A Retrospective Study of the Profile of Leprosy Patients

Dr. Suveksha Shaurya Shah
Intern Doctor, MBBS
Tribhuvan University, Nepal

INTRODUCTION

- Nepal has achieved elimination of Leprosy as a public health problem in 2009 and declared elimination in 2010.
- Still we have seen the cases of leprosy being reported.
- Our study aims to determine the number of patients with :
- Leprosy and Lepra reactions
- determine the category of leprosy that they fall on
- the grade of disability and presence of ulcer among them
- the bacterial load in skin slit smear examination through histopathology, from January 2019 to January 2024.

OPERATIONAL DEFINATION

Paucibacillary (PB) case:

a case of leprosy with 1 to 5 skin lesions, without demonstrated presence of bacilli in a skin smear.[9]

Multibacillary (MB) case:

a case of leprosy with more than five skin lesions;

or with nerve involvement (pure neuritis, or any number of skin lesions and neuritis);

or with the demonstrated presence of bacilli in a slit-skin smear, irrespective of the number of skin lesions.[9]

Lepra Reaction Type 1:

Manifestation in Skin: Existing Leprosy lesions become red, warm, swollen and tender

Manifestation in the nerve: Acute Neuritis

Lepra Reaction Type 2:

- It is also known as erythema nodusum leprosum or ENL mainly occurs in patient with high bacillary load.
- The key diagnostic feature is the sudden appearance of tender nodules in the skin(ENL) .
- They may ulcerate in severe cases
- Systemic Symptoms: High grade fever , joint pain, fatigue

METHODOLOGY

- This is retrospective cross-sectional study includes all patients diagnosed with leprosy at Lalgadh Leprosy Hospital and Services Centre from January 2019 to January 2024.
- Data were collected from hospital records, including variables such as age, sex, address, type of leprosy (multibacillary or paucibacillary)grade of disability (WHO grades 1 and 2), type of lepra reaction (Type 1 or Type 2), and bacterial load in skin slit smears.
- The data were double-entered into Microsoft Excel and analyzed using SPSS version 20.
- Ethical approval for the study has been taken from National Health and Research Council, Kathmandu, Nepal with Ref. No.: 1076 on 18th Jan 2024

RESULTS AND DISCUSSION

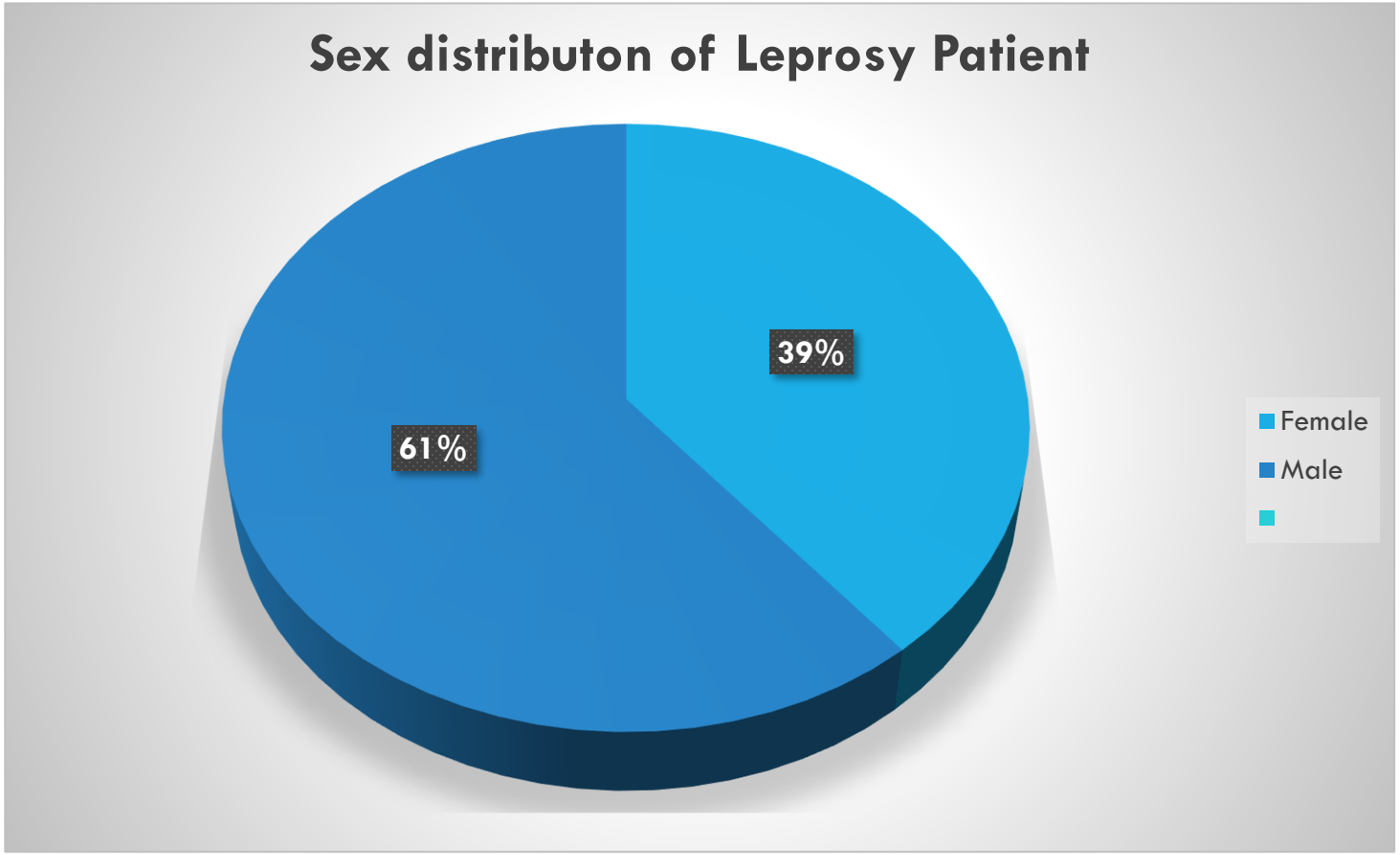

Fig: Out of 4655 patients diagnosed with leprosy,1817(39%) were female, 2823(61%) were male

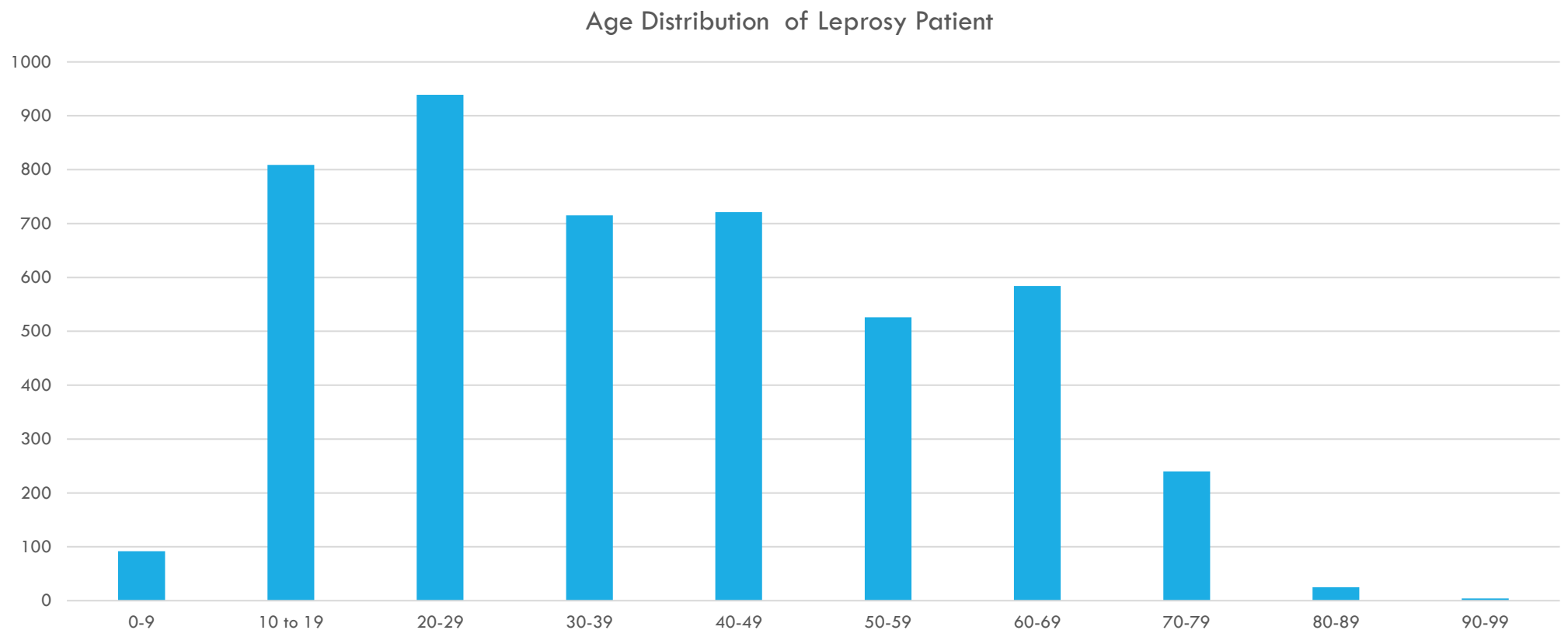

Fig: Age distribution of Leprosy Patient

- 582(12.5%) were children aged 3-16 years.
- The presence of newly diagnosed child cases in this study points to active transmission of leprosy in the community, which is a concern(5)

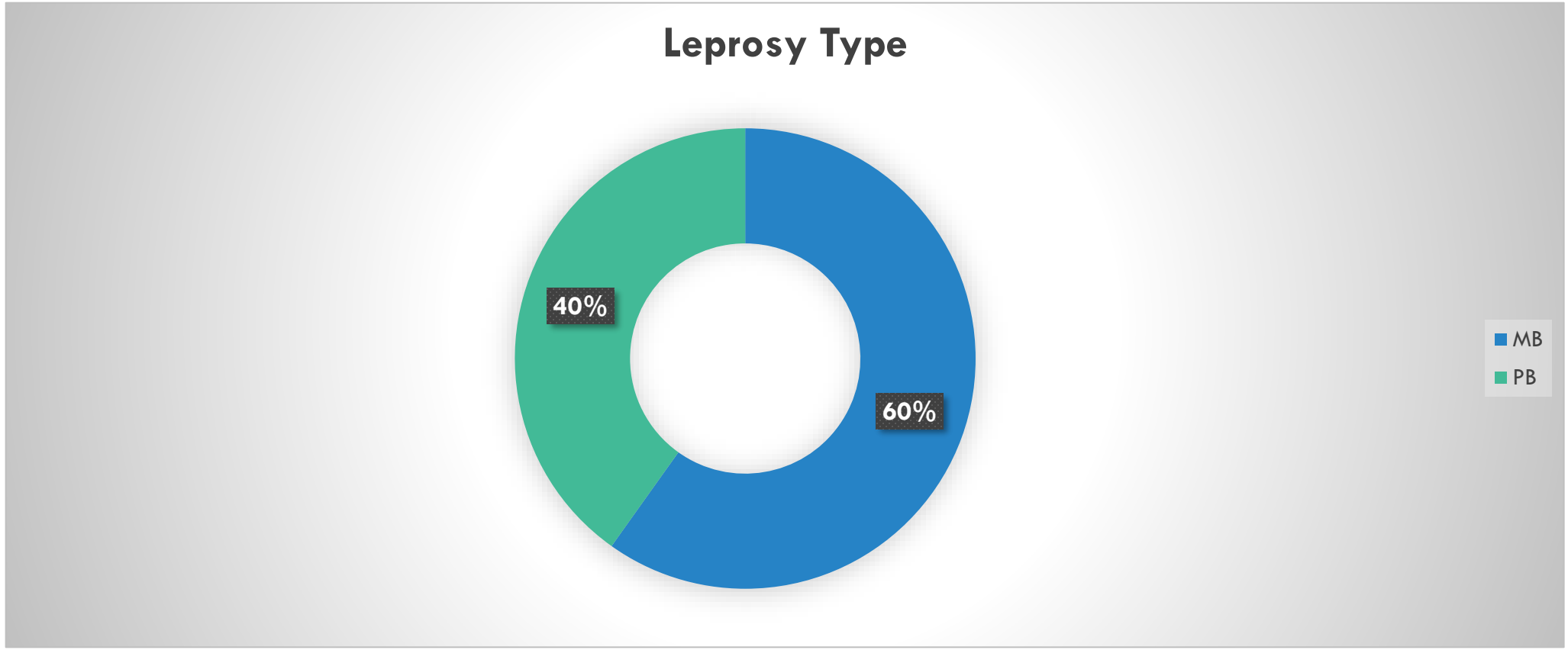

Fig: Multibacillary 2786 (59.8%) followed by Paucibacillary 1869 (40.2 %)

WHO Disability Grade 0:

Eyes: No eye problem due to leprosy, No evidence of visual loss

Hands and feet: No anesthesia , No visible damage or deformity

WHO Disability Grade 1:

Eyes: No eye problem due to leprosy, No evidence of visual loss

Hand and feet: Anesthesia present but no visible deformity.

WHO Disability Grade 2:

Eyes: Severe visual impairment (vision <6/60, inability to count fingers at 6m)

: Lagopthalmos , iridocyclitis and corneal opacities.

Hand and feet : Visible damage or Deformity present [9]

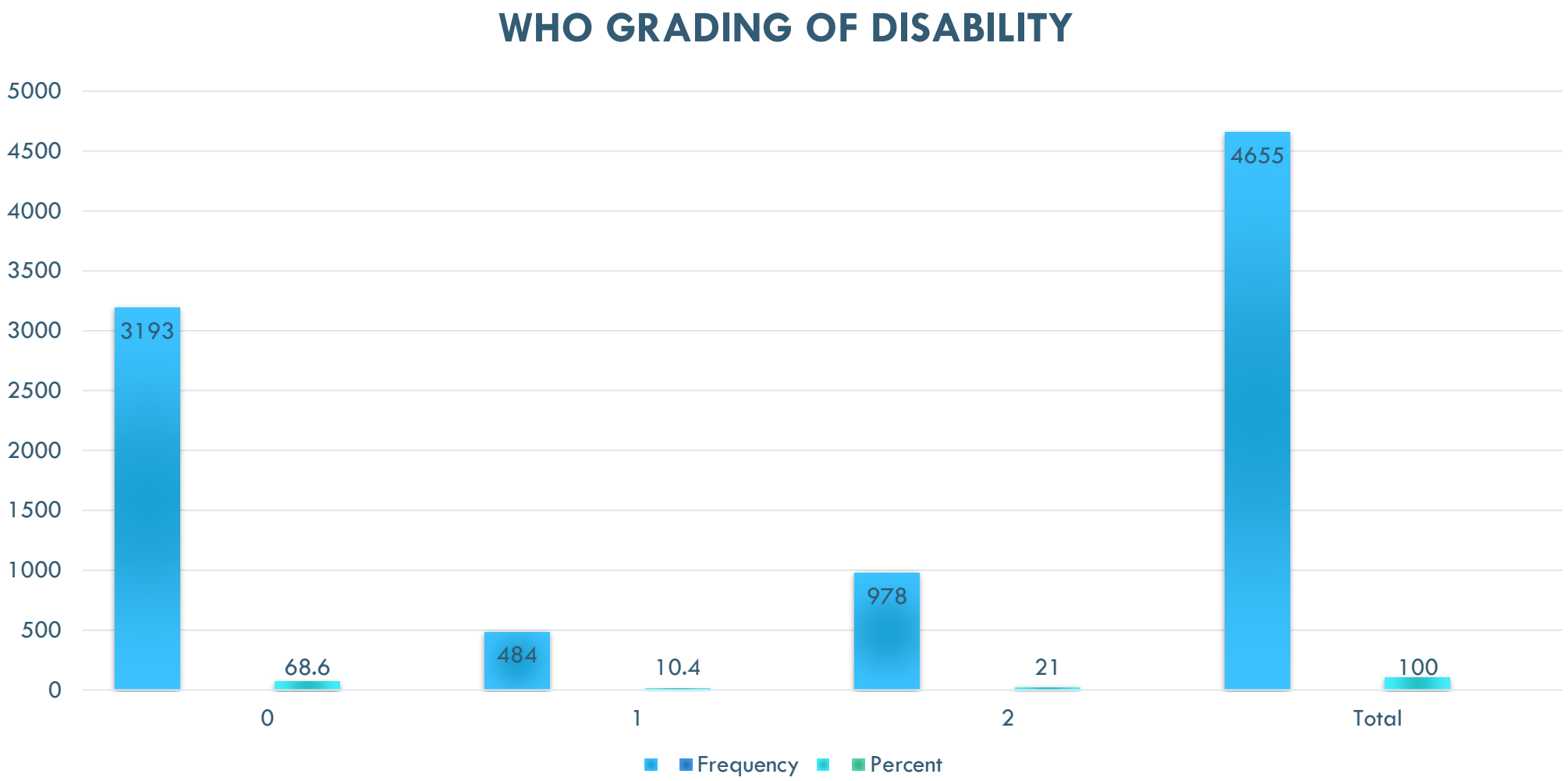

Fig: 978(21%) developed WHO grade 2 disability and 484 (10.4%) developed WHO grade 1 disability.

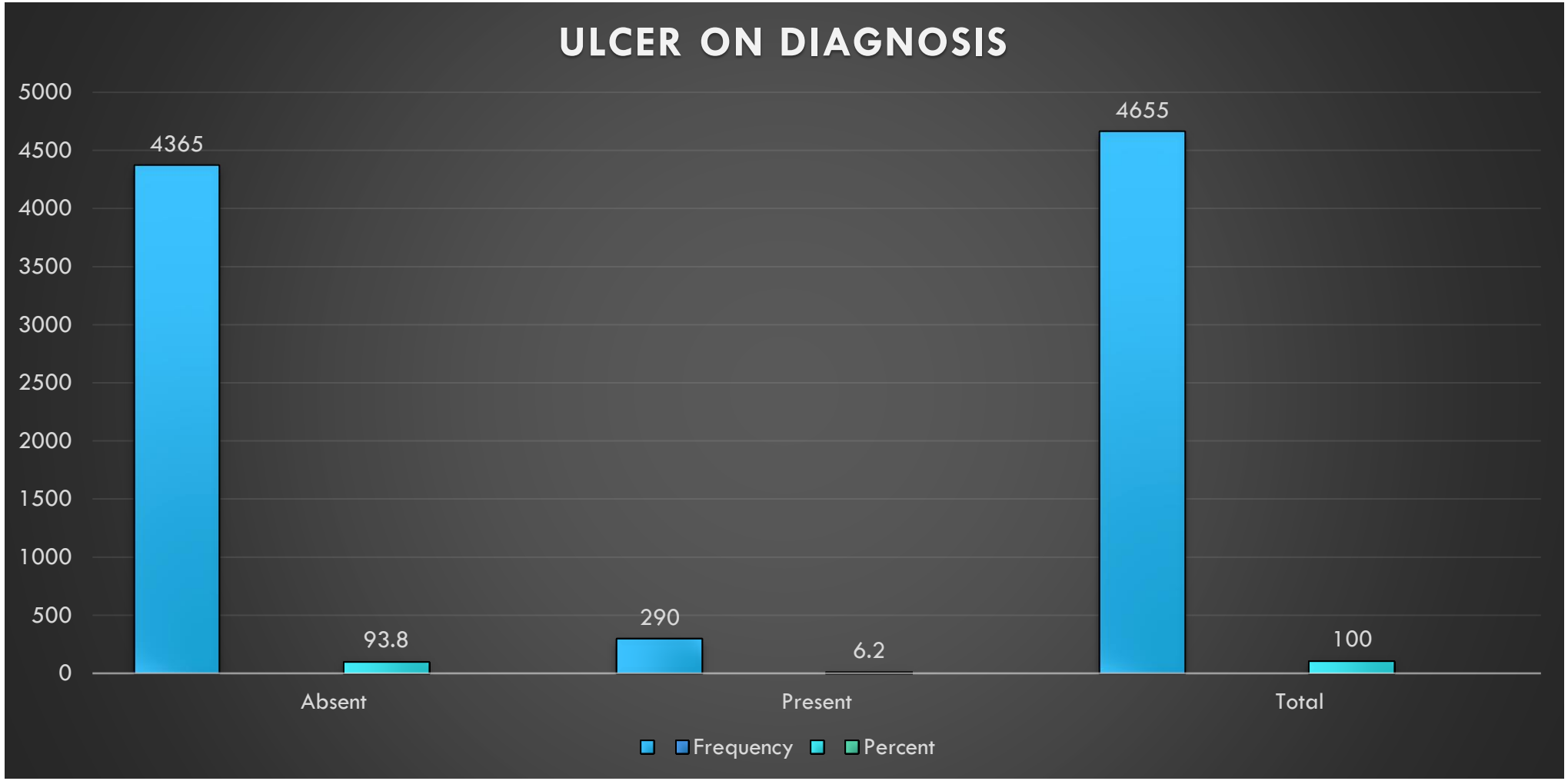

Figure: 290(6.2%) of patients had developed ulceration at the time of diagnosis

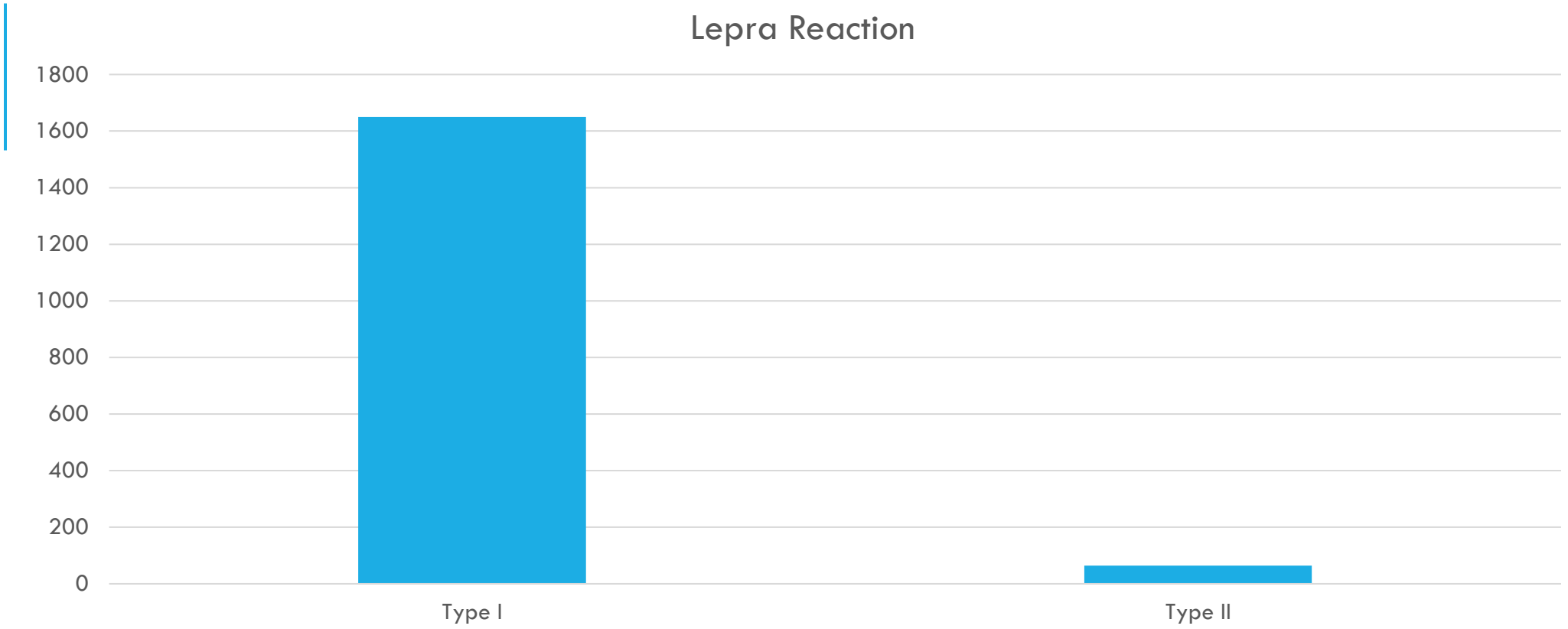

Fig:1735 (37.3%) of the patient developed Lepra reaction, among them 1650(35.4%) with Type 1 Lepra reaction and 64(1.4%) developed Type 2 Lepra reaction.

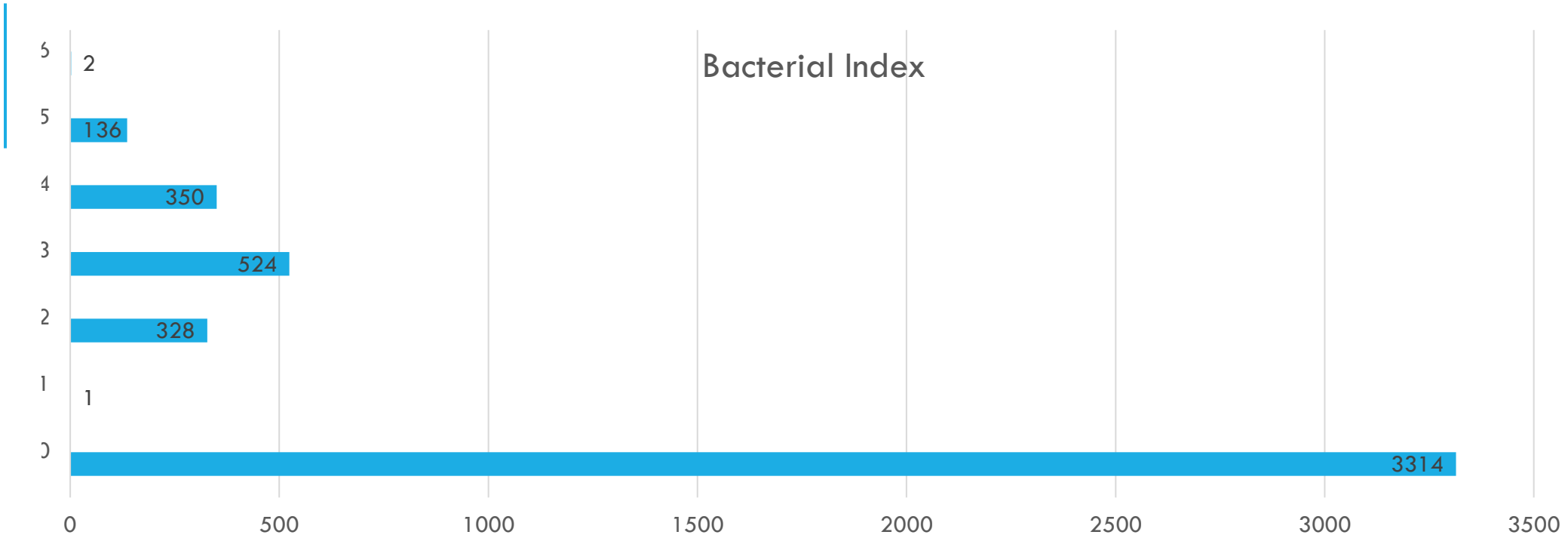

Fig: Bacterial Index among Leprosy Patient

Fig:Skin slit smear was positive in 3319(71.3%) of cases

- A study from India also reported similar findings, with multibacillary leprosy being the most common type and type 1 lepra reaction being the most common type of lepra reaction.(6)
- The high percentage of Multibacillary cases indicates late detection which increases the risk of transmission and development of disabilities. (7)
- Lepra reactions are a major cause of nerve damage and disability in leprosy patients. In our study, 371 patients developed neuritis, and 978 patients developed WHO grade 2 disability. (8)
- Comprehensive management of leprosy patients, including early diagnosis and treatment of lepra reactions, is crucial to prevent the development of these debilitating outcomes.(10)
- The high rate of positive skin slit smear in our study suggests a high bacterial load among the study population, which may contribute to the development of lepra reactions and other complications

CONCLUSION

- Despite the country's achievement of leprosy elimination as a public health problem in 2010, the persistence of new cases and the substantial burden of lepra reactions highlight the need for sustained public health efforts
- Enhancing public awareness, improving healthcare infrastructure, and ensuring continuous training for healthcare workers are critical steps towards further reducing the incidence and impact of leprosy in Nepal .
- "Maximizing Benefits through responsible conduct of Research" , more studies should be conducted among Leprosy patients as this study has proven it as an alarming sign in the post elimination era.

REFRENCES

1. Thomas EA, Williams A, Jha N, Samuel CJ, Professor A. A Study on Lepra Reactions from a Tertiary Care Center in North India. Orig Res Artic [Internet]. 2017;162(3):162–6. Available from: www.ijmrp.com

2. Fava V, Orlova M, Cobat A, Alcaïs A, Mira M, Schurr E. Genetics of leprosy reactions: An overview. Mem Inst Oswaldo Cruz. 2012;107(SUPPL.1):132–42.

3. Pai V V., Athanikar S, Naveen KN, Sori T, Rao R. Lucio Phenomenon. Cutis. 2014;93(2):35–8.

4. Andrade PR, Pinheiro RO, Sales AM, Illarramendi X, De Mattos Barbosa MG, Moraes MO, et al. Type 1 reaction in leprosy: A model for a better understanding of tissue immunity under an immunopathological condition. Expert Rev Clin Immunol. 2015;11(3):391–407.

5. Sharma N, Koranne R V., Mendiratta V, Sharma RC. A study of leprosy reactions in a tertiary hospital in Delhi. J Dermatol. 2004;31(11):898–903.

6.World Health Organization. Global leprosy (Hansen disease) update, 2021: moving towards interruption of transmission. Wkly Epidemiol Rec [Internet]. 2022;36:429–50.

7. Population M of H&. Annual Report. Gov Nepal, Minist Heal Popul Dep Heal Annu Rep 2020/21 [Internet]. 2019;78(December):2–2. Available from: http://ecommons.aku.edu/jam%0Ahttps://sec.gov.gh/wp-content/uploads/Annual-Reports/2019-Annual-Report.pdfFF

8. Chauhan S, D'Cruz S, Mohan H, Singh R, Ram J, Sachdev A. Type II lepra reaction: An unusual presentation. Vol. 12, Dermatology Online Journal. 2006.

9. Mira MT. Genetic host resistance and susceptibility to leprosy. Microbes Infect. 2006;8(4):1124–31.

10. Victor M, Kamanga KM, Peter S. Delayed Diagnosis of Leprosy in A Seventeen Years Old Male Patient with No Sensory Loss for Nine Years in Zambia: A Case Report. Neurol - Res Surg. 2020;3(2):3–5.

ACKLOWDEMENT

- My parents
- Co-authors :

Dr.Krishna Tamang (Co-Investigator):Medical Director, Lalgadh Leprosy Hospital and Services Centre, Dhanusha, Nepal

Ramesh Kumar Choudhary (Co-investigator):Manager, Community Health & Development, Lalgadh Leprosy Hospital and Services Centre, Dhanusha, Nepal

- Lalgadh Leprosy Hospital and Service Center

THANK you