

## Characteristics of Fall among Older People in Rural Puducherry

Sir,

Due to aging, there is a progressive decrease in functional capacity, reduced strength of lower limbs, impaired balance, and agility. The physical and mental changes associated with advancing age and frailty increases the risk of fall-related injury which becomes a major public health concern.<sup>[1]</sup> In India, the prevalence of fall among older has been reported to range from 14% to 50%.<sup>[2]</sup> In Puducherry, 9.7% of the total population is more than 60 years of age.<sup>[3]</sup> The study on prevalence and circumstances around fall is useful in planning the preventive measures. Limited research is available on this topic in our region, and hence, a community-based descriptive cross-sectional study was undertaken in 14 villages of Primary Health Care Centre, Thirubhuvanai, Puducherry, India, to find out the prevalence and characteristics of fall among older people.

After obtaining Institutional Ethics Committee clearance, data were collected by trained postgraduates in community medicine from a representative sample of 570 elderly people aged 65 years and above, during the months of September–December 2017. Trivial injury in elders due to fall leads to some form of debility. Hence, it is not easily forgettable issue in that age group. To avoid recall bias, the present study included only the recent fall in the past 12 months.<sup>[2]</sup> In case of verification, medical records regarding fall events were checked, and in case of clarification, caretaker of the elderly was asked regarding details on fall events. The data were entered using Epi Info (Version 7.2.2.6 developed by Centre of Disease Control, Atlanta, USA and WHO) and analyzed using SPSS 24 Software (SPSS Inc., Chicago, Illinois, USA).

The mean age of the study participants was  $71.6 \pm 6.5$  years. The majority 372 (65.3%) were female and 335 (58.8%) were illiterate. About 328 (57.5%) were not working and 338 (59.3%) lived in three generation and joint families. Around 303 (53.1%) were married and 264 (46.3%) were widowed.

About 156 (27.4%) reported a recent fall during the past 1 year. This was consistent with the finding of other studies.<sup>[2,4-6]</sup> The finding from different research in India showed that one-third of older people had a history of fall in the past 1 year. The most common site of injury was lower extremity 81 (51.9%) which was analogous to a study done by Tripathy *et al.*<sup>[2,6]</sup> This was followed by the head and neck and the upper extremity which accounted for 29 (18.6%). We found that the most common type of injury was contusion 95 (60.9%) which was similar to the previous researches.<sup>[4,5]</sup>

Half of the falls (57.7%) occurred outside the house which was similar to a study reported in Bangalore.<sup>[5]</sup> Leading reasons for the fall outside the house which we found were tripping

on the road 43 (47.8%), followed by road traffic accidents, 34.4%. Most of the falls reported to happen during the morning hours (46.8%) which were similar to the previous researches conducted in rural Coimbatore<sup>[4]</sup> and in Bangalore.<sup>[5]</sup>

In our study, we explored that majority (80.8%) of the falls were reported during the summer season. Notably, the reason for such seasonal spike in the fall has to be explored in the future research. Of the 66 (42.3%) older people who fell down inside the house and in the courtyard, 34 (51.6%) were due to slip from heights. Other reasons were loss of balance while sitting or standing and sudden muscle weakness and vertigo which corresponded to 28.8% and 19.6%, respectively. To prevent fall, older people with sudden muscle weakness and vertigo should take precaution, especially while going outside.

To the best of our knowledge, this was the first community-based study in Puducherry. Being a small-scale descriptive cross-sectional research, we did not look for association between exposure and outcome.

In conclusion, the prevalence of the recent fall in last one year among older people was found to be 27.4%. Half of the falls happened outside the house, and it was mostly due to tripping on roads. The majority of the fall occurred during the morning hours and during the summer season. It indicated the need for the creation of safe environment around the house and roads through engineering measures. The caregivers can provide support and accompany them during the peak time and seasons of fall.

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### Conflicts of interest

There are no conflicts of interest.

**L. Padmavathy, Amol R. Dongre**

Department of Community Medicine, Sri Manakula Vinayagar Medical College and Hospital, Puducherry, India

**Address for correspondence:** Dr. L. Padmavathy,  
Department of Community Medicine, Sri Manakula Vinayagar Medical College and Hospital, Puducherry - 605 107, India.  
E-mail: paddulogu03@gmail.com

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