

# Epidemiology of Neurological Disorders: A Prospective Observational Study of Risk Factor Assessment



P. Swathi, St. Peter's Institute Of Pharmaceutical Sciences, Warangal, Telangana, India.  
(Faculty Sponsor – M. Chandra Sekar, College of Pharmacy, UF)



## INTRODUCTION

The second most human inhabited nation, India is passing through a phase of transition in epidemics with the increasing burden of non-communicable diseases (NCD) due to increased health care and lifespan.

Among the NCDs, neurological disorders form a significant proportion of the global burden of disease.

According to DALYs in 2015, neurological disorders lead to 16.8% of global deaths. For the last three decades, neurological disorder mortality rate increased by 36.7%, globally. In India, for every one lakh people around 2400 people are affected by neurological disorders excluding cerebral injuries, cancers and other infections.

## OBJECTIVE

There are several risk factors that favour neurological disorders and analysing the pattern of risk factors of neurological ailments is thus necessary for better upliftment of the neurological health of the affected population.

## METHOD

The Prospective cohort observational study was conducted within Secondary and Tertiary care hospitals. The outcomes were measured with respect to the risk factors that impact the neurological status of the subjects using the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) analysis. 1000 subjects were enrolled and the study was conducted for 6 months.

The screening was performed using a standardized questionnaire developed by NIMHANS with minor modifications, based on requirements of the survey and local situation.

### Inclusion Criteria:

- Patients with any neurological disorder in all age groups.
- Patients of both genders.
- Both inpatients and outpatients.

### Exclusion Criteria:

- Pregnant population.
- Patients who are not willing to participate in the study.

## RESULT

The prevalence of neurological disorders was considerably greater in rural areas (55%) than in urban areas. According to our study, Hypertension was found to be the major risk factor (49.5%) causing stroke and Diabetes mellitus (20.3%) causing neuropathy.

When different types of neurological disorders have been identified - Cervical Pain (19.1%) was found to be major contributing factor.

These disorders are common diseases resulting in various degrees of disability and loss of productive life.

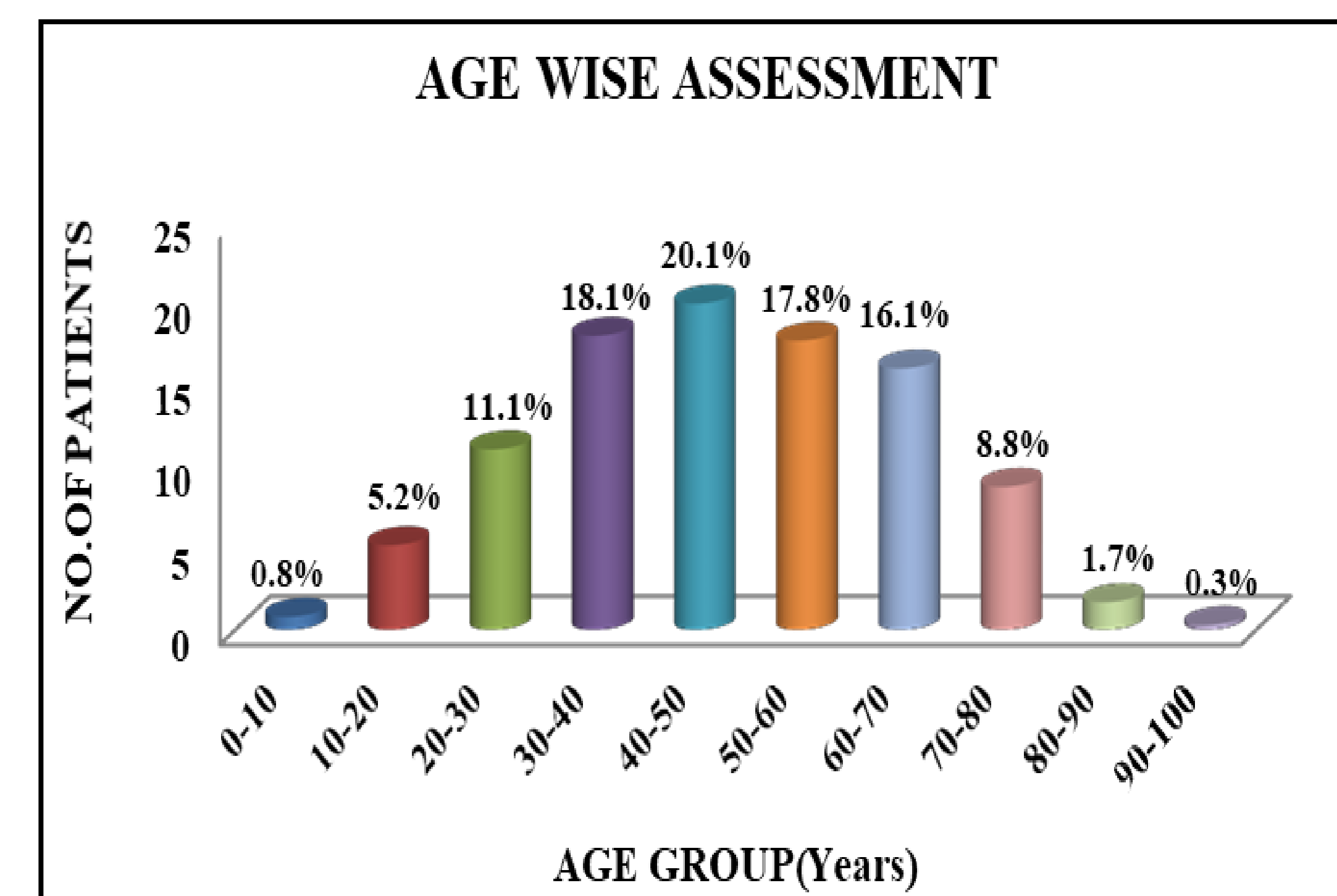


Fig. 1

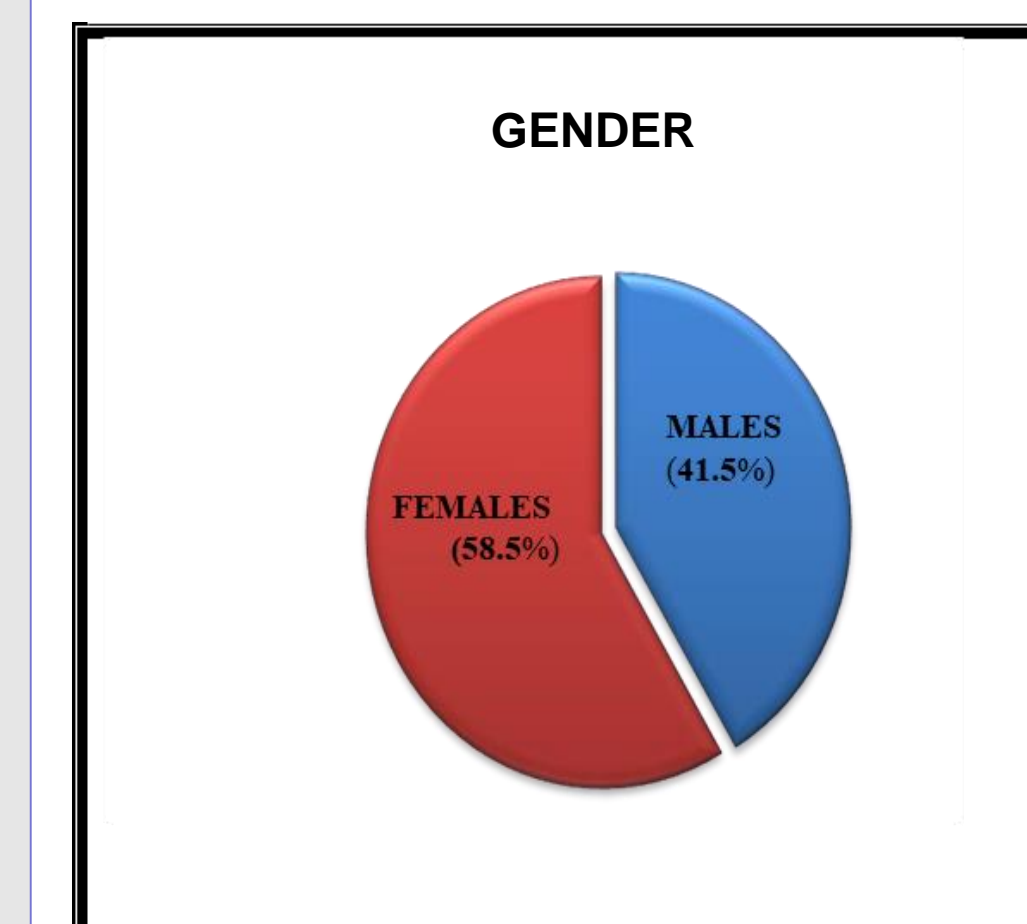


Fig. 2

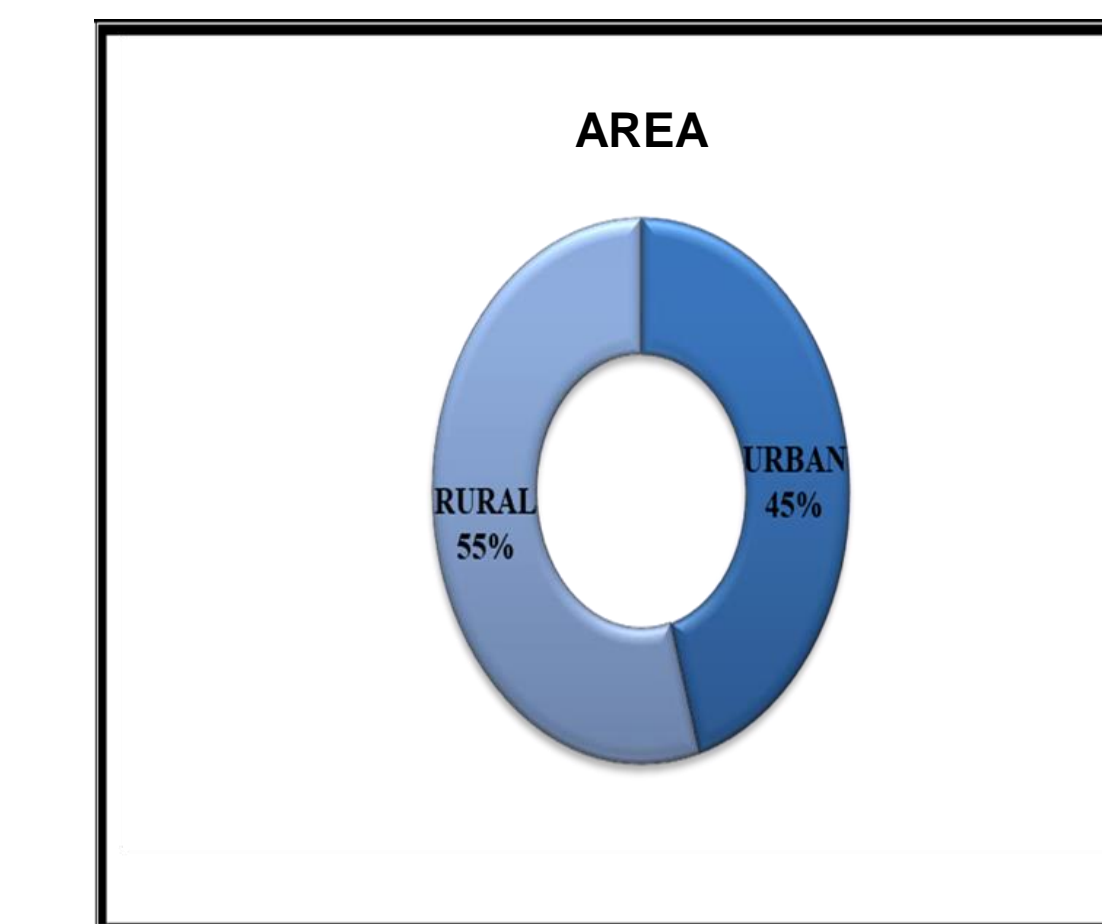


Fig. 3

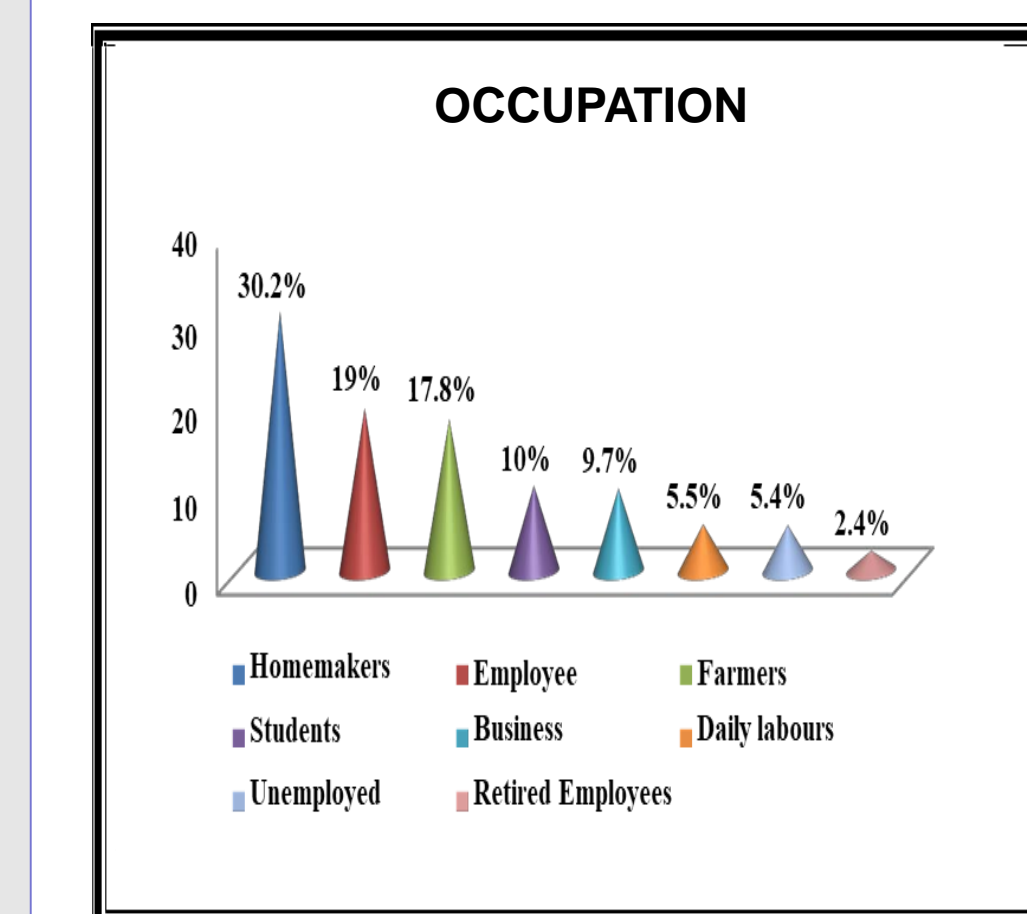


Fig. 4

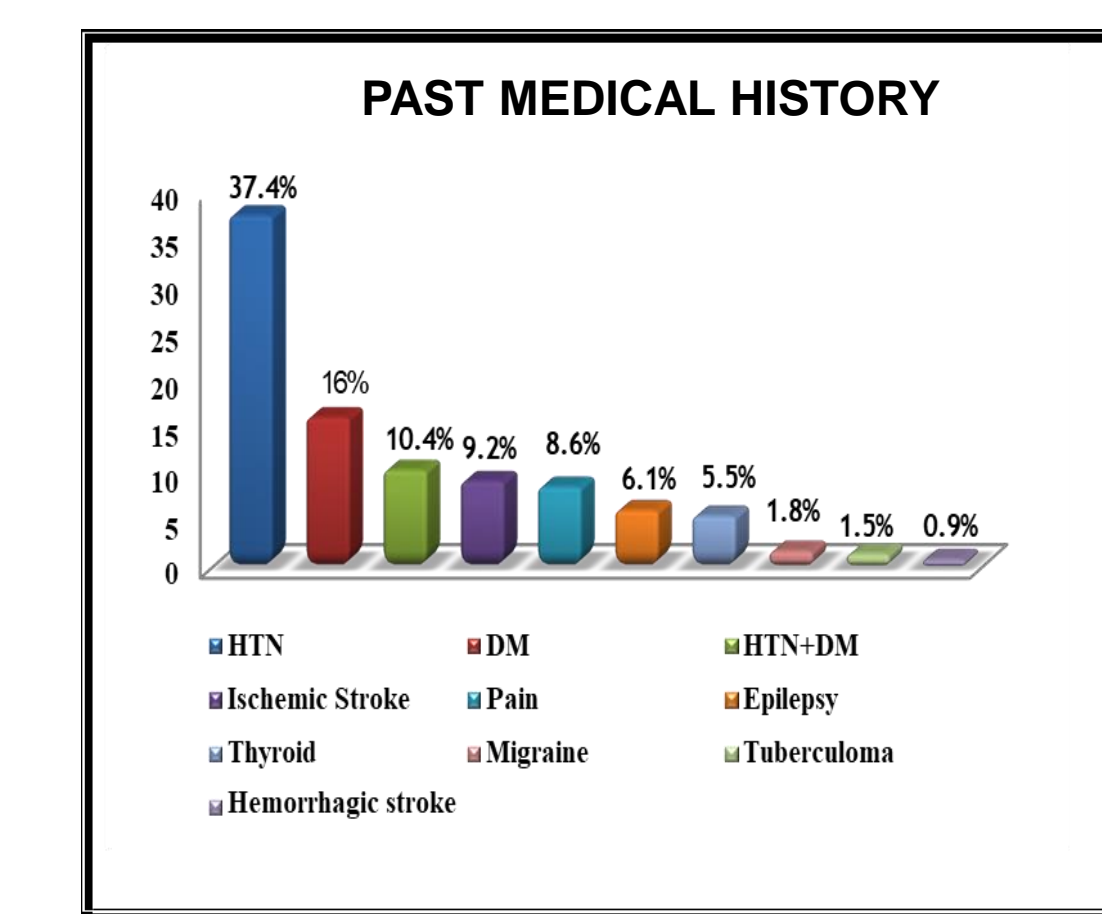


Fig. 5

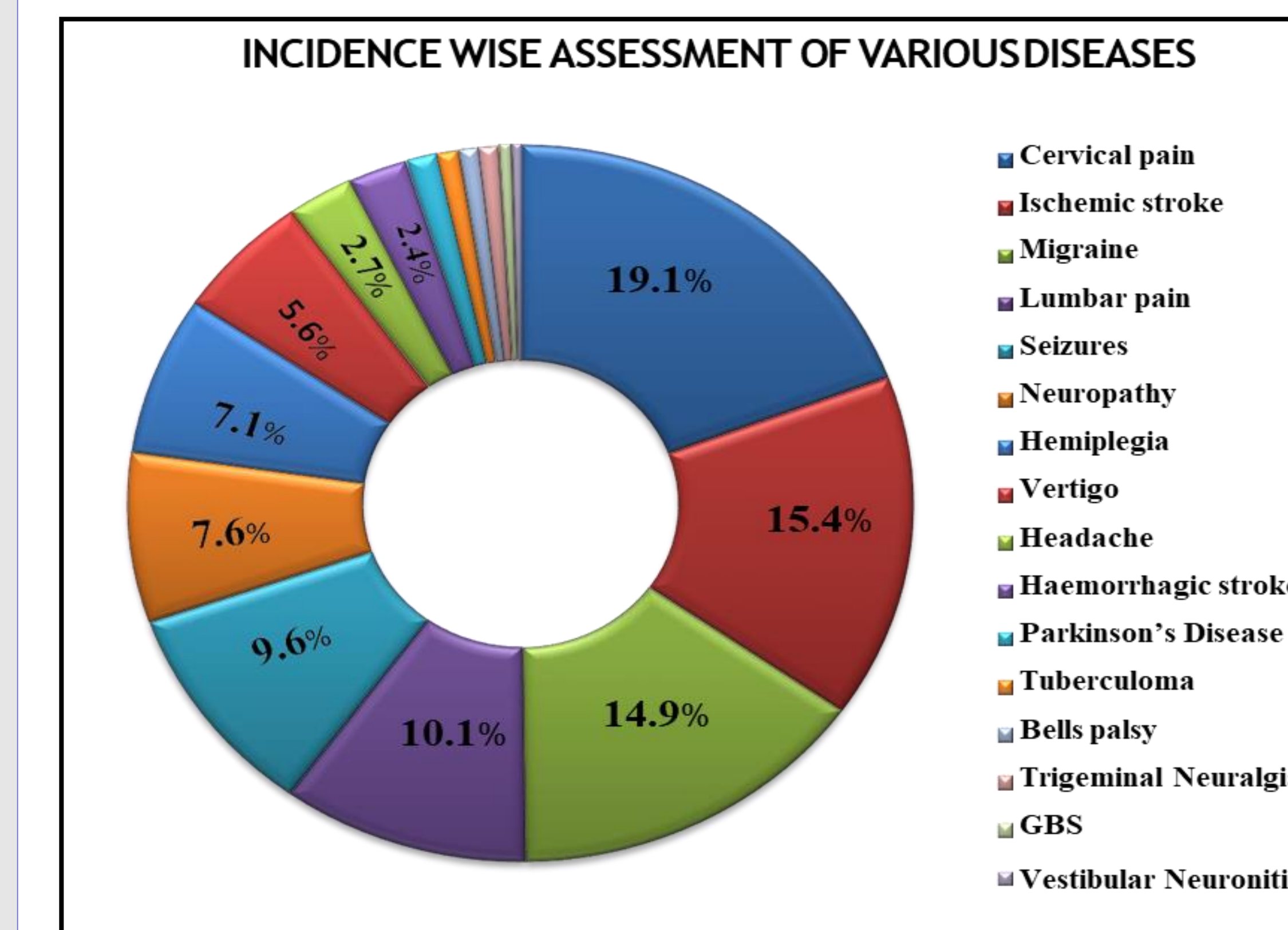


Fig. 6

## DISCUSSION AND CONCLUSION

On assessment of major risk factors for neurological disorders we found that females are more prone to these conditions. Increased frequency in females may be attributed to hormonal variations as the hormones control the growth of neuritis, the process of formation of synapse and formation of myelin as well as neuronal plasticity.

The prevalence of neurological disorders was considerably greater in rural areas (55%) with mostly agriculture as their occupation.

A similar study was carried by Kaddumukasa M, Mugenyi L, Kaddumukasa MN, Ddumba E, Devereaux M, Furlan A, Sajatovic M, Katabira E study entitled "Prevalence and incidence of neurological disorders among adult Ugandans in rural and urban Mukono district"; a cross-sectional study on 3000 study subjects, of which 50.3% (1510/3000) were from the rural setting. Out of the participants screened, 67.4% were female, with a median age of 33 years. Peripheral neuropathy, chronic headaches and epilepsy disorders are major causes of Morbidity in Sub-Saharan settings.

Whereas, in this study Cervical pain (19.1%) was found to be the major cause of illness in farmers. Farm life is a very physical job which causes twisting, torturing and stressing your spine. The socio-demographic details show that alcohol (45.8%) consumption is another major risk factor as alcohol moves through the blood-brain barrier, affecting the brain's neurons directly and can damage or even kill a neuron. It slows down signals impairing all the neurological process. Thus the Clinical Pharmacist will help to aware and improve patients with the risk of neurological disorders.

## REFERENCES

1. Sridharan R, Murthy BN: Prevalence and pattern of epilepsy in India. *Epilepsia*. 1999;40:631-636.
2. Ganguli HC. Epidemiological finding on prevalence of mental disorders in India. *Indian J Psychiatry* 2000;42:14-20.
3. Kessler RC, Aguilar-Gaxiola S, Alonso J, Chatterji S, Lee S, Ormel J, et al: The global burden of mental disorders: an update from the WHO World Mental Health (WMH) surveys. *Epidemiol Psychiatr Soc*. 2009; 18:23-33.
4. Kaddumukasa, M. Mugenyi, L. Kaddumukasa, M.N. et al: Prevalence and incidence of neurological disorders among adult Ugandans in rural and urban Mukono district; a cross-sectional study. *BMC Neurol* 16, 227 (2016).