

Prevalence of Leprosy in District Buner, Khyber Pakhtunkhwa, Pakistan

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ABSTRACT

Background: Leprosy, commonly referred to as Hansen's disorder, is caused by the obligatory intracellular acid-fast bacilli *Mycobacterium leprae* and is predominantly transmitted by inhalation macrophages. It causes infection of the skin and nerves, as well as neurological damage due to inflammation.

Aim: The current study was conducted to determine the prevalence of leprosy disease in District Buner, Khyber Pakhtunkhwa, Pakistan. During the investigation, we reported different types of leprosy.

Methods: The current study investigates 467 patients from 1965-2000 in six Tehsil and 74 from 2000-2021. In the reported five types of Leprosy, Lepromatous Leprosy is more common than other types. Leprosy has five subtypes which 2 are Tuberculoid (TT), Lepromatous Leprosy (LL), and 3 are borderline types Leprosy Borderline tuberculoid (BT), Borderline (BB), borderline lepromatous (BL).

Results: In the study area, the Lepromatous type of leprosy was abundant in the population of district Buner. The percentage of lepromatous leprosy from 2000 to 2021 is 38%, Borderline 9.5%, Borderline tuberculoid 31%, Borderline lepromatous 18%, Tuberculoid Leprosy 3%, Tuberculoid Borderline 3.1%. Leprosy disease is primarily reported in the male population as compared to females. Now we classified leprosy into two groups which are multibacillary and paucibacillary. Paucibacillary (PB) are single lesion paucibacillary and those with two to five lesions. Multibacillary (MB) with six or more lesions. We determined the age-wise distribution of the percentage of patients with ages of 20-40 years 70.5% males, 29.4% females, age of 40-60 years, 58.0% males and 29.0% females, age of 60-80, 58.6% males and 14.2 % females, age of 80-94 in which 100% males and 0% females and age of 111 are only one patient male 100% and female 0%. We also investigated the Tehsils-wise distribution of patients from 2000 to 2021. Tehsil Dagger consists of 36% of patients, and Tehsil Gadezai consists 19%, Tehsil Mandan consists of 14%, Tehsil Khudukhail consists 2%, Tehsil Salarzai consists of 17% and Tehsil Chagarzai 12%.

Practical Implication: The significance of the present study to find the demographic influences related with leprosy, analyze the prevalence of leprosy among different age groups, assess the awareness and knowledge about leprosy among people living and investigate any health services available to people affected by leprosy.

Conclusion: The current study was conducted to determine the prevalence of leprosy disease in District Buner, Khyber Pakhtunkhwa, Pakistan. During the investigation, we reported different types of leprosy. Now we classified leprosy into two groups which are multibacillary and paucibacillary. Paucibacillary (PB) are single lesion paucibacillary and those with two to five lesions. Multibacillary (MB) with six or more lesions.

Keywords: Leprosy; *Mycobacterium leprae*; Multibacillary; Paucibacillary; Prevalence; Buner

INTRODUCTION

Mycobacterium leprae is the causative agent of the chronic infectious illness leprosy. Peripheral nerves and the skin are its primary targets. It is also known as Hansen's disease. With early diagnosis and treatment, the disease can be cured. The bacterium *M. leprae* is a tiny rod-shaped, nonmotile, gram-positive, thick-walled bacillus that is acid- and alcohol-fast¹. It thrives best in the temperature range of 27 °C–30 °C (81–86 °F) and is an obligate intracellular parasite that cannot multiply or grow outside of an animal host. Up to 5 months in the environment, *M. leprae* may stay alive. *M. leprae* infections often cause nerve damage by infecting Schwann cells (SCs), a prominent target cell type. One of the most prevalent host cells that mycobacteria come into touch with is the macrophage². The genome of *Mycobacterium leprae* (3.3 Mb) is much less than that of *Mycobacterium tuberculosis* (4.4 Mb)³. Human cases of lepromatous leprosy carry the most significant load, and the nasal mucosa of healthy contacts has also been reported to contain *M. leprae*. The incubation period of leprosy is variable and usually ranges from 2-7 years, on an average of 3-5 years. Depending upon the clinical, pathological and bacteriological features, leprosy can be classified into indeterminate and determinate Leprosy⁴. Determinate leprosy has five subtypes: 2 types are Tuberculoid (TT) and Lepromatous (LL) leprosy, and 3 borderline types Borderline tuberculoid (BT), Borderline (BB) and borderline lepromatous (BL) leprosy. Tuberculoid Leprosy (TT) is at one pole, where no acid-fast bacilli

are found in the lesion(s). The patients have a high cell-mediated immunity (CMI) to *M. leprae*. The number of lesions is 1-3, of any size and can occur anywhere on the body. 18 years ago, leprosy was declared to have been "eliminated as a public health problem" worldwide. In endemic regions, however, new cases are still found, and 9 out of every 100 newly diagnosed patients now are children. In a recent study, the National Leprosy Elimination Programmed said that 8.7% of the estimated 135,485 new leprosy cases in India were in youngsters. In 2001, the whole *M. leprae* genome (from a patient in Tamil Nadu, India) was sequenced. The *Mycobacterium tuberculosis* genome has 91% protein-coding genes and 4000 protein-coding genes, while the human genome had only 49.5% protein-coding genes and 1614 protein-coding genes. Additionally, the TN genome of *M. leprae* had 50 genes that produce 50 stable ribonucleic acids (RNAs). It has the smallest and most abundant adenine and thymine (A+T) genome of any mycobacterium that is currently known⁴⁻⁸. Leprosy is thought to spread by prolonged, intimate contact between a vulnerable person and a patient who has the bacillus, maybe through the inhalation of flu droplets or nasal secretions containing the bacilli. The nasal mucosa is the primary route of transmission. Skin erosions are a less prevalent method of transfer. Insect bites, blood, vertical transfer, and breast milk, are other channels of infection⁹. It is difficult to pinpoint where or when leprosy was acquired since the *M. leprae* bacterium that causes it has a long period of incubation (time before symptoms develop) and is not extremely infectious. Children are

more vulnerable than adults to get the illness¹⁰. It is understood that an intracellular, aerobic, acid-fast bacillus of the Mycobacterium class *M. leprae* or *M. lepromatosis* is the source of the infectious illness. There are two basic classifications of illness depending on the number of bacteria: paucibacillary (five or less) and multibacillary (more than five). They may be distinguished by the amount of hyperesthetic skin patches and the bacterial count. In vitro cultivation of the organism is not possible¹¹. Typically, leprosy symptoms start to show up three to five years after a person contracts the disease-causing bacterium. Hands, arms, feet, and legs without feeling or with little feeling. weakened muscles, harm to the eyes (dryness, decreased blinking) skin stiffness and rashes. Globally, there were 210,758 newly diagnosed leprosy cases in 2015. The WHO reported that 60.2% of leprosy cases that were reported in 2015 were multibacillary. Patients made up 38.8% of women¹². More than 200,000 new cases of leprosy are still recorded each year, mostly in India, Brazil, and Indonesia, despite the World Health Organization's (WHO) 2000 achievement of the disease's eradication objective, which was a worldwide prevalence rate of 1 patient per 10,000 people. In 2018, 208,619 new cases of leprosy were recorded worldwide, according to WHO statistics based on reports from 159 countries. At the end of 2018, 184,212 instances (or 0.2/10,000) of the prevalence were documented globally. For the whole year of 2018, 79.6% of all new leprosy cases were in Brazil, India, and Indonesia. In 2018, 96% of cases globally were concentrated in 23 priority nations¹¹⁻¹³.

The three first-line medications Dapsone, rifampicin, and clofazimine are used in the outpatient treatment of leprosy according to 1982 WHO standardised regimens. MDT or polychemotherapy (PCT) is the name of this organisation. Dapsone, also known as sulfone (diaminodiphenyl sulfone - DDS), mostly exhibits bacteriostatic effects with little bactericidal activity. It most likely has an antagonistic effect on para-aminobenzoic acid (PABA), preventing *M. leprae* from using it to make folic acid. It is well-tolerated and has a variety of adverse effects, most of which do not need stopping the medication¹⁴⁻¹⁶.

To identify the demographic factors associated with leprosy in the district of Buner, the present study aimed to carry out the following objectives.

- To analyze the prevalence of leprosy among different age groups in the district Buner.
- To assess the awareness and knowledge about leprosy among people living in the district of Buner.
- To investigate any health services available to people affected by leprosy in the district of Buner.

MATERIALS & METHODS

Introduction to District Buner: Buner is located in the north of Khyber Pakhtunkhwa and shares borders with upper Swat to the north, Malakand Agency to the west, Mardan District to the south, and Hazara Division to the east. Buner is a Sanskrit word which means forest, which seems true because Buner is rich in forestry. Between 34°-9' and 34°-43' N latitude and 72°-10' and 72°-47' E longitude is Buner, which has a 1760 square kilometre area. The Buner district has a mild climate. The summer months in the lower Buner are hot, whereas the elevated parts (Gadezai and Gokand) are pleasant. Short and mild summers are common. It seldom gets hotter above 40° C at this time of year. November to February are the coldest months of the year. During this season, it rains and snows. Due to the extreme cold, people go to the lower part of the district, where they stay until the snow melts.

Six Tehsils, Tehsil Daggar, Tehsil Gagra, Tehsil Gadezai, Tehsil Mandan, Tehsil Chagharzai, and Tehsil KhodoKhal, make up the district (**Figure 1**).



Figure 1: Map of District Buner (Accessed online at <http://www.wfp.org>, 2021)

Diagnosis standards: Leprosy Diagnosis Standard WS291-2018 and the Leprosy Prevention Manual for Primary Care Physicians (PCPs) served as the foundation for diagnosing new or recurrent Leprosy (NHCC, 2018). A patient was considered a "recurrent case" if they had finished the recommended course of therapy and were free of symptoms but still had clinical, microbiological, or histological signs that the disease had returned after being clinically cured (clinical inactivity). Depending on the level of skin-smear positivity, cases were categorized as having MB or PB (paucibacillary) leprosy. The time between the onset of the illness and the leprosy diagnosis was used to define the time to diagnosis (WHO, 1982).

The WHO's 1998 Disability Classification Standard for Leprosy served as the foundation for the classification of disabilities. The disability grading system was significantly modified in 1988 by the WHO Expert Committee on Leprosy into a three-grade (0, 1, and 2) rating system. Leprosy-related symptoms in patients with grade 0 disabilities include no loss of sensation, no obvious deformities, and no eye issues. Leprosy-related sensory loss or visual issues are present in patients with grade 1 disabilities, but no apparent deformities exist. Patients with a grade 2 disability have a severe visual impairment or a noticeable disfigurement. Lagophthalmos, iridocyclitis, and corneal opacities were added to the grade 2 criteria, and the Committee approved this grading system in 1998 (WHO, 1998).

Data collection and source of sampling: All leprosy cases (new, recurring, and prevalent) were obtained from the District Headquarters Hospital (DHQ) at Daggar District Buner's Outdoor Patients Department (OPD). The District government established the leprosy management and prevention department (LMPD) at DHQ in 1998. The LMPD reports data on newly diagnosed patients, those undergoing treatment, and those who have been cured and achieved lifelong management, creating a detailed and comprehensive database. Information about all facets of leprosy management is also included in the LMPD, along with information about disease discovery and diagnosis. In terms of managing medical records, it assists in case management and successfully oversees the management of patients and their immediate family members. Leprosy patient data from 2000 to 2021 was gathered from paper records and entered into LMPD in 2021.

Statistical analysis: An EXCEL 2021 spreadsheet has established a new and recurring leprosy cases database. The χ^2 test for trend was used in the analysis of the data. SPSS Statistics 19.0 (IBM Corp., Armonk, NY, USA) was used to conduct the statistical analysis.

RESULTS

During the study, we reported different types of leprosy. The current research investigates 467 patients from 1965-2000 in six Tehsil and 74 from 2000-2021. The percentage of lepromatous

leprosy from 2000 to 2021 is 38%, Borderline 9.5%, Borderline tuberculoid 31%, Borderline lepromatous 18%, Tuberculoid Leprosy 3%, Tuberculoid Borderline 3.1%. Now we classified leprosy into two groups which are multibacillary and paucibacillary. Paucibacillary (PB) are single lesion paucibacillary and those with two to five lesions. Multibacillary (MB) with six or more lesions. We also determined the age-wise distribution of the percentage of patients with ages of 20-40 years 70.5% males, 29.4% females, age 40-60 years, 58.0% males and 29.0% females, age 60-80,

58.6% males and 14.2 % females, age of 80-94 in which 100% males and 0% females and age of 111 are only one patient male 100% and female 0%. Leprosy has five subtypes which 2 are polar Tuberculoid (TT), Lepromatous Leprosy (LL), and 3 are borderline types Leprosy Borderline tuberculoid (BT), Borderline (BB),borderline lepromatous (BL). In the study area,the Lepromatous type of leprosy was abundant in the population of district Buner. The leprosy disease was mainly reported in males (**Table 1**).

Table 1: shows Leprosy types, yearly age, gender and Tehsils-wise distributions and percentages.

Types of Leprosy		Yearly age		Gender percentage		Tehsils wise distributions & percentage	
Types	Percentage	Age	Percentage	Male	Female	Tehsil Gadezai	19%
Lepromatous Leprosy	38%	20-40	17	70.5	29.4	Tehsil Mandan	14%
Borderline Leprosy	9.5%	40-60	31	58.0	29.0	Tehsil Khudukhail	2%
Borderline tuberculoid	31%	60-80	21	58.6	14.2	Tehsil Dagger	36%
Borderline lepromatous	18%	80-94	4	100	0	Tehsil Salarzai	17%
Tuberculoid leprosy	2%	111	1	100	0	Tehsil Chagarzai	12%
Tuberculoid Borderline	1						

Tuberculoid Leprosy (TT): Limited illness and few bacteria in the skin and nerves are characteristics of tuberculoid leprosy. One or a few hypo- or hyperpigmented cutaneous macules exhibiting loss of a sense (anaesthesia) as a result of an infection of the peripheral nerves supplying the area are the hallmarks of paucibacillary (PB), or tuberculoid, Hansen's disease.

Lepromatous Leprosy (LL): Patients with leprosy are infected by numerous bacteria and the common sickness. The lepromatous, more serious type of the illness. It causes muscular weakness, numbness, and skin lumps and rashes (multibacillary leprosy). Additionally, the male reproductive system, nose, and kidneys may be affected. Compared to tuberculoid leprosy, it is more infectious (**Figure 2**).



Figure 2: Illustrations of Multibacillary Leprosy infected feet

Borderline Tuberculoid: Leprosy that is mild and less severe. Only one or a few patches of flat, and light-colored skin (paucibacillary leprosy) are present in those with this kind. Due to nerve damage, the afflicted skin region may feel numb. Fewer people get Tuberculoid Leprosy than other types of it.

Borderline (BB): These leprosy patients have lepromatous and tuberculoid symptoms.

Borderline lepromatous (BL): Patients that are borderline lepromatous may also have dimorphic lesions. They often exhibit symmetrical, bilaterally dispersed lesions with many tiny, irregularly shaped nodules and papules. Although largely lepromatous in nature, these lesions also include elements of tuberculoid lesions (**Figure 3**).

Currently, leprosy is divided into two types: paucibacillary and multibacillary. For practical reasons, more simple systems for dividing leprosy into infectious (multibacillary) and noninfectious (paucibacillary) types were established. WHO promoted a predominantly clinical approach to patient diagnosis and classification (WHO,1994); see **Table 2** and **Figure 4**.



Figure 3: Representation of Multibacillary Leprosy infected heel (calcaneus)

Table 2: Reported types of Leprosy disease and percentage

Types of Leprosy	No patients from 2000 to 2021		% of patients
	Male	Female	
Lepromatous Leprosy (LL)	23	5	38
Borderline (BB)	5	2	9.5
Borderline tuberculoid (BT)	16	7	31
Borderline lepromatous (BL)	10	3	18
Tuberculoid Leprosy (TT)	2	0	3
Tuberculoid Borderline (TB)	1	0	1.4

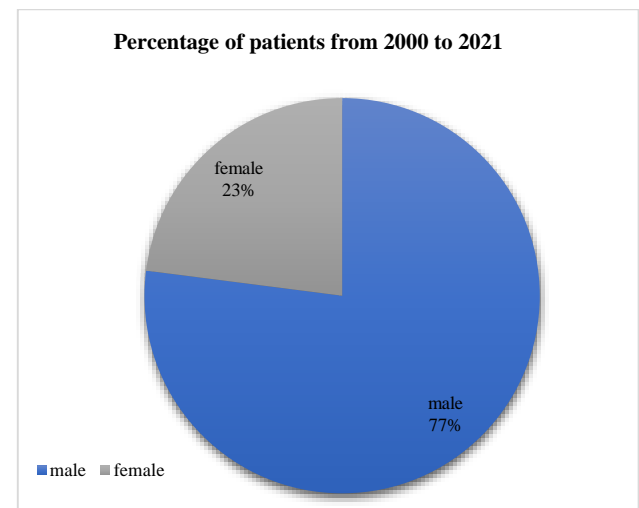


Figure 4: shows us the percentage of males and females from 2000 to 2021.

Six forms of leprosy are shown in Table 2 and Figure 4, including lepromatous leprosy, borderline leprosy, borderline tuberculoid, borderline lepromatous, and tuberculoid leprosy. According to the present chart, lepromatous leprosy will be more prevalent than other forms between 2000 and 2021. There are 23

male and 5 female infected individuals with lepromatous (LL) type leprosy. The Borderline (BB) group consists of 5 men and 2 women. Borderline lepromatous (BL) has 10 males and 3 females, borderline tuberculoid (BT) has 16 men and 7 females, borderline tuberculoid leprosy (TT) has 2 males and 0 females, and borderline tuberculoid (TB) has one male (Figure 5).

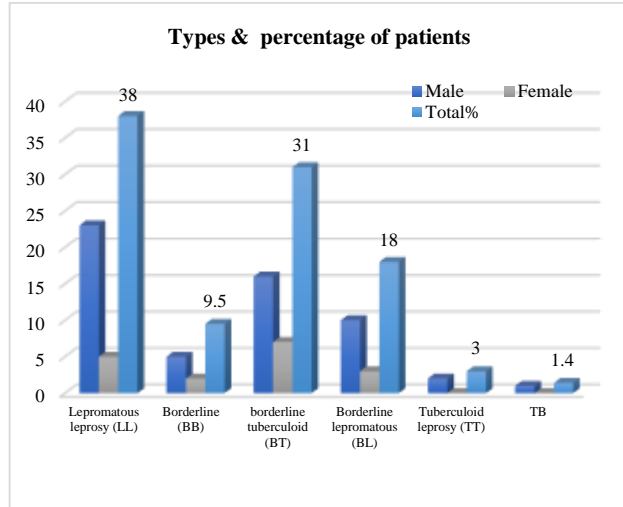


Figure 5: shows the types of leprosy and also the percentages

The ratio of Leprosy disease in humans with age in district Buner. Age is divided into five following categories.

1. 20 to 40 years
2. 40 to 60 years
3. 60 to 80 years
4. 80 to 94 years
5. One patient is 111 years (Table 3)

Table 3: Show the Ratio, Gender and Age

Yearlyage of the patient	Noof patient	Gender		Percentage of patients	
		Male	Female	Male	Female
20-40	17	12	5	70.5	29.4
40-60	31	18	9	58.0	29.0
60-80	21	18	3	58.6	14.2
80-94	4	4	0	100	0
111	1	1	0	100	0

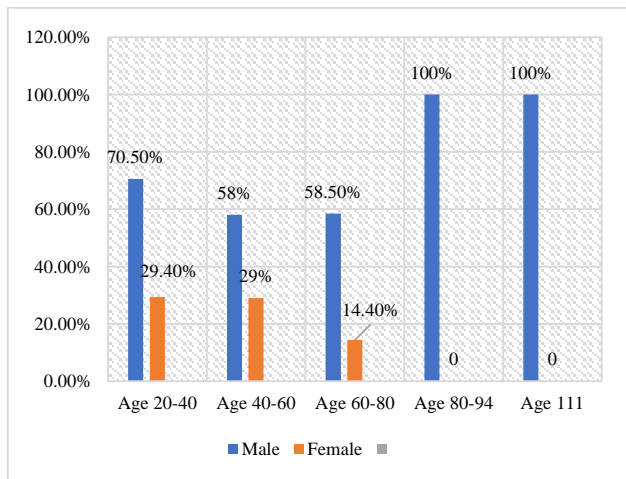


Figure 6: shows us the Age wise percentage of males and females

The table also shows us the patients in the given years and their genders. The no of patients years 20-40 is 17, of which 12 are

males and 5 are females; for age 40-60, 31, with 18 males and 9 females. The age of 60-80 patients is 21, of which 18 are males and 3 are females. The age of 80-94 is 4, all males, and there are no females, and the number of patients in the age of 111 is 1 male. The following study and table show us that the ages of 40-60 are more infected than patients of other ages. And the infected patients are males. Males are more infected as compared to females (Figure 6).

Table 4: Total leprosy patients registered in district Buner from 10/9/1965 up to 31/12/2021

Tehsil wise distribution	No of patients	Percentage of patients
Tehsil Gadezai	90	19%
Tehsil Mandanr	65	14%
Tehsil Khodokhail	8	2%
Tehsil Daggar	168	36%
Tehsil Salarzai	82	17%
Tehsil Chagharzai	54	12%

Table 4 shows the Tehsil-wise distribution of leprosy from 1965 to 2021. Leprosy in humans in different Tehsil of district Buner and its ratio different from each other Tehsil Ghadezai consists of 90 patients the percentage is 19%. Tehsil Mandan 14% contains 65 patients. Tehsil Khodokhail 2% has 8 patients. Tehsil Daggar 36% consists of 168 patients, Tehsil Salarzai 17% consists of 82 patients, and Tehsil Chagarzai 12% consists of 54 patients (Figure 7).

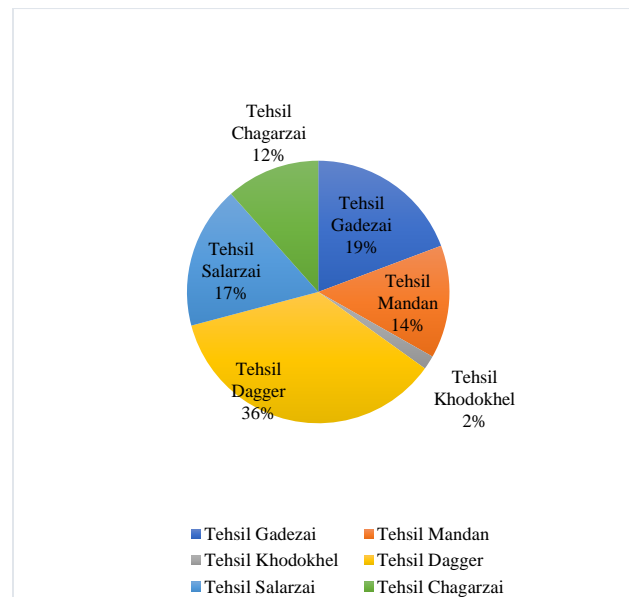


Figure 7: displays Tehsils-wise distributions of leprosy disease

DISCUSSION

Mycobacterium leprae causes leprosy, a persistent granulomatous infection that affects the upper respiratory system, skin, and peripheral nerves. Leprosy is often misunderstood in the community as a cursed illness. Leprosy patients who experience neuropathic pain have varying levels of quality of life around the globe. Droplets or intimate contact with a leprosy patient may spread the disease from person to person. Leprosy is classified into two categories by the World Health Organisation (WHO), paucibacillary (PB) and those with two to five lesions. Six or more multibacillary (MB) lesions. In order to ascertain the prevalence of the leprosy illness in District Buner, Khyber Pakhtunkhwa, Pakistan, the present research was carried out.

In the present study, we investigate 467 patients from 1965-2000 in six Tehsils and 74 from 2000-2021. Leprosy has five subtypes which 2 are Tuberculoid (TT), Lepromatous Leprosy (LL),

and 3 are borderline types Leprosy Borderline tuberculoid (BT), Borderline (BB), Borderline lepromatous (BL). The percentage of lepromatous leprosy from 2000 to 2021 is 38%, Borderline 9.5%, Borderline tuberculoid 31%, Borderline lepromatous 18%, Tuberculoid Leprosy 3%, Tuberculoid Borderline 3.1%. Leprosy disease is primarily reported in the male population as compared to females. In the study area, the Lepromatous type of leprosy was abundant in the population of district Buner.

Similarly, at Donorojo Hospital in Indonesia's Japare area,¹⁷ studied the Quality of Life in Leprosy Patients with Neuropathic Pain. In each area, they observed that leprosy patients with neuropathic pain had varying quality of life. At Donorojo Hospital, they noticed that patients between the ages of 19 and 59 had leprosy and neuropathic pain. The prevalence of other medical disorders is the other factor that influences activity restriction. Compared to the Paucibacillary type, the multibacillary type has greater restrictions. In the current study, we reported 74 patients from 2000-2021 with different Leprosy types in District Buner KPK, Pakistan. In our study, the patients aged 20-40 are 17, of which 70.5% are males, and 29.4% are females. 40-60 patients are 31, with 58.0% males and 29.0% females. 60-80 are 21, with 58.6% males and 14.2% females. 80-94 are 4, 100% males and 0% females. The age of 111 is 1, 100% males and 0% females.

The most prevalent type of leprosy, borderline tuberculoid (BT) leprosy presents with significant, well-to-ill-defined hypopigmented patches, according to study conducted at the Department of Dermatology at S. Nijalingappa Medical College in Bagalkot, Karnataka, India. There were 12 patients in total 8 men and 4 women with a median age of 25. A borderline tuberculoid leprosy dermoscopy was described¹⁸. The most prevalent form of leprosy, known as borderline tuberculoid (BT) leprosy, manifests as substantial, well-to-ill-defined hypopigmented patches. There were 12 patients in total 8 men and 4 women with a median age of 25. We also investigated Borderline tuberculoid Leprosy in District Buner. In the present study, we reported 23 cases of Borderline Tuberculoid from 2000 to 2021, of which 16 are males and 7 are females.

At the Federal University of Pará in Brazil revealed *Mycobacterium lepromatosis* as a Second Agent of Hansen's Disease. In 2008, an entirely novel species and the second known cause of Hansen's disease (HD, or leprosy), *Mycobacterium lepromatosis*, was discovered. The transmission of *M. leprae* from armadillos has made HD a recognised zoonosis, however, it is unclear if *M. lepromatosis* serves as a zoonotic agent for HD. We also revealed *Mycobacterium Leprae* (*M. Leprae*), the first known cause of leprosy. Peripheral nerves and the skin are the major areas affected. The condition may be treated with early detection and care. *M. leprae* is a Gram-positive, non-motile, thick-walled bacillus that has a short rod-like form and is acid- and alcohol-fast¹⁹.

Characteristics of Grade 2 Disability in Indonesian Children with Leprosy: A Five-Year Multicenter Retrospective was investigated. Leprosy in children under the age of 15 is prevalent in endemic regions, according to their findings. The World Health Organisation (WHO) recorded 202,185 new leprosy cases from 127 countries in 2020, resulting in a prevalence of 0.2 per 10,000 people, with 14,981 (7.40%) cases affecting children. In the course of the five-year research period, 132 instances were determined to be new cases of leprosy in children. Among the patients, there were 55 women and 77 men, or 58.33 and 41.63% respectively. The age range of 13 to 14 years old (47.73%) had the greatest incidence. We also investigated that District Buner Khyber Pakhtunkhwa Pakistan from 1965-2021 have no cases of leprosy below 20 years²⁰.

Socioeconomic Determinants of Leprosy New Case Detection in the 100 Million Brazilian Cohort: A Population-Based Linkage Study in Brazil was published. Leprosy was described as a sickness of poverty. The risk of leprosy in Brazil rose, according to an examination of 23 899 942 people, including 18 518 leprosy sufferers. The underprivileged people in Brazil's lowest half have

the highest risk of contracting leprosy. In District Buner KPK, where lepromatous leprosy incidences are prevalent and more frequent in men than in females, we recorded 541 cases between 1965 and 2021²¹.

A pair of cases of juvenile lepromatous leprosy were reported in Brazil. In 2020. Poor cellular immunity and rapid bacillary proliferation characterise lepromatous. They mentioned two cases of leprosy in children. Male patient number one is 13 years old, and he began to have symptoms in 2014. The second patient was a thirteen-year-old Brazilian guy from Brazil²². Lepromatous leprosy may not always be present in adolescents and teens, but its characteristic symptoms are more prevalent in adults. From 2000 to 2021, we looked at whether the Lepromatous kind of leprosy was more prevalent than other varieties in the District of Buner, Khyber Pakhtunkhwa. There are 23 male and 5 female infected individuals with lepromatous (LL) type leprosy. At a similar vein reported treating leprosy at the dermatology department of New Delhi, India, and they suggested that the MDT regimen composed of Dapsone, Clofazimine, and Rifampicin would form the basis of the current leprosy therapy. In our current study, we also reported We investigated the treatment of leprosy are same everywhere, and the treatment is MDT which consists of Rifampicine, Clofazimine and Dapsone. We use Leprosy Rifampicin 600 mg per month, Clofazimine 100mg and Dapsone 100mg. They are the monthly dose for patients. If the urine colour is yellow, we provide a supervisor dose composed of 50mg clofazimine and 100 mg Dapsone daily reported a case of borderline lepromatous leprosy with 4 years of evolution and cutaneous lesions of difficult diagnosis in the National Health System in Images in tropical dermatology. Borderline lepromatous leprosy manifests itself by a large number of lesions. We also reported Borderline lepromatous patients to have dimorphic lesions. These lesions are primarily lepromatous but also contain an aspect of tuberculoid lesions. In the present study, we reported 13 patients of borderline lepromatous from 2000-2021, of which 10 are males and 3 are females²³.

Hansen's illness was reported at the Department of Community Medicine of India's Andaman and Nicobar Islands. 101 cases of leprosy were recorded, of which 23 (22.77%) were paucibacillary cases and 78 (77.23%) were multibacillary cases. In the islands, leprosy cases have been rising and are now impacting more adult men. In District Buner, Khyber Pakhtunkhwa, Pakistan, we also recorded Multibacillary cases. More often than paucibacillary, multibacillary cases. In the present research, we found that 73 percent of patients had multibacillary, and just 2% had paucibacillary²⁴.

CONCLUSION

The current study was conducted to determine the prevalence of leprosy disease in District Buner, Khyber Pakhtunkhwa, Pakistan. During the investigation, we reported different types of leprosy. Now we classified leprosy into two groups which are multibacillary and paucibacillary. Paucibacillary (PB) are single lesion paucibacillary and those with two to five lesions. Multibacillary (MB) with six or more lesions. We also investigated the ratio of gender and Tehsils-wise data of leprosy. The current study investigates 467 patients from 1965-2000 in six Tehsil and 74 patients from 2000-2021. In the reported five types of Leprosy, Lepromatous Leprosy is more common than other types. Leprosy has five subtypes which 2 are Tuberculoid (TT), Lepromatous Leprosy (LL), and 3 are borderline types leprosy Borderline tuberculoid (BT), Borderline (BB), Borderline lepromatous (BL).

Moreover, in the study area, Lepromatous type of leprosy was abundant in the population of district Buner. The percentage of lepromatous leprosy from 2000 to 2021 is 38%, Borderline 9.5%, Borderline tuberculoid 31%, Borderline lepromatous 18%, Tuberculoid Leprosy 3%, Tuberculoid Borderline 3.1%. Leprosy disease is primarily reported in the male population as compared to females. We also investigated the Tehsils-wise distribution of patients from 2000 to 2021. Tehsil Dagger consists of 36% of

patients. Tehsil Gadezai consists of 19%, Tehsils Mandan consists of 14%, Tehsil Khudukhail consists 2%, Tehsil Salarzai consists of 17% and Tehsil Chagarzai 12%. We determined the age-wise distribution of the percentage of patients with ages of 20-40 years 70.5% males, 29.4% females, age of 40-60 years, 58.0% males and 29.0% females, age of 60-80, 58.6% males and 14.2 % females, age of 80-94 in which 100% males and 0% females and age of 111 are only one patient male 100% and female 0%.

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