

Education As A Protective Factor For Cognitive Decline After Head Injury: Findings From LASI-DAD

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Key takeaway: Formal education may enhance cognitive reserve, helping individuals recover better and experience less cognitive decline after a head injury.

INTRODUCTION

Education is widely recognized as an important determinant of cognitive functioning, with an evidence suggesting that individuals with formal education perform better in cognitive tests. In contrast, head injury is a well-established risk factor for cognitive impairment, however, limited evidence exists on whether education protects cognitive decline following head injury. Hence, this study aims to assess whether formal education is associated with better cognitive functioning among individuals with a history of head injury.

METHODOLOGY

Data from Wave 2 (2022- 2024) of the Harmonized Longitudinal Aging Study in India Diagnostic Assessment of Dementia (LASI-DAD) were used for this study. Participants were categorized based on self-reported history of head injury and educational status (Formal education vs no formal education). Descriptive statistics, chi square and the Mann-Whitney U test were used to analyze the data using SPSS version 31.0

RESULTS

Figure 1: Distribution of participants with a history of head injury (N = 4,446).

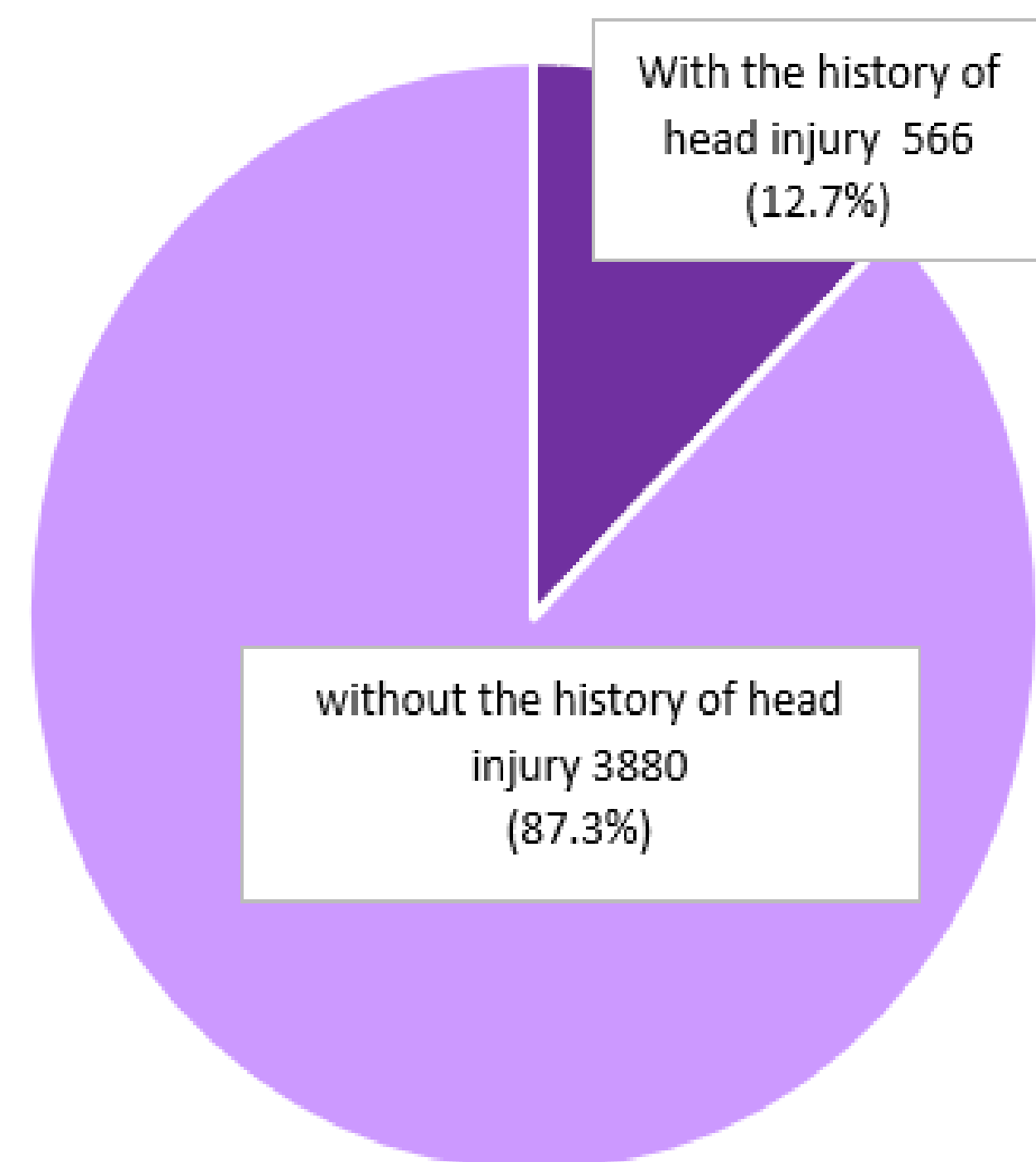


Figure 2: Education status among participants with a history of head injury (n = 566)

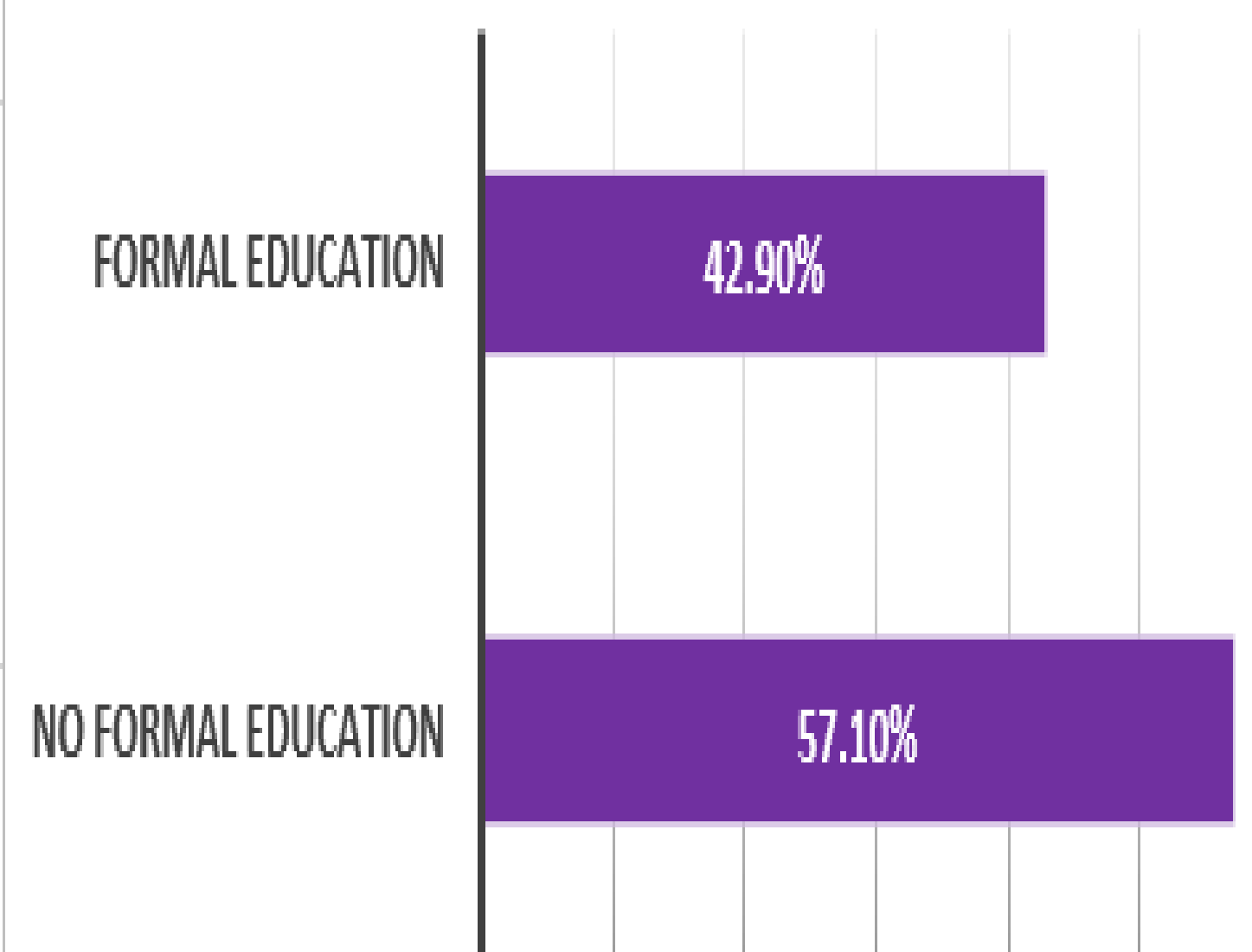


Table 1: Comparison of Cognition by Education in Participants With a History of Head Injury

COGNITIVE TESTS	Without formal education Median (IQR)	With Formal education Median (IQR)	p value
HMSE	20 (17,23)	25 (22.50, 27)	<0.001
Word list recall	3 (0,4)	4 (1,5)	<0.001
Verbal fluency	11 (8,13)	14 (10,17)	<0.001
Raven's test	7 (5,8)	8 (6,10)	<0.001

The median (IQR) educational attainment and age was 0(0,7) years, 71 (67, 76) years. The educated group included 62.1% males and 37.9% females. Comparisons between participants with and without formal education showed that those with formal education performed significantly better on HMSE ($p<0.001$), word list recall ($p<0.001$), Logical Memory recognition ($p=0.01$), verbal fluency ($p<0.001$), symbol cancellation ($p<0.001$), Raven's test ($p<0.001$), constructional praxis ($p<0.001$), and constructional praxis recall ($p<0.001$).

CONCLUSION

These findings suggest that older adults with a history of head injury who had at least minimal formal education demonstrate less cognitive decline across multiple domains compared to those without formal education. This highlights the potential protective role of education in mitigating cognitive deficits following head injury.