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### Research Article

# Prevalence of Hepatitis B and C in District Dir Upper, Khyber Pakhtunkhwa, Pakistan

### Abstract

The current study was performed on the dominance of hepatitis B and C in three tehsils of District Dir upper namely Dir, Wari and Sheringal. The data were collected from three tehsils in which 11 were positive cases and 339 were found negative cases during my research work. The higher incidence of hepatitis was found in tehsil Dir which was 6 i.e. (3.52%) and lowest rate of hepatitis was showed in Tehsil Wari which was 4 i.e. (2.75%). And in Gender wise prevalence out of 350 positive cases were 8 i.e. (4.0%) were male and 3 i.e. (2%) were female. This shows that the prevalence of hepatitis is higher in males than females. The higher prevalence of hepatitis were found in the middle age people from 13-40 which was (4.76%) and lowest infection are establish in people having age greater than 41 which was (1.21%).

## Introduction

Hepatitis word is derived from Greek “hepar” means “liver” and “itis” means “inflammation”. Hepatitis is an infection which causes inflammation and enlargement of the liver. Viral hepatitis have five main type A,B,C,D and E. Hepatitis A and E are largely transmitted through contaminated food and water, while hepatitis B is largely increases through infected blood, sex, or childbirth. Hepatitis C and D are mainly transmitted through blood. Transmission of hepatitis B happens by blood and blood items, sexual contact. The intra familial Transmission is likewise reported sometimes. 350 million individual have Hepatitis B infection (HBV) contamination around the world [1]. Pakistan is a stand out amongst the most awful impacted countries of the world having hepatitis B. Different surveys have been performed to look into the transcendence of HCV and HBV in various areas of Pakistan [2,3]. There is next to no populace which is study to gauge the correct event of hepatitis in different regions [4]. The vast majority of the epidemiological reviews with respect to the typicality of HBV and HCV are compelled to the hospitalized patients [5,6]. From July 2007 to May 2008 a study of the entire nation was directed by Pakistan Medical Research Council [3], exhibits that prevalence of hepatitis B is 2.5% in like way people of Pakistan. Examination on sexual orientation astute demonstrates that it is somewhat more normal in guys all over Pakistan [3]. On the premise of territories hepatitis B was astoundingly typical in Baluchistan (4.3%) while in Sindh it was

2.5%, in Punjab it was 2.4% and 1.3% in Khyber Pakhtunkhwa. The total HBsAg consistency in region Punjab was 2.4%. For the most the HBV and HCV are fundamental in Vehari, Okara, Jhang, Islamabad, Attock, Rahim Yar Khan, Mandi Bhauddin, Gujranwala and Mianwali regions of Punjab district. People who are living in sullied ranges have high extent of viral hepatitis [7,8]. Viral hepatitis is the liver disease which is created by hepatotropic contaminations (hepatitis A, B, C, D, E and G) and is a significant explanation for behind terribleness and mortality. Disease of HBV and HCV are imperative for bringing about constant hepatitis and being one of the significant reasons for the cirrhosis and hepatocellular carcinoma. 33% (2 billion individuals) of the total populace has been spoiled with HBV and 400 million individual have interminable ailment out of these 75% people are living in Asia and Western Pacific edge. All around the hepatitis B normality is different which is more (>8%) in Africa, Asia and Western Pacific to low (<2%) in Western Europe, North America and Australia. It is assessed that 180 million individuals is tainted with HCV incorporating 400 million individual in USA. The most widely recognized perpetual blood bone contamination is brought on by HCV and records for half of all US patients with endless liver malady. However there is every year decrease in the frequency of diseases since (1980s) pinnacle of more than 230,000 new cases per each year to ebb and flow 19,000 cases per each year. This decline is principally comes about because of diminishing in transfusion related cases which is the consequence of screening techniques. In Asia and Africa the



dominance of HCV is on the top (up to 13%) while utmost (over 15%) in Egypt. Among healthy adults the sero-commonness of HBsAg has been accounted for to be 3.0%–9.9% and hostile to HCV 2.2–3.69 in various reviews led in Pakistan. The sero-prevalence of HCV has been accounted for from Faisalabad to be as high as 17.7%. The elevated pervasiveness of HCV contamination in Punjab was researched in Faisalabad. Contaminations of both HBV and HCV are of genuine worry in Pakistan since they cause serious or incessant liver ailment with impressive decrease in work, constrain and utilize an extensive part of the wellbeing spending plan. People experiencing HCV disease, there impressive rate are asymptomatic and are recognized just on arbitrary registration for different purposes. Distinctive parental ways of transmission of HBV and HCV have been guaranteed which joins: sharing of needles, razors, tooth brushes, implantations, unscreened blood transfusions, coincidental needle-stick wounds in human administrations providers and organs of transplantation from positive for HBsAg and 440(3.13%) were found positive for against HCV. Inescapability of HBsAg on nearby keen base is changed, for example, 1.17% in Mianwali and 7.58% in Rahimyar Khan (n=211) and that of antagonistic to HCV from 0.0% in Layyah (n=113) to 8.9% in Chiniot (n=101). High power of against; HCV in various district were Faisalabad (7.2%), Vehari (7.03%), Shekhpora (5.83%), Rahimyar Khan (5.69%), Okara (5.39) and Muzaffargarh (5.95). All attempted constructive individuals did not give any clinical clue and signs of whiteness, jaundice or hepato splenomegaly. Presently a day overall medical issue is viral hepatitis and hepatocellular carcinoma. The transmission of hepatitis is possible through blood and other body fluids are known since long time [9,10]. One of the major health problems is hepatitis B virus (HBV) [13], the condition is intense in Asia, Southren Africa, Latin America and Europe. It is assessed that more than 2 billion individuals are contaminated with HBV around the wide [14,15]. Out of these 2 billion patients around a 400 million are experience the ill effects of unending HBV [16]. Pakistan is highly endemic for HBV [17]. Up to date investigation show that 9 million people are infected from the disease and there is a fast enhancement in the rate of infection [18]. The other viral infection of liver is HCV which is concerned with highest mortality [19,20], because the hepatocellular carcinoma and liver cirrhosis are more familiar among anti-HCV positive patients [21]. World Health Organization (WHO) recently estimated that HCV infection has contaminated about 170 million people (up to 3% of the world's population) [22,23]. There are many genotypes of HCV with nine well studied genotypes are reported in the literature [24]. A huge ratio of Pakistani population is ignorant from the epidemiology and risk factors of viral hepatitis. Although the showing and investigative recommendations support early detection of HBV and HCV [25], but in Pakistan most of the sufferers of viral infection are bring when they are at the final stage of liver damage. The risk of hepatocellular carcinoma increases by the delay analysis and decrease the effect of antiviral therapies [26]. The recent study was thus designed to find the common population for the viral hepatitis infections. Pakistan is common for HBV having infected people round about nine million and its rate of infection is on a steady rise. The major reasons of HBV infection are: absence of legitimate wellbeing

offices, poor prudent status and less open mindfulness from the conduction of major contagious maladies like HBV, HCV and HIV. Among people the medicals course and continuation of delight hepatitis is distinctive. HBV contamination produce a broad scale of medical appearance ranging from asymptomatic transporter state to serious auto-prohibitive disease or fluminant hepatic stoppage, consistent hepatitis and improvement of cirrhosis and additionally hepatocellular carcinoma. The national level particularly among generally solid people studies are confined and don't give unmistakable photo of the regularity of HBV. Healthy individuals studies are restricted and do not give a clear picture of the commonness of HBV. Most earlier led review under assault different little gatherings of people. Infection of Hepatitis C Virus (HCV) is one of the mainly important Flaviviridae infections. HCV is in charge of the second most well known reason for viral hepatitis and deliver critical medical issue in the entire world. Studies to research the regularity of HCV disease in widespread populaces of various nations were directed when serological assay are available. The commonness of HCV are vary in the entire world and is more basic in Egypt (around 28% of the populace tainted being recorded). In Egypt this high predominance of HCV contamination is because of the utilization of parenteral antischistosomal treatment. About 2% of USA populace and 3% that is an expected 170 million individuals are HCV bearer around the world. It was seen in (1999) that HCV contamination was found in those people who got blood items or gave organs. The way of dispersion stayed obscure in around 30%–40% of HCV cases. Hepatitis C introduced a considerable measure of danger and no nation on the planet has the way to overview its entire populace for the occurrence of the infection. In some parts of the Pakistan a few of the sero-epidemiological survey is conducted which shows 8%–10% rate of prevalence. These surveys were conducted from volunteer blood donors and on the basis of these samples collection serological tests have been carried out. To accurately guess commonness all the more precisely we gather test from evidently solid people living in different parts of the District Dir upper and performed both serological and sub-atomic measures on these specimens since tests from volunteer blood benefactor do not demonstrate the genuine pervasiveness of HCV contamination as a rule populace.

## Review of Literature

Kane A, et al., [27]. The Afghan evacuees living in the camps of Baluchistan region having the seroprevalence of HBsAg was 8.3% while the predominance among husband, wife and kids were 12.3%, 7.0% and 5.6% respectively. In a populace the commonness of HbsAg predominantly relies on upon vaccination reporting against hepatitis B and pervasiveness of hazardous infusion practices. Hepatitis B in the evacuee's camps is because of absence of vaccination administrations and the inclination for infusion for regular ailments are the fundamental obvious elements prompting to abnormal state (>8%) of HBsAg in this Afghan displaced person populace.

According to 1979–1991. Morb Mortal Wkly Rep. The review was directed among displaced people getting by USA from different parts of the world and found a seroprevalence



of 4.1% among Afghan outcast. For the most part the displaced people of Afghan lands to USA have a top financial rank with in all likelihood best social insurance looking for conduct; this may be the basic reason of reasonably less estimate of HBsAg among Afghan refugees arriving there.

Tanaka T, et al. [28], among older age people the higher prevalence is due to constantly contact with the risk factors of HBV infection. Amid the earlier year accepting more than ten infusions was a key danger calculates in this review (OR 3.5, 95% CI 1.8–6.7). It was observed that those people who receive more injection during the last year have higher danger of HBV contamination. Those individuals who treated from private social insurance have the danger of getting hepatitis B contamination. In many countries various studies indicate that the risky injection practices are the significant wellspring of HBV transmission and other blood-borne pathogens.

Kane A, et al. [27], the possibility of receiving infection is depending on facing to unsafe injection having pathogens. The possibility of infection is also depending on the prevalence of blood-borne pathogens in population.

Simonsen L, et al. [29]. Among Afghan refugees a high seroprevalence of HBsAg (8.3) is present and that is caused by unsafe injection which is continuously increase unrecognized chains of hepatitis B in this Afghan displaced person populace and it offer an extensive medical issue even appropriate preventive measure are taken. The weight of HBV disease can be diminish generally by expanding mindfulness and confident safe infusion through regular health education in these camps and hopeful safe injection practices among healthcare provider in the refugees population.

Van Damme P, et al. [30], usually the transmission from child-to-child takes place through contact with blood, spite or skin sore emissions through little breaks in the mucous layer or skin.

Williams MG, et al. [31], in both cases when infection received in infancy or early Child hood leading to important public health problem and cause a higher transporter rate and genuine issue including cirrhosis and hepatic carcinoma.

Alter MJ, et al. [32]. Transmission of hepatitis B infection through sexual contact is not known. Afghan displaced people living in the camps of Baluchistan area have a seroprevalence of HBsAg and they are intelligent of exceedingly endemic populace of hepatitis B. For inoculation in this population the hepatitis B antibody is presented for treatment.

Zhu R, et al. [33], a clear cut account is given for the method of HBV infection detection and genotype. Sequence about the number of people studied there and the inhibiting area were also reported. HBV prevalence in different groups of population is determined by studies which reported risk factors and awareness status in Pakistani population.

Dore G, et al. [34], from the last decade as crucial to treat HCV is being treated, the study and literature of HCV and intravenous drug users (IVDU) has extended quickly. Most of

the research conducted previously shows the prevalence in the community of IVDU, carrying out tests mixing of services to alcohol and drug centers, the rural community has been under represented unfortunately in these studies with the huge majority of studies focused on metropolitan areas. The above review clears that there is a huge gap in research pertaining to the familiarities of hepatitis in rural areas of Australia.

Dore G, Temple-Smith M, et al. [35], for the treatment of HCV important changes are held over the years has lead to detection of different reason for not seeking treatment. It will take little bit time for changing apparent knowledge of people for hepatitis C treatment due to less value of past treatment and high rates of side effects.

Jafri W, Jafri N, et al. [36], in various studies conducted in same population shows greatly different seroprevalence estimate both for HBV and HCV in same province. Transmission of HIV and hepatitis takes place sporadically or in micro-epidemics. The great variation in commonness found in a country, in a region, or even in a group is due to these micro-epidemics. When causes of these micro-epidemics are determined then it gives a chance to constrain the communication of these ailments.

Morb Mortal Wkly Rep [37], the distinctions in seroprevalence inside a like district or populace are due to methodological differences in sampling strategies. For example one study is conducted in a general population give a dramatic group of irregular testing of the whole city's review populations, while a moment study is performed in an accepted irregular samples in a alternate city enrolled people with the assistance of advertisement in news paper that may have bent the hazards synopsis of respondents when contrasted with the primary review.

Hutin YJ, et al. [38]. In Pakistan unnecessary injections are given which increase the prevalence and it is observed that infused pharmaceutical are more powerful than orally eaten drugs.

Janjua NZ, et al. [39], the causes and prevalence of hepatitis are intramuscular infusions that are oftentimes utilized for weariness, fever and basic ailment, while for the treatment of shortcoming, fever and brutal maladies intravenous drips are used which prevalent the hepatitis. Other causes are IV drips for cooling down during the summer season given by doctor at facilities through causal, untrained suppliers, by wellbeing specialists who visits to home and by drug specialists both prepared and causal.

Janjua NZ and Akhtar S, et al. [40], Due to money related impediments and absence of hazard mindfulness among the human services suppliers and the populace by and large the syringes are reused and sterility of infusions is frequently not said. These infusions are thought to be the main major essential issues in the increase of HBV and HCV in the normal populace of Pakistan. Every year in Pakistan there are around 1.5 million units of blood items transfused?





Kazi BM, et al. [41], Due to absence of reporting framework irresistible or non-irresistible unfavorable occasion are generally on the grounds that information is so rare on the wellbeing of this transfusion process.

Rahman M, et al. [42], the network of transfusion is poorly organized and expected to contribute notably in the serious infectious disease transmission. In fact during bilateral knee replacement surgery the main hepatologist and general wellbeing researcher of Pakistan and editorial manager of the nation's head restorative diary for a long time kicked the bucket in 2004. Her case get to be sensationalized the need and control of transfusion practices in Pakistan. Comprehensive process is required in both open and personal sectors in all provinces of our country under the umbrella of National Blood Policy. These processes in an area include situational analysis and sensible evaluation of the blood requirement, and after that enrolment and upkeep of intentional, non-repaid blood benefactor and institutionalization and control of appropriate blood screening method.

El-Serag HB, et al. [43], in Germany, the United States, Brazil, Taiwan, Egypt and Pakistan the extent of HCV-positive fundamentally expanded, the initial two nations is HCV endemic. The observations confirm and earlier reports on different trends shows that HCV positive is same for the above countries.

Tanaka Y, et al. [44], Increase in the proportion of HBV-positive HCC and associated lesson in HCV-positive was less expected in China. In the mid 1990s upgrades in transfusion practices were executed in China. Amid 1980s especially diminish happens in pursued plasma and the blood benefactor who were tainted with overwhelming correspondence of blood-borne diseases have HCV and HIV.

Qian HZ, et al. [45], the information from incompletely various Chinese provinces on the two Periods derives was a previous over-production of high HCV commonness zones (e.g., Liaoning Province).The HBV-positive HCC is generally expands which may demonstrate either current Advancement in the control of HCV or equivalence issues between the two watched Eras. Information for 29 studies are accessible on the mean age at HCC conclusion through viral position which demonstrate that the HBV-positive HCC cases are constantly more youthful when contrasted with HCV-positive cases, yet between the two gatherings age distinction is diverse by world range. The mean age at HBV-positive HCC finding is most youthful in Africa and in few Countries such as Eastern Asia though the age distinction is largest. HBV contamination was transmitted here and there or in adolescence in these zones, while the latest wonder is the transmission of HCV disease by method for needles and blood transfusions are all the more as of late sources that involve HCC hazard at senior age.

Smith BD, et al. [46], at comparable ages in the United States HCV-constructive HCC and the less normal HBV-constructive HCC are distinguished conceivably on the premise of the prevalence of intravenous medication clients and those people conceived amid 1945-1965 are diligent HCV bearers.

This survey is constructing for the most part with respect to rehashed.

HCC cases distinguishing proof in a particular healing centre. On the premise of the strictness of sickness the greater part of the cases require therapeutic care up at a few phases and therefore in the general population hospital-based series are expected to be representative of HCC cases. We are attempting to take out reviews which are known to be utilized as a part of an original examination for against HCV anti-microbial, which was lessened in both affectability and specificity. Every one of those articles that don't recognize the technique for research facility for hostile to HCV test were accessible after 2009 as were dicey to have utilized an original investigation and after that we coordinated second-era on the grounds that the principle advantage of the third-era examination in crisply tainted people is expanded.

Gower E, et al. [47], top notch data for some nations is rare or missing which is the principle confinement of our late meta-examination. For instance, a progression of cases accessible from Oceania is utilized as an original test for HCV and did not assemble our incorporation Criteria, an all the more as of now linkage think about has demonstrated similar extents of HBV and HCV Infection of HCC cases in Australia, however in this review marker-negative HCC cases are excluded. In some hyper endemic ranges the commitment of HBV disease is thought little of especially in China where HCC cases are went with mysterious of HBV.

Shi Y, et al. [48], we assembled information from numerous hotspots for methodical audit. It is hard to evaluate the effect of heterogeneity of investigative criteria and research center strategies. At last we didn't discover sex particular data (HBV, yet not HCV, is more predominant in men when contrasted with ladies) and different relates of HCC hazard (e.g., liquor and tobacco use and in addition a flatoxin exposure).Apart from these confinements our methodical audit has crucial intensity of permitting the joint evaluation of the two most essential reasons for HCC.

Qureshi, et al. [49], transmission of hepatitis B takes place by poor health facilities which are the result of improper screening as well as unsterilized dental instrument. A survey performed in mohmand agency KPK in 2010 and it was discovered that health sectors totally deprived of health facilities of modern screening, dental services and identification and management of sexually transmitted diseases.

Ali, et al. [50], in the general population of Pakistan used needles are the most important factors in the increase of hepatitis B and C. In case of hepatitis B high re-use of needles produce prostration while excessive use of unprofessional practitioners and lack of awareness among the patients seems to be the basic cause of hepatitis C and both these causes are present in Mardan.

Norman, et al. [51], a major group of danger issues is due to unsafe sexual practices found in those people stay mostly away from home which is common in refugees of Mardan and can result to acquisition of high risk activities such as inject able



drugs and unsex paid sex. Out of 270 HbsAg positive patients 94 were positive for HBV PCR; this study shows that young carrier is empty from HbsAg than adults. In early infected stage the patients have positive HbsAg and they have great viral pack and when the disease increases adults DNA level of serum decreases which is associated with visible antibody that results in the permission of HBsAg.

## Materials and Methods

### Study area

Dir upper is the 26<sup>th</sup> region of Khyber Pakhtunkhwa. Dir was a royal led by Nawab Shah Jehan Khan at the season of independence. It was fused in 1969 with Pakistan and afterward declared in 1970 as a district. The district is divided into lower and upper dir districts in (1996). In the northern part this district is situated. The Chitral district and Afghanistan is situated toward north and North West and toward the east is the Swat district while district dir is situated on the south. A number of rapidly emergent markets are also found apart from dir bazaar. The population is spread more than 1200 towns which are situated in the profound contracted valleys of Panjkora and is provincial. Eminent towns are: Khas dir, Doog Dara, Barawal, Gandigar, Darora, Ganori, Shalkani, Bibyaware, Wari and Usheri. The popular places of dir upper are: Doog Dara, Kumrat Valley, Usheri dara, Shahi koto, Nehag dara, Barawal, Ganori, Nowra, and Lowari top.

### Language and religion

The main language of people inhabiting in dir is Pashto but there are few people who speak other languages. Urdu being national language is also spoken and understood by these people. The inhabitants of dir are totally Muslims. There are some Hindu and Christians which come here from other provinces of Pakistan.

### History of dir upper

History of Dir previously started at least from 2<sup>nd</sup> millennium BC which gives evidence of the excavations of many burials of Aryans at Timargara and some other places, dated from 18<sup>th</sup> to 6<sup>th</sup> century BC. The Achaemenians chase Aryans who were expelled as a result of Alexander invasion in 327 BC, though in defeating local population he faced great difficulties. Greek historians have waged great honour to the population, the army and the queen of Massaga, near the modern Ziarat village an ancient site, which is located between Chakdara and Timargara. The area observed Gandhara Civilization after the Greeks which attained great celebrity. The presence of monumental remains of the Buddhist end and monasteries is indicating by this period, some of them filled the museum of Chakdara. The Yousafzai pathans are accountable for tribal, social, political and economic life of the regions who settled here in 5<sup>th</sup> century AD. Akhund Ilyas Pinda Khel of the Malaizi tribe (1640) was recognized as a religious chief and enjoyed accepted support among locals. His descendents increased their power over the people and build his support and laid the base of a distinctive political state, then called the state

of Nawabs. In 1897 the British invade in Dir and differentiates its boundaries. It still enjoyed the position of a separate state after independence of Pakistan but was merged with Pakistan in 1960 as a tribal organization. In 1969 it was at long last joined as a district with Khyber Pakhtunkhwa. The area Dir was isolated into two regions in particular areas lower and upper Dir having Timergara and Dir as their relevant headquarters. Dir is an important site and as a centre of Gandhara. Historians and pilgrim defined

Gandhara (the land of fragrance and beauty), as "that area which is located at the west of Indus and north of the Kabul waterway which incorporated the Valleys of Peshawar, Swat, Dir and Bajuar widened up to Hadda and Bamiyan in Afghanistan and Taxila valley in Punjab in the east". Therefore Dir region is the under attack of Gandharan civilization and Dir museum located in Chakdara offers a distinctive collection of Gandharan art.

### Geography and topography

Add up to range of region Dir upper is 3699 square kilometres. For the most part the condition of Dir is located in the valley of river panjkora, begin from the Dir Kohistan Mountains and it joins to the river Swat near Chakdara. Dir is totally a region of Rocky Mountains so there is no railway and airport in Dir upper. The most significant mountain range is Hindu Raj. Along the northern borders with Chitral district it keeps running from north east to south west. The entire zone remains snow shrouded in winter. In the western part pile of the area are shrouded with backwoods while in the eastern mountain run Dir Kohistan is found which are ineffective. The head quarter of upper dir is connected with metalled or shingled road runs to all Tehsil head quarters.

### Demography

District Dir upper have 28 union councils and 3 Tehsils namely Dir, sheringal and Wari. Major ethnics groups are Yousafzai, Mishwani and Swati Pashtuns. The population of Dir upper is 899, 00 with 51% males and 49% females according to the region enumeration Report of dir, June (2000):17, as appeared in the figure. As indicated by the District populace profile MSU N.W.F.P (Upper Dir) Islamabad in (2002), the yearly populace advancement is 2.5%. A vast rate of the populace comprises of youngsters due to the high development rate in the district. As per the various Indicators Cluster Survey of N.W.F.P May 2002:84, the literacy rate is 39% in males while 4% in females and life expectation at birth is 61 years. Density of population is 156 people per square kilometre; it means that 4.96% is living in one room. On the basis of Percentage rural population is 96 while urban population is 4. The basic Death rate is 9 per 100 while birth rate is 39 per 1000 in Dir upper. In cases of religious extremism Dir is the reactive district of Pakistan. Religious Political parties are establish in Dir upper which are ANP, JUI, JI and TNSM, while PTI and PML(N) also achieving support of the people day by day. Princely dynasty governed Dir till 1969 and there were no proper services of education, health and road. For the residents transportation and communication are now available (Figures 1,2) .



### Demography

Projected population----2014	890,000
Population Density(person per square kilometre)	240
Percentage of Rural population	96%
Percentage of Female population	49%
Sex ratio ( Males per 100 Females)	103
Percentage of Children (0-5 years)	17%
Percentage of active population ( 15-64 years)	48%v
Dependency Ratio (Percentage)	109%

### Climate and precipitation

The season of summer is moderate and warm while July is the hottest months in Dir upper. In the month of June the most extreme and least temperature is around 33 and 16 degrees centigrade separately. Winter is portrayed by a seriously cool and cruel season. From November onwards the temperature rapidly diminishes and the temperature amid the months of December, January and February ordinarily falls beneath the point of solidification. The recommended most extreme and least temperature amid January is 11 and -2 degrees centigrade respectively. During the month of May and June weather is hot and during moon soon season humidity increases. The weather is cold in Northern region and receives more rainfall while the condition of Southern parts the condition is semi dry. Annual rainfall occurs from 800mm to 1300mm. Rainfall occur generally 60% from December to April and 40% from July to September. Average maximum temperature rises to 38°C whereas average minimum temperature down up to -1.3°C (Figure 3).

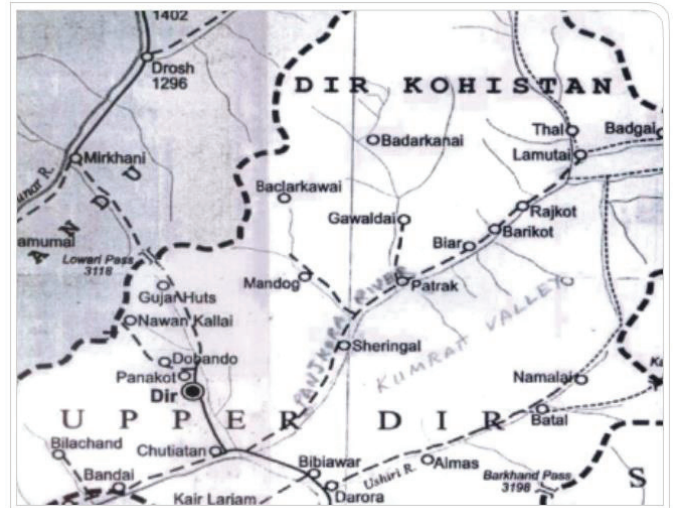


Figure 3: Map of Dir upper.

### Data collection

I used the following instruments and material during my research work. The material which used is: HCV-buffer, centrifuge machine, HBV-serum, water bath machine, jester, report pad, yellow tip, syringe, spirit, swap etc.

This research work has been carried out at DHQ hospital Dir and THQ hospital Wari among various Tehsils of District Dir upper. The individuals selected from 1- 60 years and above than 60 studied during my research work and these patients have exhaustion, fever, cerebral pain, Jaundice (yellow skin and eyes), weight reduction, diminished hunger and regurgitation, dark brown urine, underneath the ribs torment in the correct side of the stomach area are the significant indications. A Performa is prepared which was filled from all those information obtained from these patients. For examination of hepatitis virus we obtained blood from the vein of the patients. The obtained blood is centrifuged and separated the serum and plasma of the blood. The blood is washed in the water bath. The blood is taken with the help of dropper and put into strip. A solution is added to strip to show the correct value of hepatitis. If the serum reached to test line and cross the control line the patients infect with hepatitis and if the serum not reaches to the test line then it give result in negative, thus we can say that the individual is not infected with HBV. Intensity of hepatitis is checked out by immune chromatographic test ICT (a device which show values in positive and negative). The ICT test gives clear information which was conducted through blood serum together after centrifugation of blood at high speed. 10 µL of serum was transmitted to a tube chosen for ICT test further which 3 drops of buffer solution was additionally added for 15 minutes when T line curved dark; it documented the presence of hepatitis infection.

Chemical connected insusceptible sorbent test (ELISA) and polymerase chain response (PCR) likewise utilized for the conclusion of the force of hepatitis. These both methods give values in digit form. Normal ratio of hepatitis is Zero while greater than Zero shows hepatitis infection. PCR is advanced

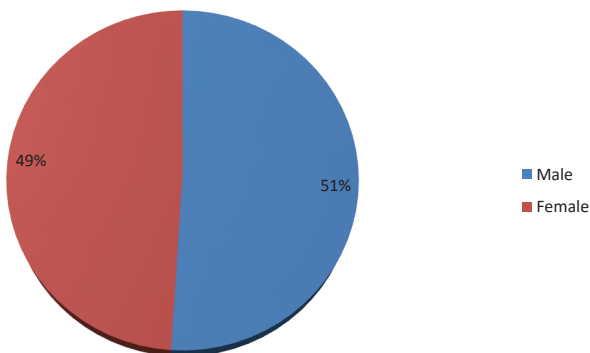


Figure 1: Sex-wise Population Distribution.

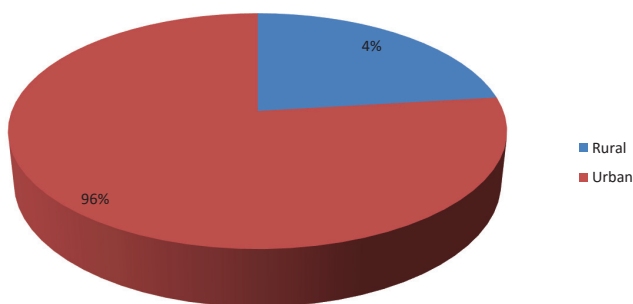


Figure 2: Provincial Urban Population Distribution.





technology than any other technologies mentioned above and highly expensive.

### Statistical analysis

Data was statistically analyzed and tabulated by using Microsoft excel.

### Aims and objectives

- To investigate the commonness of Hepatitis in Dir upper.
- To revise the prevalence of Hepatitis among individuals of various age groups.

### Results

The late review was performed on the pervasiveness of Hepatitis B and C in District Dir upper. This study is conducted on the basis of laboratory reports and voluntarily blood donors in Dir upper. The reports were prepared from different hospitals and Basic Health Units (BHUs). A Performa in which name, sex, age, locality, socio-economic status, home state and previous history of hepatitis is mentioned was shaped. The blood samples of those people were gathered who have sign and symptoms of hepatitis. The route of transmission of hepatitis includes: Food contact with infective persons, contaminated razors in the barber shop, sexual contact with infected individual. Common symptoms are: Fatigue, Fever, Headaches. Jaundice (yellowish skin and eyes), Loss of weight, Decreased craving, Nausea and retching, Bad breath and astringent taste in the mouth, Dark cocoa pee, Pale hued gut movements, Pain in the correct side of the belly, just beneath the ribs (Table 1) (Figure 4).

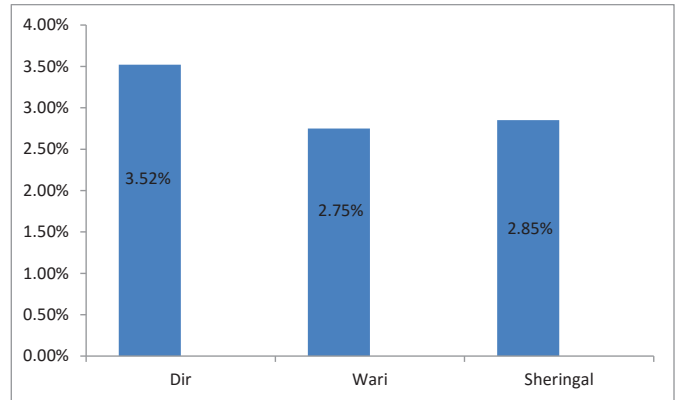
170 blood samples were collected from Dir in which 6 were positive cases and 164 were negative cases. 145 blood films were collected from Wari in which 4 were positive cases and 141 were negative cases. 35 blood films were collected from Sheringal in which 1 showed Hepatitis infection and 34 have no Hepatitis infection. High prevalence was found in Tehsil Dir which was 3.52 % and lowest incidence was found in Tehsil Wari which was 2.75%. 11 samples were positive means have Hepatitis infection and 339 were having no Hepatitis infection out of 350 samples totally collected (Table 2) (Figure 5).

From the totally collected blood films 200 were male and 150 were female cases. All blood films were examined. Out of 350 individuals 11 were positive with having hepatitis. The ratio of positive cases in male out of 200 blood films was 8 i.e. (4%) and in female ratio were 3 i.e. (2%). From the entire collectively blood films 200 were male and 150 were female cases. For the presence of causing agents of hepatitis which was virus species all blood films were examined. Out of 350 individuals 11 were certain with having hepatitis B and C infections. The proportion of positive cases in male out of 200 blood films was 8 i.e. (4%) and in female proportion were 3 i.e. (2%) (Table 3).

In the middle age people the higher infection of hepatitis occurred. Total 168 blood films were studied in age 13-40 in which 8(4.76%) show hepatitis infection and it realized that middle age people are more at risk of hepatitis infection. The

**Table 1:** Tehsil wise prevalence of hepatitis in District Upper Dir.

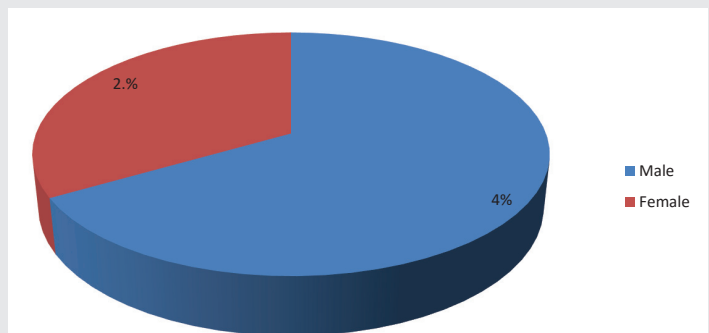
Locality	Total	Positive	Prevalence	Negative	Prevalence
Dir	170	6	3.52%	164	96.47%
Wari	145	4	2.75%	141	97.24%
Sheringal	35	1	2.85%	34	97.14%
Total	350	11	3.14%	339	96.85%



**Figure 4:** Tehsil wise prevalence of hepatitis in District upper Dir.

**Table 2:** Sex wise prevalence of hepatitis in District Upper Dir.

Sex	No of individual examined	No of positive individuals	Prevalence (%)
Male	200	8	4%
Female	150	3	2%
Total	350	11	3.14%



**Figure 5:** Sex wise prevalence of hepatitis in District upper Dir.

**Table 3:** Age wise prevalence of hepatitis in District Upper Dir.

S.NO	Age	No of Individuals	Positive Cases	Prevalence%
1	1-12	50	2	4%
2	13-40	168	8	4.76%
3	41>	82	1	1.21%
Total		350	11	3.14%

blood samples collected from age 1-12, total 50 sample were collected out of which 2(4%) have positive cases. This reveals that the hepatitis incidence is lower in this age as compared to middle age. The blood samples of 82 individuals were collected from the age 41 and above than 41 years and after examination it showed 1(1.21%) positive cases. On the basis of my recently



conducted research work I reported that the higher hepatitis prevalence occur in middle age people as compared to adult and children.

## Discussion

As a consequence of HCV interminable liver sickness it is evaluated that one fourth of a million passing's for each year happens [52]. A present group based review was led in which the estimated estimation of HCV was 6.3% in San Juan and amongst Central and South America in 2001-2002 [53]. In Europe the general prevalence of HCV was about 1%, but it was various amongst different countries [54]. The approximate prevalence of HCV infection in industrial countries during dialysis patients was about 8% to 20% [55] and greater in those countries which are not well industrialized. In Saudi Arabia during 2001 the anti HCV prevalence in dialysis patient was 34.9% [56]. HCV prevalence ratio was 5.31% in Islamabad through the study which carried out in the hospital [57]. To revise the prevalence of active HCV and molecular viewing of HCV in district Bannu a highly pattern protocol was required. In the recent study highly sensitized method of detection is used. Among the adults of the district Bannu the study was conducted which show that infection is about 2.70% in the age 15-17. Due to less contact to transfusion factors like contact to barber, blood transfusion and body piercing etc HCV was found in slightest ratio in this age.

In the age group from 23-26 the HCV recorded was 5.55% which is greater among all age group. Homosexual behaviour was too much among street children who are suffered sexually; later on they adopted commercial sex to raise their income. The prevalence ratio of 17.24±7.98% was observed among the male homosexual population because they use very slight condom [58]. Different route of HCV transmissions are showed by the histories of these young adults. Among these adults the probable route of transfusion were dental surgery, blood transmission, homosexuality and heterosexuality in both males and females, among the adults of these age prostitution in female were the peak hazard issue [2]. Concentrated the commonness of HCV in different age aggregates in which the predominance in males was more noteworthy than females as same to our review in which pervasiveness is more prominent in male when contrasted with females. The young male adults were more affected as compared to young females. Young female adults were fewer stained with HCV because route issue responsible like barber as well as estrogens hormones assume an essential part in the diminishing of HCV ailment in females [59]. The safe arrangement of the body assumes a crucial part in the freedom of infection from the body. At the point when reaction of the body cells are solid to HCV disease then it will evacuate the infection or devastate it and when reaction is frail then with the progression of time HCV contamination get to be develop and create perpetual contamination become build up and produce chronic infection [60]. Immunologic disorder leads to chronic hepatitis C which is about 38% [61]. The greater prevalence of hepatitis and other diseases is greater in males than females because they travel to other cities and provinces in search for improved jobs; hence they receive various infectivity in this process. In these industrial cities they acquire analysis

during their stay and treated early for their infectivity and may not calculate in the infected population, but when they go to their local land, they transmitted these illnesses to their partners and other female inhabitants. These females is not identified and treated due to poor health facilities because they are usually confined to their homes and city and hence may calculate in the infected population. In males the ratio of HBV infection is much high as compared to females because males are working outside their native lands and visiting to barber shops as well as their engagement in blood donation and transmission practices. Countries such as Pakistan, Iran, India, Bangladesh, Israel and Italy the HBV transmission takes place by blade sharing and equipments related to barber [62]. Hepatitis C and B virus disease occurs through blood transmission and it is a potential risk factors [63]. Examined normality of positive cases as for as HBsAg in the sera of 428 assembly line labours in beach front city of Yantasi (China) and recognized pinnacle pervasiveness in China. Another review demonstrated the contamination rate of hepatitis B in processing plant work which was lower than Beijing populaces values reported right on time in 980s [64-73]. The late review depends on the commonness of HBV among those male working in industrial facilities of Gujranwala. This review has a few confinements as well. At first the review is directed on the premise of good example measure however there is still need to lead consider on bigger level including socio statistic information of the subjects. Also for the examination the example size ought to be much extensive as per nature of the business. This review points that to research that there is require a fundamental need to accept such reviews in different populaces to such an extent that populaces having more noteworthy commonness can be known and techniques can be created for the shirking and treatment of these viral diseases.

## Conclusion and Recommendation

Generally the commonness of HBsAg and hostile to HCV is diminishing. The gathered examples of high pervasiveness zone presented a genuine medical issue which require adjustment of separate preventive courses in the restorative and social ways and open cognizance operations for training of masses for anticipation. HBV infection prevalence is different with population which live in various regions of Dir upper. In Dir upper peak HBV prevalence is present in Afghan refugees, IDUs, health care professionals, skilled blood donors, prisoners and several transmission patients with HCC, psychiatric patients, common population of some specific areas such as Darora, Dir and Usheri. Barawal, Kohistan, Wari, Gandiger. Both host and viral issues are involved in molecular and cellular mechanism of HBV infection.

Some of the evidences recognized the viruses in saliva as a useful source of set ups disease and results of therapy or vaccination. In oral fluid the viral hepatitis sign are present which show that they can easily be used for identification purposes with less sensitivity. The illness by hepatitis virus is more general in native people as compared to foreigner people. Preventing the distance between native and non-native ratio it will be necessary to focus on tries to amplify HAV and HBV vaccination among affected indigenous population and





make sure the environment that do not cause transmission of the disease. Formally adequate starting to reduce giving medication to indigenous people leads to help in the decreasing of HCV infection. It is concluded from the recent study that male outpatients are slightly subjected to infection of HBV than female patients. The peak infection of HBV ratio was found in Patients of 13-40 age group and mostly the suffered individuals were recorded as little viral loads. One of the most general and chronic infectious disease of world is Hepatitis B. Approximately 350 million people are presently counted is continual carrier of hepatitis B virus (HBV) worldwide and every year around one million persons die from HBV infection i.e. liver cirrhosis and hepatocarcinoma HBV is a DNA virus.

## Recommendation

- The recent study shows that local community is unaware about the causes of Hepatitis.
- Government needs to teach people through media, workshops etc.
- The Hepatitis awareness programmes should be beginning so as mindful the people about its signs and symptoms, transmission, treatment etc.

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