

Introduction

Dementia is a growing public health problem, and it is a common disease in old people. Coffee and tea consumption is associated with cognitive function, where higher tea consumption is associated with decreased risk of cognitive impairment¹. Coffee consumption is linked to better memory performance². In the region, only few studies discussed the association between tea/coffee and cognitive function. However, currently there are no known studies looking at the association between coffee/tea consumption and cognitive function in Qatar. The aim of this study is to identify tea/coffee drinking patterns and their association with cognitive function as measured by mean reaction time. In addition to assessing the interaction between tea/coffee patterns and blood lipids.

Methodology



Study sample

The study sample included a random sample of 1000 adults aged ≥ 20 years attending the Qatar Biobank Study.
-500 men and 500 women



Outcome variable

Mean reaction time (MRT) was used as an indicator of cognitive function, which was assessed using a computer-based self-administered touch screen test.



Exposure variable

Habitual food consumption during the previous year and coffee/tea consumption were assessed using food frequency questionnaire (FFQ).



Statistical analysis

- Drinking patterns were identified using factor analysis.
- Data were analysed using STATA 16
- ANOVA and Chi-squared tests.
- Multivariable linear regression models

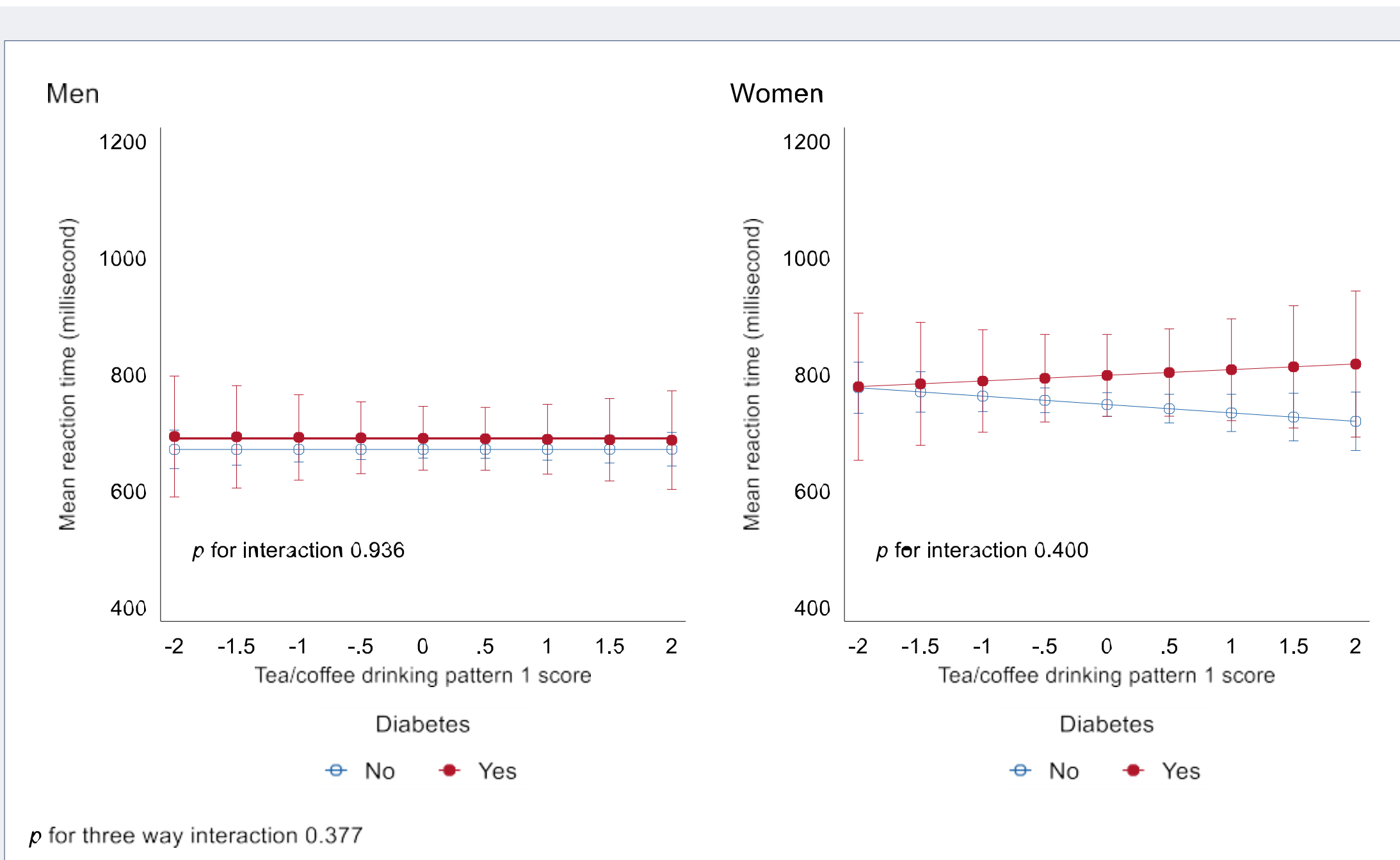


Figure 1 Interaction between gender, tea/coffee drinking patterns and diabetes in relation to mean reaction time.

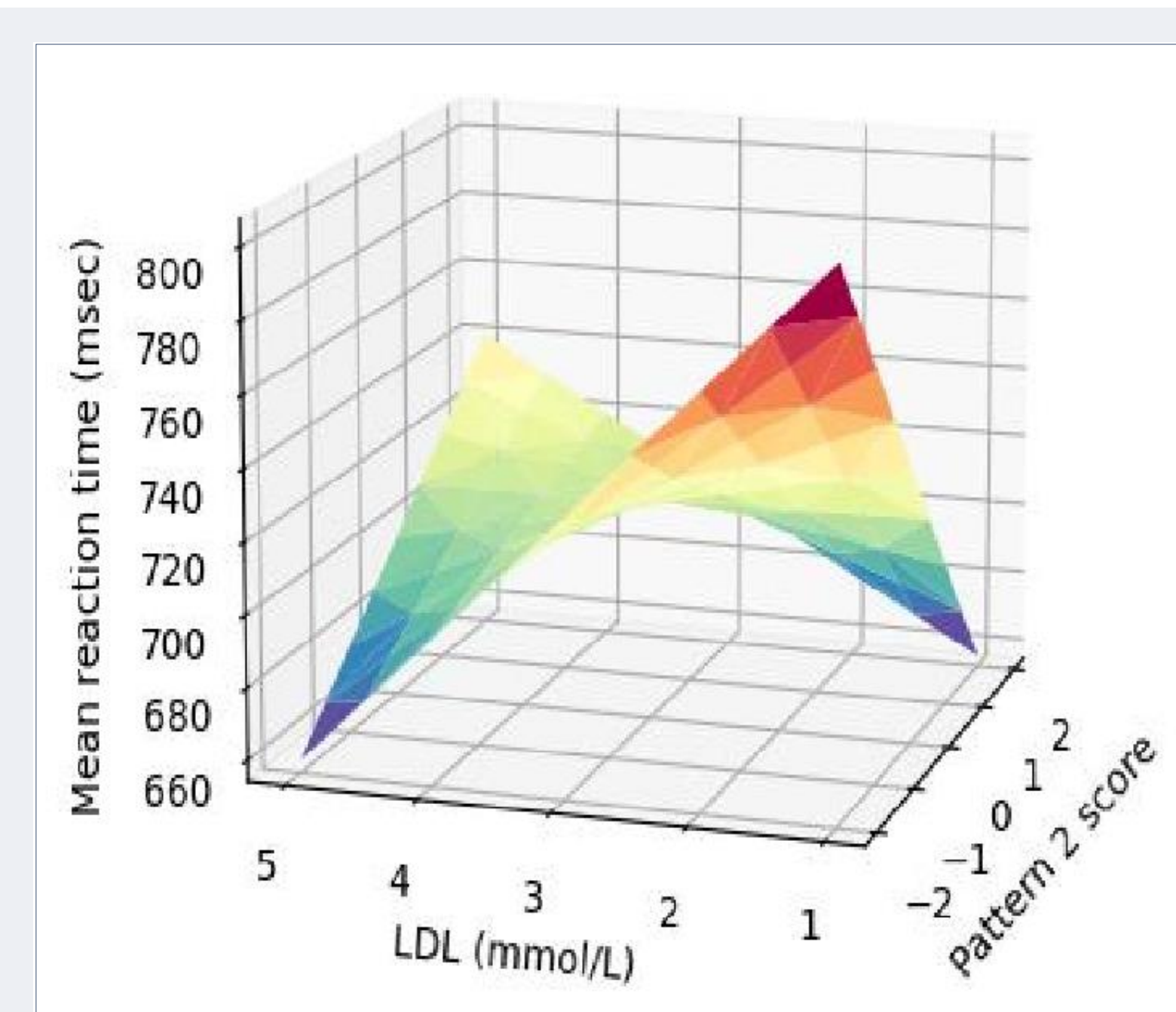
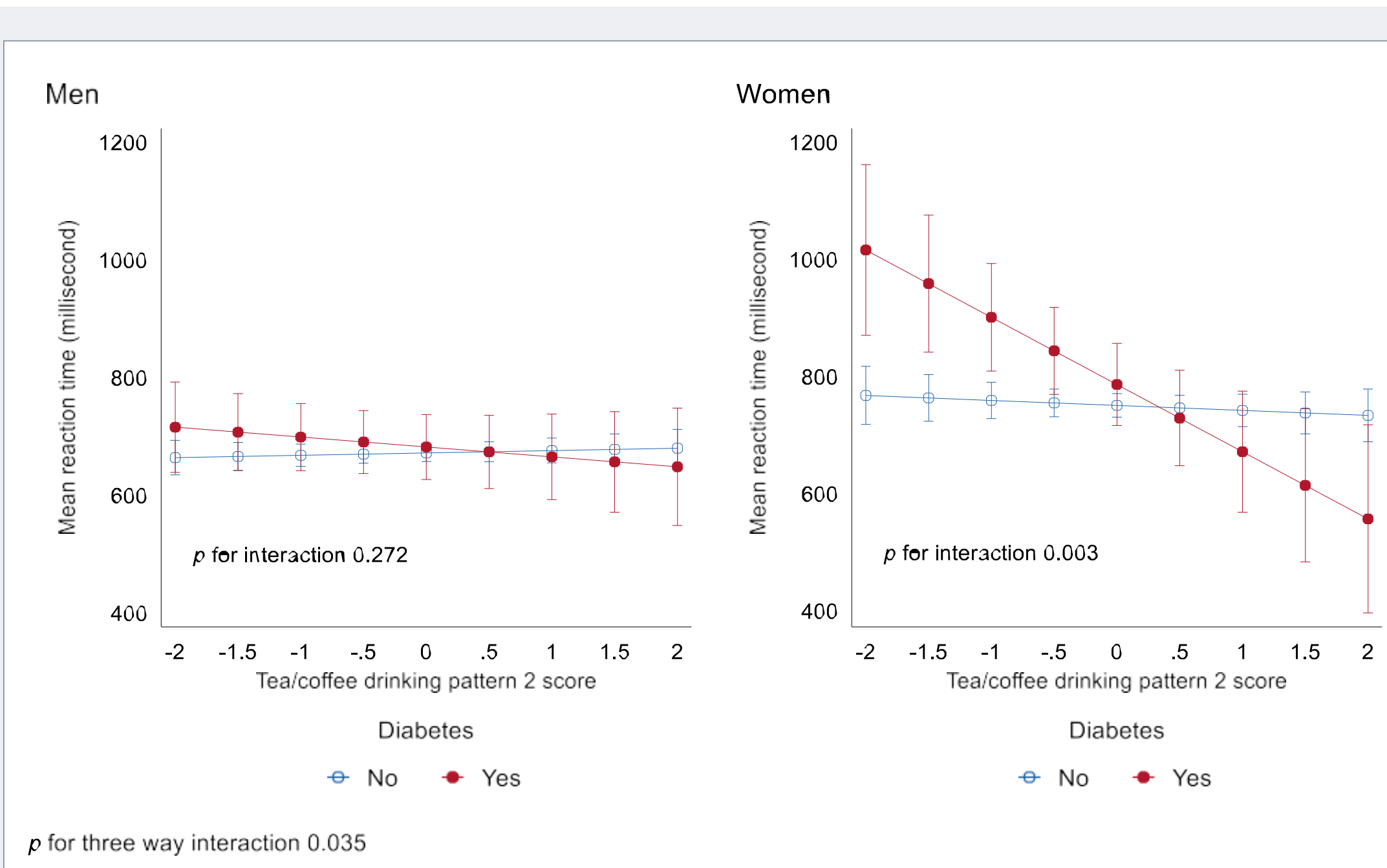


Figure 2 Interaction between tea/coffee drinking pattern 2 and LDL in relation to mean reaction time

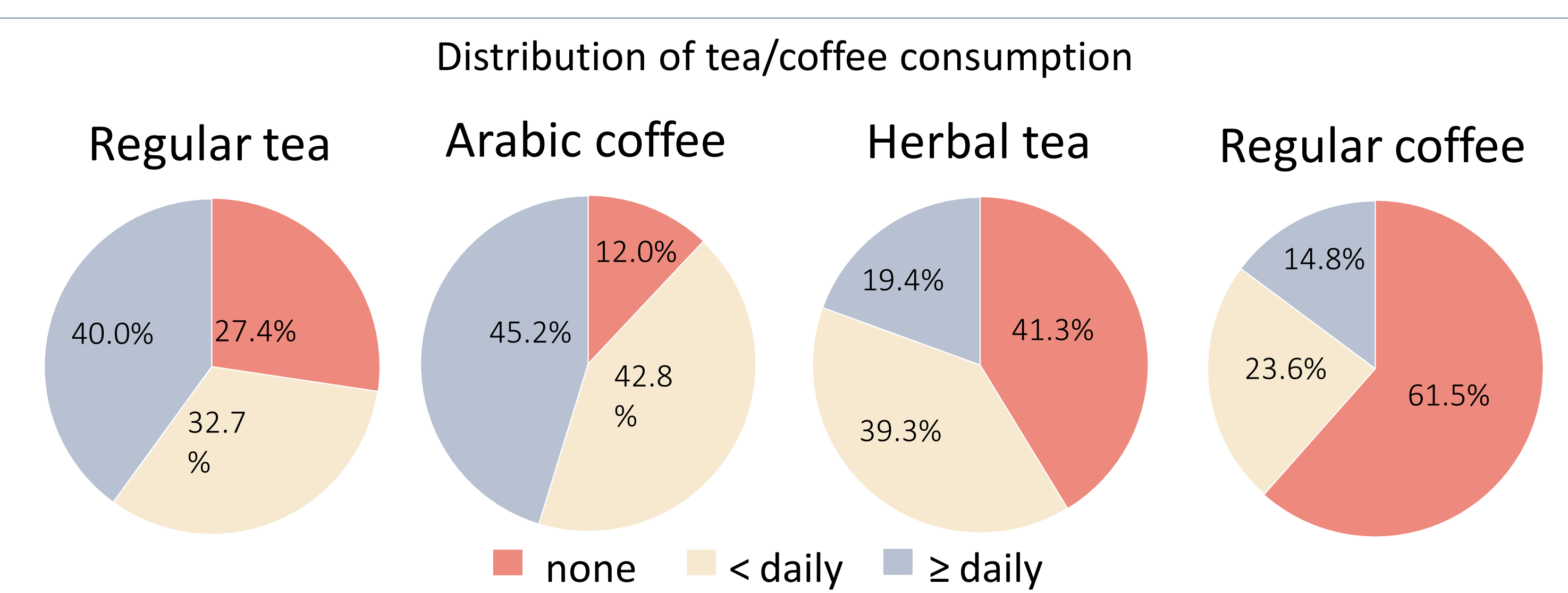


Table 1 Regression coefficients (95%CI) for mean reaction time by levels of tea and coffee consumption

	Non-consumer	< 1 time/day	≥ 1 time/day	P for trend
Herbal tea				
Unadjusted	Ref	-28.5 (-56.7,-0.4)	-7.5 (-42.2-27.2)	0.38
Multivariable model	Ref	-28.7 (-54.0,-3.4)	-32.5 (-63.8,-1.2)	0.020
Regular coffee				
Unadjusted	Ref	-39.5 (-69.8,-9.1)	-66.7 (-103.0,-30.4)	<0.001
Multivariable model	Ref	-4.8 (-32.4-22.7)	-38.0 (-71.3,-4.8)	0.042

Conclusion

Tea/coffee consumption was positively associated with cognitive function, specifically for regular coffee and herbal tea. Furthermore, in people with low LDL, tea/coffee drinking pattern 2 was inversely associated with MRT. Further cohort studies and randomized clinical trials are needed to confirm these results especially in Arabic population.

Acknowledgement

We are thankful for all Qatar Biobank staff for providing the data.

Results

The sample had a mean age of 35.8 years old, mean MRT of 715.3 milliseconds and mean LDL-C of 2.96 mmol/L. 12.1% were diabetic and 9.6% were hypertensive.

- There were two identified drinking patterns:
- Pattern 1: High consumption of regular tea, Arabic coffee, and herbal tea.
 - Pattern 2: High loadings of instant coffee, regular coffee, and Karak.

Regular coffee and herbal tea consumption was inversely associated with MRT, where other tea/coffee types were not associated with MRT (Table 1).

Higher intake of tea/coffee drinking pattern 2 in diabetic women was linked to lower MRT (p-value for interaction = 0.035) (Figure 1).

Among people with low LDL levels, higher pattern 2 tea/coffee consumption was associated with lower MRT (Figure 2).

References

1. Shirai Y, et al. Green tea and coffee intake and risk of cognitive decline in older adults: the National Institute for Longevity Sciences, Longitudinal Study of Aging. *Public Health Nutr* 2019; 1-9.
2. Araújo LF, et al. Inconsistency of Association between Coffee Consumption and Cognitive Function in Adults and Elderly in a Cross-Sectional Study (ELSA Brasil). *Nutrients* 2015; 7(11): 9590-601.