

# Nuts Consumption and Cognitive Function

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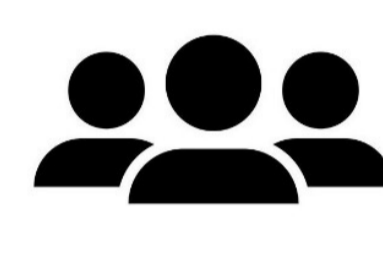



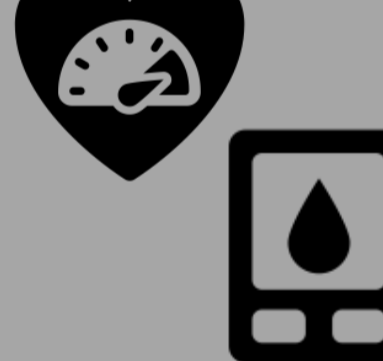

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## INTRODUCTION

Cognitive impairment has become a global public concern. A limited number of studies suggest a positive association between nuts intake and cognitive function. The aim of this study is to investigate the association between nuts consumption and cognitive function and to test whether hypertension and diabetes mediate this association among adults in Qatar.

## METHODS

**Data source:** cross-sectional data from Qatar Biobank Study (QBB)

	<b>Participants</b> <ul style="list-style-type: none"> <li>N=1000</li> <li>♂ 500</li> <li>♀ 500</li> <li>≥20 years old</li> <li>Mean age 35.8 years (SD 10.3)</li> </ul>
	<b>Dietary intake</b> 102 items Food Frequency Questionnaire (FFQ)
	<b>Usual nuts consumption</b> Four categories: <ul style="list-style-type: none"> <li>≤1 time/month</li> <li>1-3 times/month</li> <li>1-3 times/week</li> <li>≥4-6 times/week</li> </ul>
	<b>Cognitive function</b> Mean reaction time (MRT): computer self-administered test and visual stimulus
	<b>Mediators / moderators</b> <ul style="list-style-type: none"> <li>Diabetes</li> <li>Hypertension</li> </ul>
	<b>Statistical Analysis</b> <ul style="list-style-type: none"> <li>STATA (version 16)</li> <li>ANOVA</li> <li>Chi square test</li> <li>Multivariable linear regression</li> <li>Multiplicative interaction</li> <li>Structure equation model: mediation</li> </ul>

## REFERENCES

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## ACKNOWLEDGEMENT

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## RESULTS

- 21.1% consumed nuts more than 4-6 times/week (high consumption)
- 40.2% consumed ≤1 time/month (low consumption).
- The MRT was 715.6 millisecond (SD 204.1).
- An inverse association was found between nuts consumption and MRT, especially among those aged > 50 years.
- High consumption of nuts had a regression coefficients of -36.95 (-68.09 to -5.82) after adjusting for sociodemographic and lifestyle factors.
- The association was attenuated towards non-statistically significant after adjusting for BMI, diabetes and hypertension.
- There was an interaction between nuts consumption and hypertension.
- The association between nuts consumption and MRT was not mediated via hypertension, diabetes and serum magnesium.

Association Between Sociodemographic Factors, Lifestyle, Serum Magnesium, and Mean Reaction Time

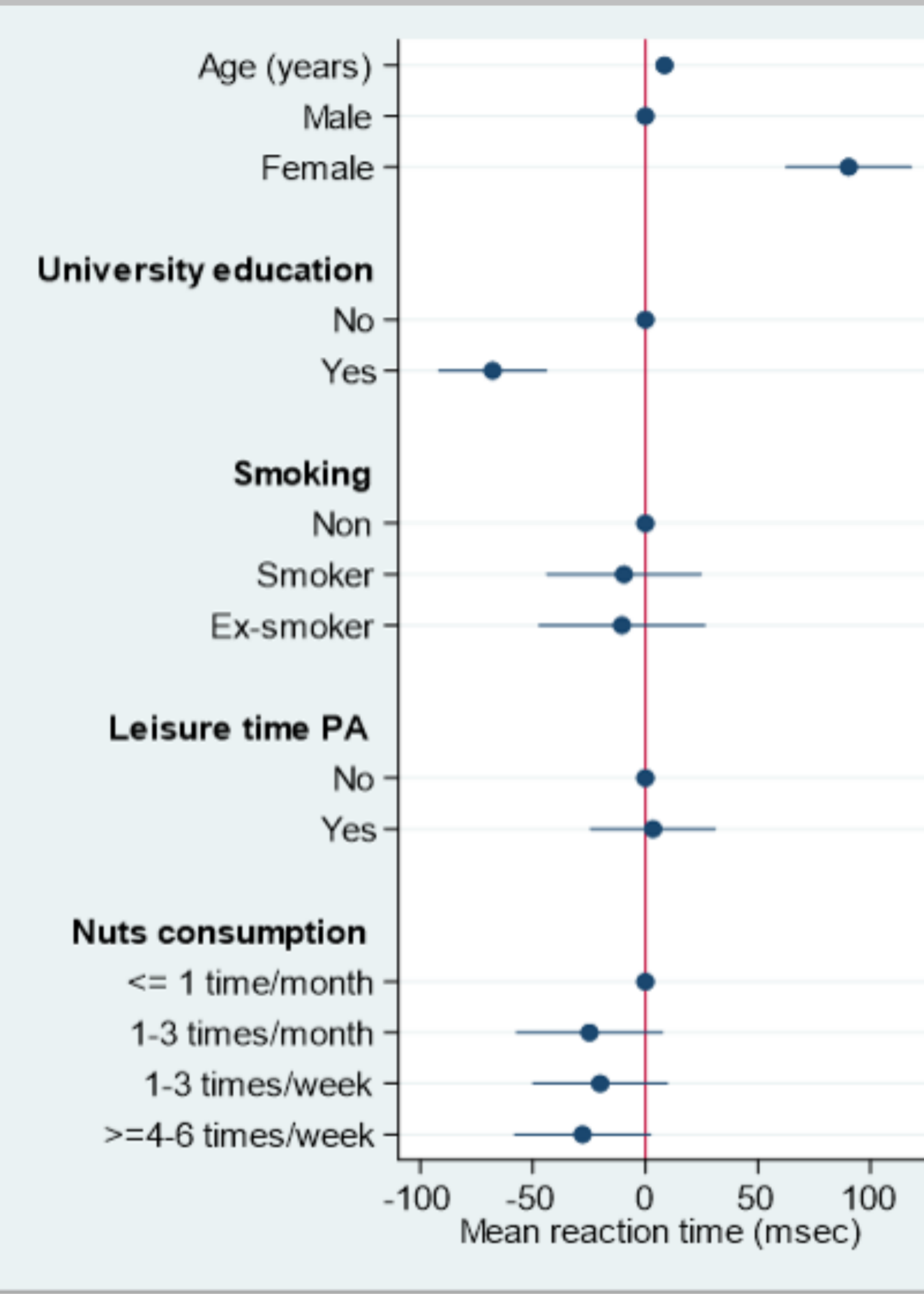


Figure 1: Interaction between nuts intake and age in relation to mean reaction time

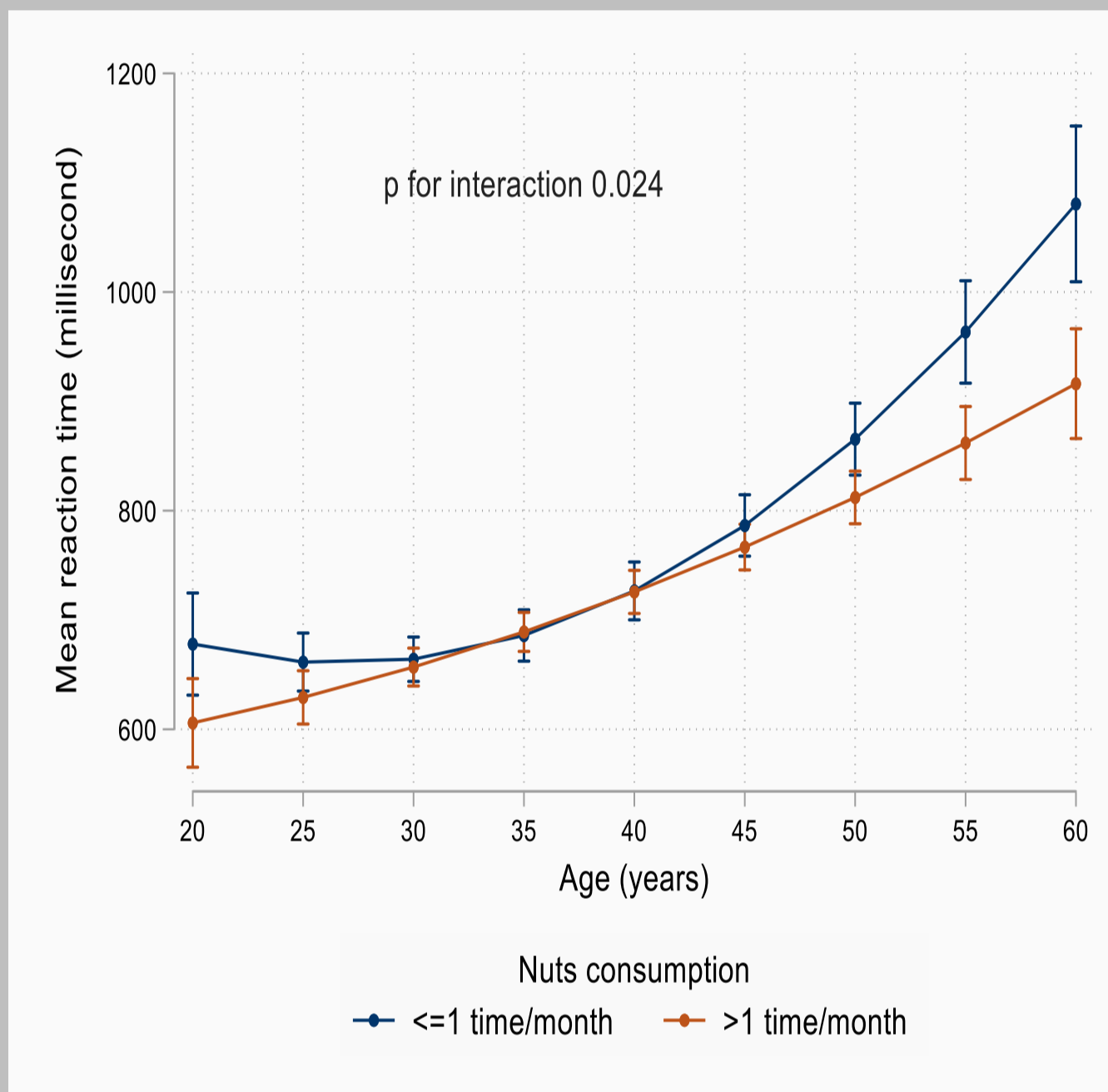


Figure 2: Interaction between nuts consumption and hypertension and diabetes in relation to cognitive function

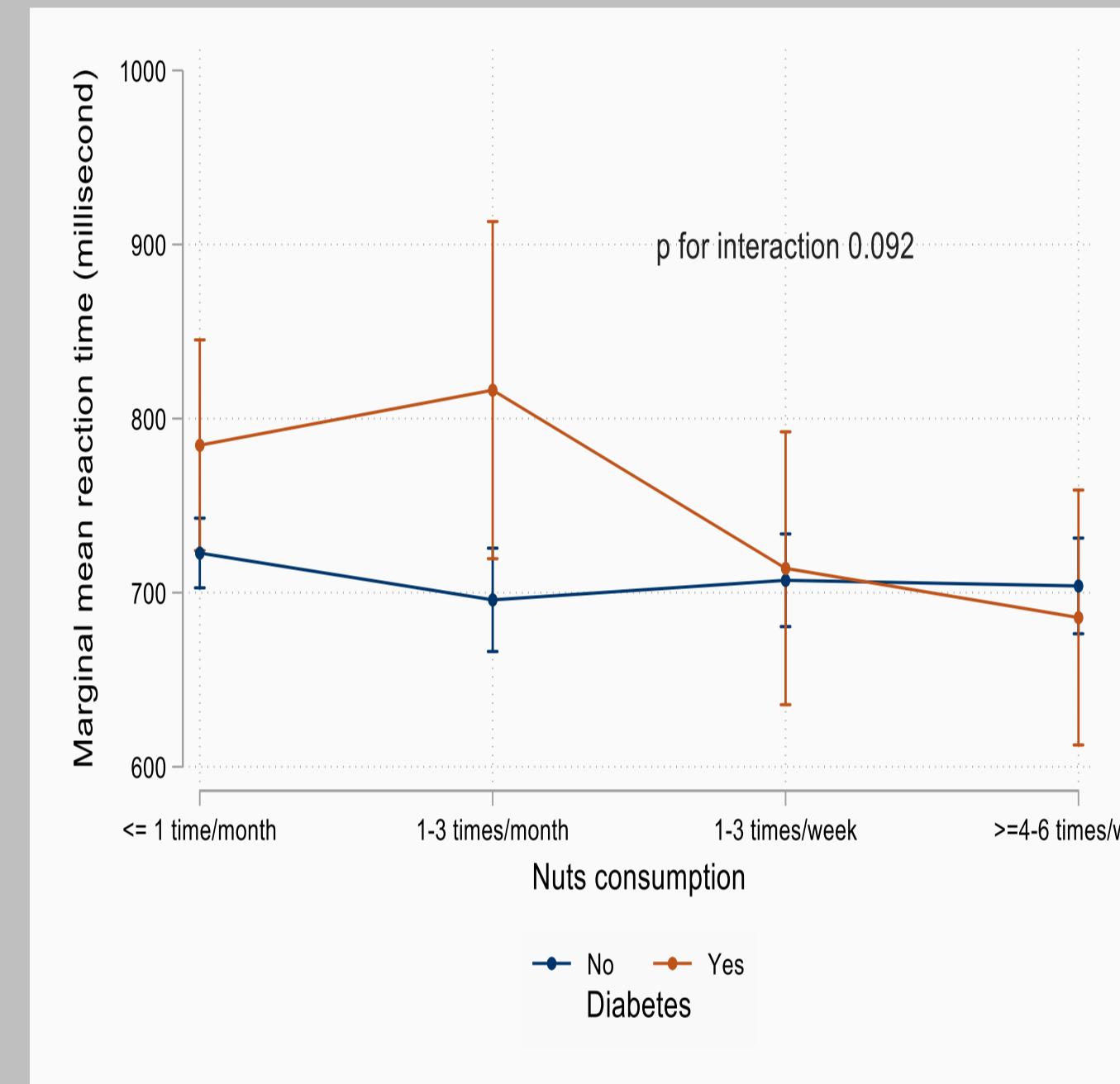
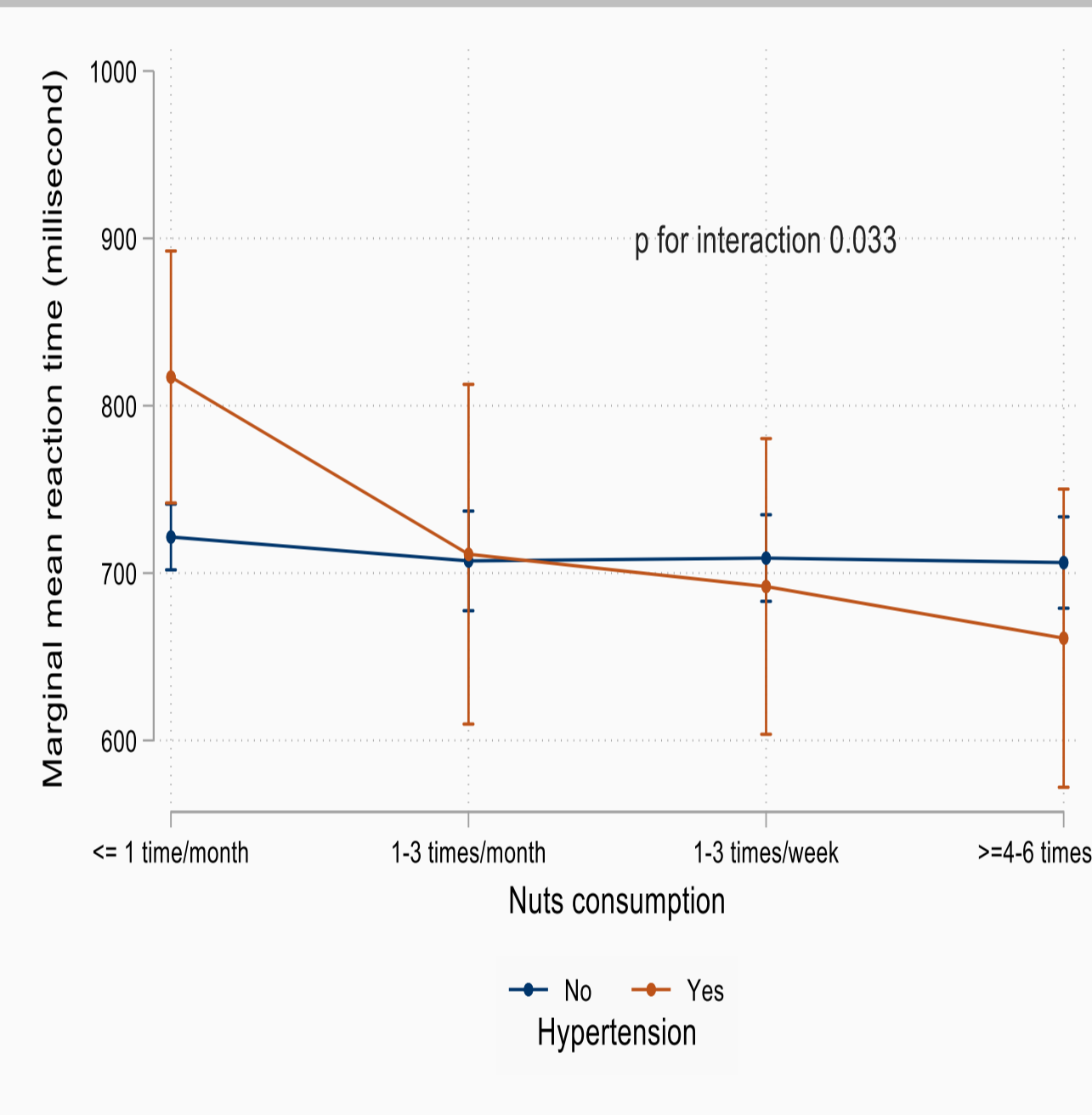


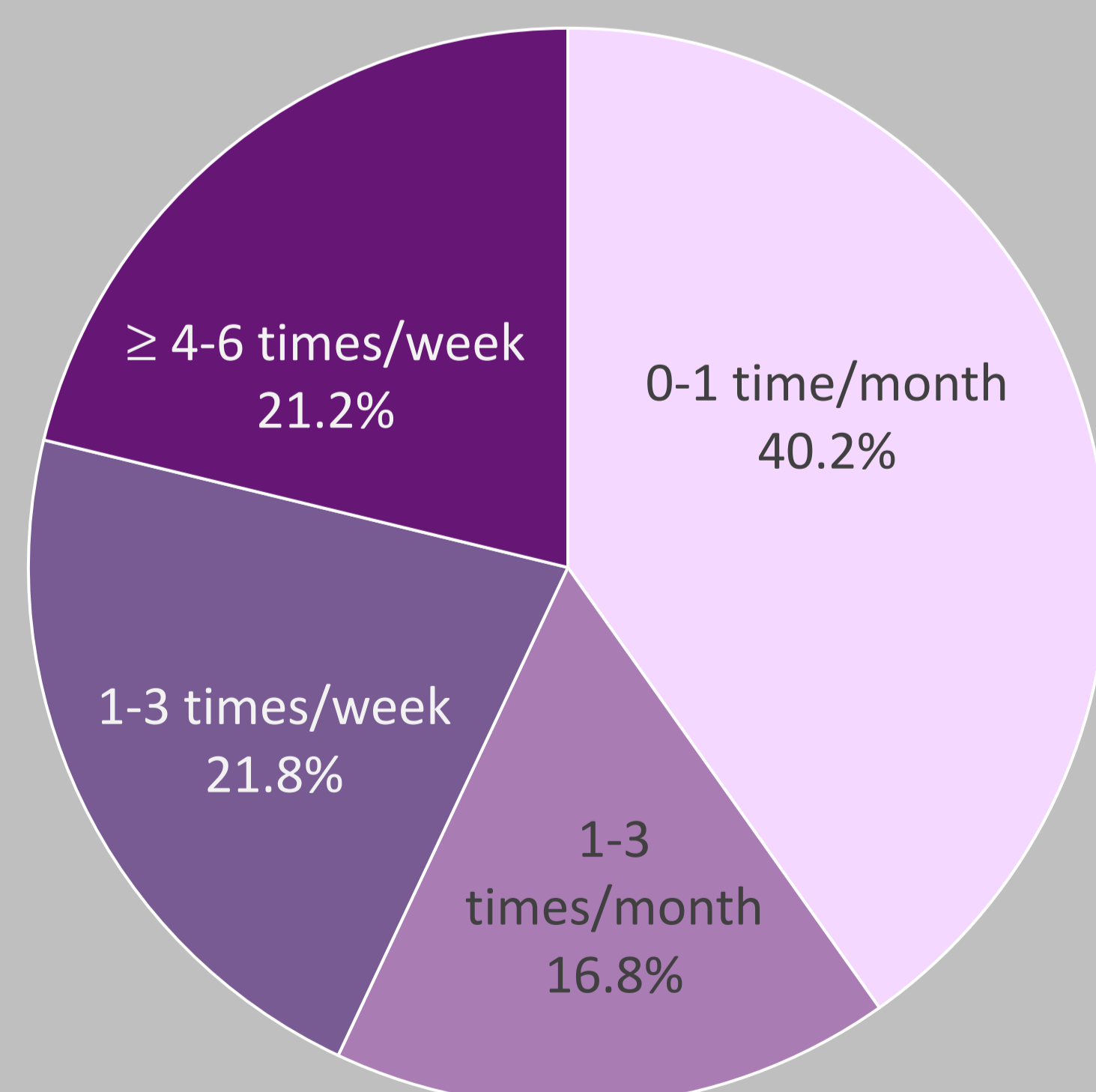
Table 1 Association Between Nuts Consumption and Cognitive Function

	≤1 time/month	1-3 times/month	1-3 times/week	≥4-6 times/week	p for trend
<b>Model 1</b>	Ref	-22.6 (-55.4-10.3)	-18.8 (-49.1-11.5)	-34.2 (-64.8 to-3.7)	0.030
<b>Model 2</b>	Ref	-24.5 (-56.9-7.9)	-24.0 (-54.0-5.9)	-36.9 (-68.1 to -5.8)	0.016
<b>Model 3</b>	Ref	-20.4 (-53.2-12.5)	-18.9 (-49.3-11.6)	-31.3 (-62.9-0.2)	0.048

Model 1 adjusted for age and gender.

Model 2 further adjusted for education, smoking, physical activity, intake of fruit and vegetable.

Model 3 further adjusted for BMI, diabetes, hypertension, and medication for diabetes and hypertension.



Distribution of Nuts Intake among the participants

## Conclusion

Nuts consumption is beneficial for cognitive function as measured by MRT, especially among those with old age, diabetes and hypertension. Further prospective studies and randomized clinical trials are needed to assess the amount and type of nuts consumption on the cognitive function.

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