

# Prevalence of Huntington Disease in Asia: A Systematic Review Meta-Analysis

Basavaraja Papanna, MD MSc, EPUT NHS, UK  
Carlo Lazzari, MD, EPUT NHS, UK

## Abstract

The epidemiological studies on Huntington's Disease (HD) suggest that prevalence rates in the Asian population are significantly lower than the western population. There are preliminary observations that would propose that HD is underestimated in some Asian countries due to stigma related to diagnosis, normalization of behaviors, or use of restricted methods (genetic and neurological) for confirming the diagnosis of HD. This systematic review of epidemiological data of HD prevalence in Asia has highlighted the level of impact of HD on the Asian population. Original articles and reviews about HD prevalence in the Asian population were found through available databases such as EMBASE, Medline, and PsychInfo. Relevant articles were analyzed with the scrutiny of references including specific keywords. A meta-analysis was performed on prevalence rates to find the degree of similarities with  $I^2$ . Point Prevalence was measured as the number of people affected by HD on 100,000 population. Results show the highest point prevalence of HD in the Indian subpopulations of Pakistan, Punjab, and Gujarat with 1.35 (OR95%CI=1.14-1.57) (Table 1). The lowest point prevalence was found in the Chinese population with 0.25 (OR95%CI=0.16-0.36). Europe remains at a high prevalence compared to Asian countries with 1.00 (OR95%CI=0.82-1.19). Results also show that the prevalence rates have statistical significant variability in all Asian countries ( $I^2=93.90\%$ ,  $p<0.001$ ). The overall prevalence in the world is 0.61 (OR95%CI=0.43-0.81). Our study reveals that Huntington Disease affects the population in Asia to a lesser extent than Europe, although some countries like Indian subpopulations of Pakistan, Punjab, and Gujarat present with the highest global prevalence. The plausible explanation is that some countries did not adopt genetic and neurological testing while affected individuals will not self-refer to HD screening for fear of social stigma and negative influence in marriage.

**Table 1.** Summary of prevalence of HD in Asia compared to Europe

Study	Country	Point prevalence*	(OR 95% CI)
Leung et al., 1992	China and Hong-Kong	0.25	0.16–0.36
Chen & Lai, 2010	Taiwan	0.42	0.30–0.55
Takano et al., 1998	Japan	0.50	0.37–0.64
Shiwach & Lindenbaum, 1990	Pakistan, Punjab and Gujarat	1.35	1.14–1.57
Nakashima et al., 1996	San-in area, Western Japan	0.65	0.51–0.81
Adachi & Nakashima, 1999	San-in area, Western Japan	0.72	0.57–0.89
Hasegawa et al. 2015	Japan	0.70	0.55–0.87
Scrimgeour, 2009	Middle East	0.40	0.29–0.53
Kim et al., 2015	Korea	0.41	0.30–0.54
Rawlins, 2016	Europe	1.00	0.82–1.19
<b>Meta-analysis</b>		<b>0.61</b>	<b>0.43–0.81**</b>

\* Point prevalence= number of affected persons  $\times$  100,000 inhabitants.

\*\* $I^2=93.90\%$ ,  $p<0.001$ .

## References

1. Leung CM, Chan YW, Chang CM, Yu YL, Chen CN (1992) Huntington's disease in Chinese: a hypothesis of its origin. *J Neurol Neurosurg Psychiatry*; 55:681-684.
2. Chen Y-Y, Lai, C-H (2010) Nationwide population-based epidemiological study of Huntington's disease in Taiwan. *Neuroepidemiology* 35:250-254.
3. Shiwach RS, Lindenbaum RH (1990) Prevalence of Huntington's disease among UK immigrants from the Indian subcontinent. *The British Journal of Psychiatry* 15(4):598-599.
4. Nakashima K., et al. (1996) Epidemiological and genetic studies of Huntington's disease in the San-in area of Japan. *Neuroepidemiology*, 15(3):126-31.
5. Adachi Y, Nakashima K (1999) Population genetic study of Huntington's disease-prevalence and founder's effect in the San-in area, western Japan. [Article in Japanese] *Nihon Rinsho, Japanese Journal of Clinical Medicine* 57(4):900-4.



## Biography

Dr Basavaraja Papanna is a medical laureate with postgraduate training and degree in neurosciences. He is member of the neuroscience committee at the Royal College of Psychiatry in United Kingdom. He has research interests and publications in neuropsychiatry, Huntington disease, general adult psychiatry, and sleep disorders. Dr Papanna is conducting a research study in the epidemiology of Huntington diseases in Asia using genetic diagnostic methods.

Email: [b.papanna@nhs.net](mailto:b.papanna@nhs.net)