life because the Hunzas follow a very healthy diet, I interviewed an old man who is about 80 years he was mentally and physically very fit and he was working in his fields I asked the secret behind his activeness he told me that this is because of their natural and desi food and their healthy diet he told me about his diet which was very simple and healthy that he follows daily. He said his day starts with a glass of apricot juice after that he takes his breakfast, he eats eggs and one cup of fresh milk with their desi bread called Chupatti. He further told me about his lunch and dinner diet said he eats vegetables along yogurt which is a great source of nutrient. Yogurt, in addition to its nutritional value, is a rich source of probiotics, which helps to prevent and treat a variety of diseases. He said that he follows this healthy diet since his childhood.

*Asai xigy umer'o wajuhaat'o maja aik ane ga hin k asai khurak bodi sada hin. Bes suba uthai chamoos ae glass'k piyones, aesajo bad nashta maja Chupatti ga hanjay phaan thy desi doodh sth khones. Baqi dazuki ga rati tiki maja bes ziada tar dahi sath daal'e ya sabziye khones, aso waar moz bodu kam istemal bain.*

### **6.5. Prevention Against Diabetes**

Diabetes prevention and management rely heavily on the Hunza diet. Diabetes is caused by an abnormally high level of sugar in the blood. As we already know, the Hunzas eat a very healthy diet and do not consume sugar in excess. In fact, they use

only 10% of carbs in their daily routine. We cannot claim that they don't really have diabetes, they do, but in a lesser amount. One of my respondent said that they use sugar in very less amount in their diet even they use salted tea in their breakfast she said their mostly dishes are salt based. Hunzas follows diet that contain green vegetables, beans, non-starchy vegetables, nuts and seeds, fresh fruits etc. They eat these foods due to which they don't suffer diabetes.

### **6.5.1. Green vegetables**

Green vegetables, leafy greens, and other vegetables are very essential in preventing diabetes. The Hunzas eat a lot of vegetables and include them in their meals and salads. When I interviewed in Hunza I interact with many women and asked about the use of vegetables in their diet they told me that, they always try to make dishes which are vegetables based because it is very healthy for their family especially for their kids. They further told me that they grow vegetables in the fields and even in their home gardens, she stated that she never brings vegetables from shops she uses her own grown vegetables in her meals.

### **6.5.2. Non-starchy vegetables**

Non-starchy or non-green veggies are also important in the prevention of diseases such as diabetes. Non-green vegetables, such as mushrooms, onions, garlic, eggplant, and peppers, are well known, but they also play a vital role in the diet. Mushrooms are great source of protein and fiber, the Hunzas take mushrooms in their diet they cooked and make different dishes from it. They use onions in their cooking and eat as salad. The Hunzas also take garlic in very excess they use in their dishes and they make garlic pickles which they eat with their meal. When I was in Hunza and I meet with people to know about their diseases free lives I interact with many people and one of my respondents of my respondent tell me about the vegetables which they grows in their field she said they grow numerous of vegetables like onions, potatoes, garlic etc she specifically mentioned garlic and tell me about the uses of garlic in her life she said that she made garlic tea which is very beneficial for health and also helpful in prevention against diabetes she have garlic tea regularly and she further

tell me about garlic chattni which is homemade, she made it with mint and peppers which is very tasty and healthy they use it with their daily meal.

### **6.5.3. Beans**

Beans are among the foods most closely associated with longevity. Beans are the finest source of protein, fibre, and iron. The Hunzas include beans in their diet because it reduces the risk of diabetes. They consume beans in various ways, one of my respondents said that he takes meal which are mostly made up of beans he mentioned Caribbean black bean soup which is very healthy he takes this soup with fresh green salad and bread in dinner mostly.

### **6.5.4. Nuts and seeds**

Hunzas rely heavily on nuts and dried fruits in their diet. Nuts and seeds are beneficial for health and can help us avoid many diseases. Dry fruits can also help people with diabetes. They use almonds, walnuts, peanuts, apricot seeds, and a variety of other nuts and seeds. They also include dried cherries in their diet because they are high in protein, calories, and nutrients and provide enough energy to keep them active throughout the day. This is a very tasty organic Hunza snack that has a variety of health benefits. It protects against diabetes, provides arthritis relief, lowers cholesterol and reduces the risk of gout attacks, antioxidants help to fight against ageing, are pain relievers, and has a variety of other advantages. Dried cherries are a must to add in diet snacks with a lot of health benefits.

## **6.6. Psychosomatic Diseases**

Aside from their everyday routine and diet, Hunza residents are mentally healthy and free of mental illness. Emotional stress causes psychosomatic illnesses, which emerge inside the body as psychogenic pain or any type of physical pain with additional symptoms. Anxiety is also one of the major contributing factors to psychosomatic illness, particularly when the body's immune system is compromised by chronic or severe stress. However, the citizens of Hunza live in thorough peace and harmony; they are physically and psychologically very stable and live happy



lives free of disturbances. As a result, people from this valley do not suffer from psychosomatic diseases. When researcher was visited Hunza and asked people about their healthy life, researcher interact with an old man who was about 70s, researcher asked him about the secret of their high life expectancy except their diet he informed me one of the secrets of Hunza's healthy people is that, unlike other citizen they are mentally healthy, don't care about money or material things, and are not depressed at all. That's exactly right we can see it on their faces. No worries, just joyful individuals sharing their joy. He explained that they don't get sick because they are psychologically and physically well. He told me that one of the Hunza people's healthy lifestyle habits is to live in a fresh atmosphere. The existence of Hunzas is completely different from ours. Modern man is fascinated in an endless race obsessed with past incidents and constantly worried about future that he can never seem to grab up with. The Hunzas don't seem to worry about the future, nor are they burdened with concerns about the past. They live in the present moment.

*Hamari zindagi baqi shehriyon se mukhtalif is liye hai k hum mazi ki bataon pe afsurda nahi hotey or mustakbil ka ziyda sochty nahi haal mai khush rehty hein jis ki wajah sy zehni sukoon hota hai or yeh zehni sukoon hamri lambi zindagi ki wajah hai.*

Researcher's next respondent also belongs to Karimabad Hunza and she told me some interesting things about her life. She said she works at a factory in which she made handmade embroidery bags, shawls, bracelets, cushions etc. Researcher saw her passion in handcrafts when researcher met her, researcher was glad to see such a powerful woman, aged but passionate, she said she's earning for her family because she doesn't have any son and her husband is sick. So, she had to go out and make some money to run her family. She also told me that after came back from factory at evening, she then go to their fields to look after their crops, fruits and vegetables. She had a lot of physical activities all day long. She was saying that researcher always thankful to Allah for what I have and never complaint of anything despite these entire life struggle. Researcher came to know that apart from their intake of organic food their positive thoughts and gratefulness are also the reason of having a long and

healthy life of these local people. In addition, they lack urban harms, way of living is also very healthy with use of fresh fruits and veges that promote disease free environment.

*Hum har haal mai Allah ka shukar ada karty hein or khush rehny ki koshish karty hein jis ki wajah sy hum zehani sukoon mai rehty hein or bohot sari bemariyon sy bachty hein.*

## **6.7. How the people of Hunza don't suffer from diseases?**

Hunza people are well-known for their unbelievable wellbeing and resistance to a variety of illnesses. Our health is determined by our way of life and diets, as well as the type of food that we eat and the type of life we lead. As we all know, Hunzas are known for their simple lifestyle and intake of organic food, which allows them to avoid illness and live a healthy life. Following detailed testing on the life of this tribe, I believe the following points can be major reasons for maintaining healthy lives.

- Organic food
- Fresh atmosphere
- Physical activeness

### **6.7.1. Organic food**

We've already seen that the Hunzas are well-known for their organic cuisine. Hunzas' diet is rich in unprocessed, nutritious food, which serves as the foundation of their diet; they eat organic food that they grow themselves. Whole grain products, such as wheat, grain flour, buckwheat, or ground barley, account for 40% of total calories consumed. Fresh vegetables account for an additional 30% of the diet. Fresh fruits such as mulberries, apricots, grapes, and other berries account for 15% of caloric intake in the diet. Beans, nuts, and seeds make up the majority of the remaining portion of the diet. The majority of these foods are consumed raw. If any processing is done, it usually consists of drying the fruits in the sun. Milk and dairy products such as yoghurt are also consumed on a regular basis. Dietary guidelines for Hunza residents include focusing on whole grains, fruits, vegetables, and proteins, as well

as restricting sodium and high-calorie foods. Obesity increases the risk of developing cancer, but there are many things that can help prevent it. Green vegetables, root vegetables, fruits, whole grains, and even green and black tea all help to prevent cancer.

### **6.7.2. Fresh atmosphere**

According to UNEP, "clean air and water, sanitary conditions and green spaces, safe places of work can enhance people's quality of life" in addition to diet.

Hunza, being a remote area at a high altitude, has a clean atmosphere free of dangerous chemicals. Hunza residents breathe clean, fresh, and healthy air due to the high altitude. Hunza's people live a very peaceful life; the atmosphere is very unique from other places; there are no factories or heavy traffic, which causes pollution.

They are free of pollution, allowing them to live a healthy life. One of my respondents stated that, in addition to food consumption and lifestyle, there is a fresh and natural environment that keeps them healthy and fit both mentally and physically. Aside from that, the people of Hunza live a stress-free lifestyle in correlation to the hectic lifestyles of other populated countries, and just as an unhealthy diet can be a cause of many diseases, the effects of constant stress can also have a serious impact on our overall wellness. Along with eating a healthy, unprocessed diet, looking for and practising stress-reduction techniques will improve both mentally and physically well-being.

### **6.7.3. Physical activeness**

Hunza people are physically fit and active because they engage in a variety of physical activities and all men and women work together in the fields, where they get plenty of exercise the whole day, long going to climb up and down the terraces on their farms, which keeps them physically fit. The Hunzas live a decent simple life that contains a lot of physical activity. Hunza residents have made a habit of exercising through daily trekking. This strengthens their immune systems and aids in the treatment of medical conditions and diseases.

## **6.8. Impact of glacier water on their health**

As we know, the Hunza people eat healthy foods and live a very healthy lifestyle, which has a significant impact on their age longevity, just as water plays a major role in living a fit and healthy life. Hunza people have the world's longest life expectancy, which has been connected to the water they drink and the natural food they eat. Hunza water is a stunning example of pure natural water.

Hunza residents typically live to be 100 years old, in excellent health, with little or no disease, degenerative illness, dental cavities, or bone erosion. We know that the Hunza are very powerful and strong, which is why their women can conceive even in their old age. According to research, the local water that people drink is the common factor of healthy long-living people.

### **As Dr. Henri Coanda said, you are what you drink!**

The most vital thing we put in our bodies is water, but not all waters are equal. It has a various physical qualities everywhere on the earth.

Dr. Henri Coanda, the Romanian founder of fluid dynamics and a Nobel Prize winner spent six decades researching Hunza water to discover what was in it that was so beneficial to the body. For over a century, he had been researching the five mountainous regions of the world where people lived long and productive lives and he discovered that while their diets varied, the one thing they always had in common was the type of water they drink. Hunza valley in North Pakistan was one such region, where the water had particular silicate minerals originating from the surrounding glacial mountains and where the locals drink the glacial water with all of those minerals.

Dr. Flanagan took over the investigation and discovered that these minerals provided Hunza water unusual features like a reduced surface tension and freezing point. A high zeta potential, natural colloids, minerals, and distinctive microscopic silica are among the other qualities. Hunza water is very comparable to the water that surrounds our cells, therefore people who drink it have greater cellular hydration and nutritional absorption.

Due to the consumption of glacial water which contains all those minerals, Hunza people live a long and disease-free life.

## 7. SUMMARY AND CONCLUSION

The topic in which I have research is the **“Effecting Socio-cultural factors influence life expectancy of the people of Hunza”**. The world is full of secrecies and one of them is the high life expectancy of Hunza people, A group that lives in the Himalayan highlands. Hunza has long been recognized as the home of another culture of longevity. For many years, the people of Hunza have been called as the world’s healthiest and oldest living people on earth.

The main purpose of choosing this topic is to understand why the people of Hunza lived for so long, what are the reasons behind their age longevity, to know about their lifestyle and daily routine and to investigate the specific foods which are responsible for prevention of many diseases. To comprehend all these aspects I went to Hunza and stayed there for months and interviewed different people who were above 70 or 80 plus.

I have used purposive sampling which is also known as judgmental sampling is one of the types of non-probability sampling. My sampling size was 28 in which I have interviewed both male and females of an old age. When I reached to certain respondents by conducting 4 in-depth interviews, 3 focus group discussions and by using interview guide I have come to the point that the high life expectancy of Hunza people is due to the intake of organic food which they grow by themselves they don’t buy even a single thing from outside they always prefer home cooked and home grown food. They consume vegetables and fruits abundantly and I found that the consumption of meat is very less among the Hunza tribe mostly people eat a vegetarian diet and they get their protein from local dairy products like milk, butter etc.

Despite this their daily routine and lifestyle also have a huge impact on their age longevity. I have seen that their lifestyle is totally different from other areas, many of my respondents said that they wake up and sleep early and do many outdoor activities, walk miles daily despite their old age because they are physically very active. They eat fruits in both dried and fresh form and the use of apricots and their

oils are very excessive in Hunza valley due to which they don't get sick and are not afflicted with diseases like cancer.

Other thing I have found is that they try to promote their culture through their food and lifestyle, because Hunza has a unique culture, they have different vibrant occasions, through these events they get an opportunity to promote their traditional food which is fully organic and rich in nutrients, fibers, vitamins, proteins etc and in that events not only their community members are invited but they also try to summoned the people from all over the world so that they can also take advantage from their healthy food by knowing their significances in life prolonging. Other than this their way of life is very simple and healthy as we know our health is totally depend on our way of living. As researcher have already mentioned, they wake up early in the morning to work on their fields. All men and women work together from which they get plenty of exercises all day long which acts as a morning exercise and helps keep them physically fit.

Apart from the organic food and simple lifestyle, I have found that Hunza people are very open hearted and a lively people they don't get stressed about the worldly things that's why they are mentally healthy and free of mental illness. I've seen that they always thankful to Allah for what they have and never complaint of anything despite their daily life struggles. I came to know that despite their intake of natural food their positive thoughts and gratefulness are also the reason of having a long and healthy life of these local people. I was really inspired by their way of living.

Whosoever wants to live a healthy long life they can learn a lot from the people of Hunza and embrace their healthy habits of living to spend a fit and long life..

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