

## **Discussion**

Studies on the prevalence of PD had been conducted in many parts of the world, for example: Australia, New Zealand, Japan, United States, United Kingdom and Iceland. These studies generally relied on record of providers of health services (mainly hospitals and medical practitioners) in the identification of cases. Such maneuvers exclude individuals who failed to seek medical attention for their PD symptoms, as well as those who were improperly diagnosed.

This study was a community-based one where the approach of case finding was to go into the community and screen for patients with PD at home. This approach is more accurate especially in our circumstances where medical records are improperly handled and seeking medical advice is incomplete because of ignorance of symptoms, socio-economic difficulties or disease disability.

This is the first community-based study for PD carried out in our country to estimate prevalence of PD.

We found the crude prevalence of PD in the study population was 108 per 100 000 population. This figure is slightly lower than those reported in Europe and North America: London (193)<sup>[1]</sup>, Finland (166)<sup>[4]</sup>, San Morino (152)<sup>[5]</sup> and Canada (244)<sup>[6]</sup>. However, it is much higher than African figures: Nigeria (10)<sup>[7]</sup>, Libya (31)<sup>[8]</sup>, as well as China (57)<sup>[9]</sup>.

These differences may be attributed to a different genetic susceptibility in different race<sup>[10]</sup>. However, other factors should be considered. Different age structures where older age population is more in developed countries may contribute to the higher prevalence rates<sup>[11]</sup>.

Morens et al <sup>[12]</sup> found that incidence rates were similar in Asian-American men and in white men. This may be explained by more complete ascertainment than the previous studies. Alternatively, it may reflect a real increase in disease frequency among

nonwhite U.S. residents because of increased exposure to an environment factor.

Recent prevalence study on PD was conducted in Taiwan on people of similar ethnic group to Chinese. It revealed a prevalence rate similar to European figures, suggesting that environmental factors might be more important than racial factors in the pathogenesis of PD<sup>[13]</sup>.

**Age:** There was a consistent and rapid increase in prevalence PD with increasing age, even in the highest age categories. It increases about 20 times from age group of forty to that of eighty. This finding was similar to other studies<sup>[4,11,13,33]</sup>. Three cases (12%) were identified below the age of 50, corresponding to WHO figure<sup>[1]</sup>.

Although PD is intimately related to aging, it has been demonstrated that its underlying process is distinct from natural aging. There is a marked microglial reaction to neuronal damage in PD that is not seen in normal aging<sup>[36]</sup>. It may be explained by aging-related factors like chronic exposure to neurotoxicants.

**Gender:** Prevalence of PD regarding gender distribution is controversial. Some studies show higher prevalence rates in men than women<sup>[3,4,6,8,19,20,21,22,37]</sup>. Other studies<sup>[5,10,14,15,24]</sup> found equal gender prevalence. In our study, there was no significant gender difference in the prevalence rate.

**Residency:** Several studies<sup>[6,24-26]</sup> indicated that rural living is a significant risk factor for PD. As Gorell study<sup>[38]</sup> we found no association between rural living and PD. It's the individual characteristics of rural living like farming, use of well water and exposure to herbicides and insecticides are the factors associated with PS<sup>[24,25]</sup>. These factors need to be evaluated in a specific case-control study with larger sample size.

**Characteristics of the disease:** The onset symptom was predominately tremor 80%, while stiffness only 12%. This may be