

Long-term Dietary Patterns And Nutritional Status In Alzheimer’s Disease: A Case-control Study In Sri Lanka



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Lower consumption of fish, and nuts during adulthood, may be associated with AD risk in Sri Lanka. These findings provide evidence that culturally specific dietary patterns may be associated with AD risk and highlight the importance for healthy dietary and lifestyle interventions tailored to older Sri Lankan populations.

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS																																																																																			
- The modifiable lifestyle factors, including diet, and physical activity play a pivotal role in risk and disease progression in Alzheimer’s disease (AD). - Studies have found statistically significant positive association between low fish and milk consumption with AD dementia (1). - Understanding nutritional status and dietary patterns among individuals with AD will inform strategies to improve their cognitive health and quality of life. Objective: To determine the past dietary patterns and current nutritional status between individuals with AD and non-AD controls.	Study design: A case control study Study population: 36 mild-to-moderate AD patients and age & gender matched non-AD individuals. Data collection: - Socio-demographic and lifestyle characteristics - Culturally adapted and validated Food Frequency Questionnaire (FFQ): Past dietary intake. - Mini Nutrition Assessment (MNA): Present nutritional status. - Mini Mental State Examination (MMSE): Cognitive assessment. - Retrospective data from AD patients were verified by their next-of-kin. Data analysis: Binary logistic regression and Chi-square test to estimate exposure odds-ratios(EOR)	- Study population: Mean age: 70±5 years, 14 males (39%) and 22 females (61%) - None of the AD and 6% of the non-AD individuals were malnourished, 31% of the AD and 41% of the non-AD individuals were at risk of malnutrition. - Higher intakes of white rice, seafood, coconut oil and nuts were associated with significant lower odds of AD (Table 1). <table><caption>Table 1. Association between past dietary patterns and AD development based on FFQ data</caption><thead><tr><th rowspan="2">Food Items</th><th colspan="2">Binary Logistic Regression</th><th>Chi-square</th></tr><tr><th>EOR (95% CI)</th><th>P value</th><th>P value</th></tr></thead><tbody><tr><td>White rice</td><td>0.358 (0.178 - 0.719)</td><td>0.040*</td><td>0.009*</td></tr><tr><td>Seafood</td><td>0.211 (0.071 – 0.627)</td><td>0.005*</td><td>0.007*</td></tr><tr><td>Nuts</td><td>0.241 (0.084 – 0.692)</td><td>0.008*</td><td>0.006*</td></tr><tr><td>Coconut oil</td><td>0.337 (0.115 - 0.990)</td><td>0.048</td><td>0.118</td></tr><tr><td>Simple sugar</td><td>3.077 (0.864 - 10.954)</td><td>0.083</td><td>0.074</td></tr><tr><td>Red rice</td><td>1.527 (0.827 – 2.819)</td><td>0.176</td><td>0.307</td></tr><tr><td>Egg</td><td>0.800 (0.316 - 2.025)</td><td>0.638</td><td>0.584</td></tr><tr><td>White meat</td><td>1.000 (0.344 - 2.906)</td><td>1.000</td><td>1.000</td></tr><tr><td>Red meat</td><td>0.467 (0.171 - 1.274)</td><td>0.137</td><td>0.134</td></tr><tr><td>Processed meat</td><td>1.931 (0.512 - 7.281)</td><td>0.331</td><td>0.326</td></tr><tr><td>Vegetables</td><td>1.774 (0.391 - 8.055)</td><td>0.458</td><td>0.453</td></tr><tr><td>Green leafy vegetables</td><td>0.615 (0.215 – 1.763)</td><td>0.366</td><td>0.222</td></tr><tr><td>Legumes</td><td>1.540 (0.018 - 1.320)</td><td>0.088</td><td>0.149</td></tr><tr><td>Fruits</td><td>1.000 (0.397 - 2.519)</td><td>1.000</td><td>0.548</td></tr><tr><td>Scrapped coconut</td><td>1.000 (0.249 - 4.018)</td><td>1.000</td><td>0.742</td></tr><tr><td>Coconut milk</td><td>0.885 (0.335 - 2.336)</td><td>0.805</td><td>0.804</td></tr><tr><td>Solid fat</td><td>1.817 (0.794 - 4.155)</td><td>0.157</td><td>0.352</td></tr><tr><td>Bakery products</td><td>1.074 (0.333 – 3.466)</td><td>0.905</td><td>0.230</td></tr><tr><td>Milk/ milk products</td><td>1.417 (0.622 - 3.231)</td><td>0.407</td><td>0.695</td></tr></tbody></table> EOR, Exposure Odds Ratio; *, Significant association at p<0.05 - Consumption frequencies of fish, white rice and nuts Frequency of fish consumption Frequency of nuts consumption Frequency of white rice consumption	Food Items	Binary Logistic Regression		Chi-square	EOR (95% CI)	P value	P value	White rice	0.358 (0.178 - 0.719)	0.040*	0.009*	Seafood	0.211 (0.071 – 0.627)	0.005*	0.007*	Nuts	0.241 (0.084 – 0.692)	0.008*	0.006*	Coconut oil	0.337 (0.115 - 0.990)	0.048	0.118	Simple sugar	3.077 (0.864 - 10.954)	0.083	0.074	Red rice	1.527 (0.827 – 2.819)	0.176	0.307	Egg	0.800 (0.316 - 2.025)	0.638	0.584	White meat	1.000 (0.344 - 2.906)	1.000	1.000	Red meat	0.467 (0.171 - 1.274)	0.137	0.134	Processed meat	1.931 (0.512 - 7.281)	0.331	0.326	Vegetables	1.774 (0.391 - 8.055)	0.458	0.453	Green leafy vegetables	0.615 (0.215 – 1.763)	0.366	0.222	Legumes	1.540 (0.018 - 1.320)	0.088	0.149	Fruits	1.000 (0.397 - 2.519)	1.000	0.548	Scrapped coconut	1.000 (0.249 - 4.018)	1.000	0.742	Coconut milk	0.885 (0.335 - 2.336)	0.805	0.804	Solid fat	1.817 (0.794 - 4.155)	0.157	0.352	Bakery products	1.074 (0.333 – 3.466)	0.905	0.230	Milk/ milk products	1.417 (0.622 - 3.231)	0.407	0.695	- Findings provide preliminary evidence that long-term culturally specific dietary patterns are associated with AD risk in this Sri Lankan population. - Targeted nutritional interventions are warranted to reduce the risk of malnutrition among older adults, irrespective of AD status.
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