



# Lipid profile and associated factors among an academic community of Higher Education

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## INTRODUCTION

Although there are a several factors which contribute to a higher risk of developing cardiovascular diseases, it is well-known that some of them are modifiable, such as physical activity, eating patterns and smoking (Robbins, Dietz, Cox, & Kuklina 2013). An increase in physical activity is associated with a significant reduction in the risk of cardiovascular-related death and also can attenuate or reverse the disease process in patients with cardiovascular disease, which can be mainly explained by a reduction in the plasma triglyceride concentration (Bellou et al., 2013; Warburton, Nico & Bredin, 2006). The aim of this study was to evaluate the lipid profile, glycaemia and relate these variables to each other and to the level of physical activity and Body Mass Index (BMI) in an academic community of Higher Education. Furthermore, it was analyzed whether gender and age group are also related with these parameters.

## MATERIAL AND METHODS

Participants were recruited from the Polytechnic Institute of Lisbon (students, teachers and other staff) originating a convenience sample of 66 participants (52 women; 14 men), aged between 18-61 years old.

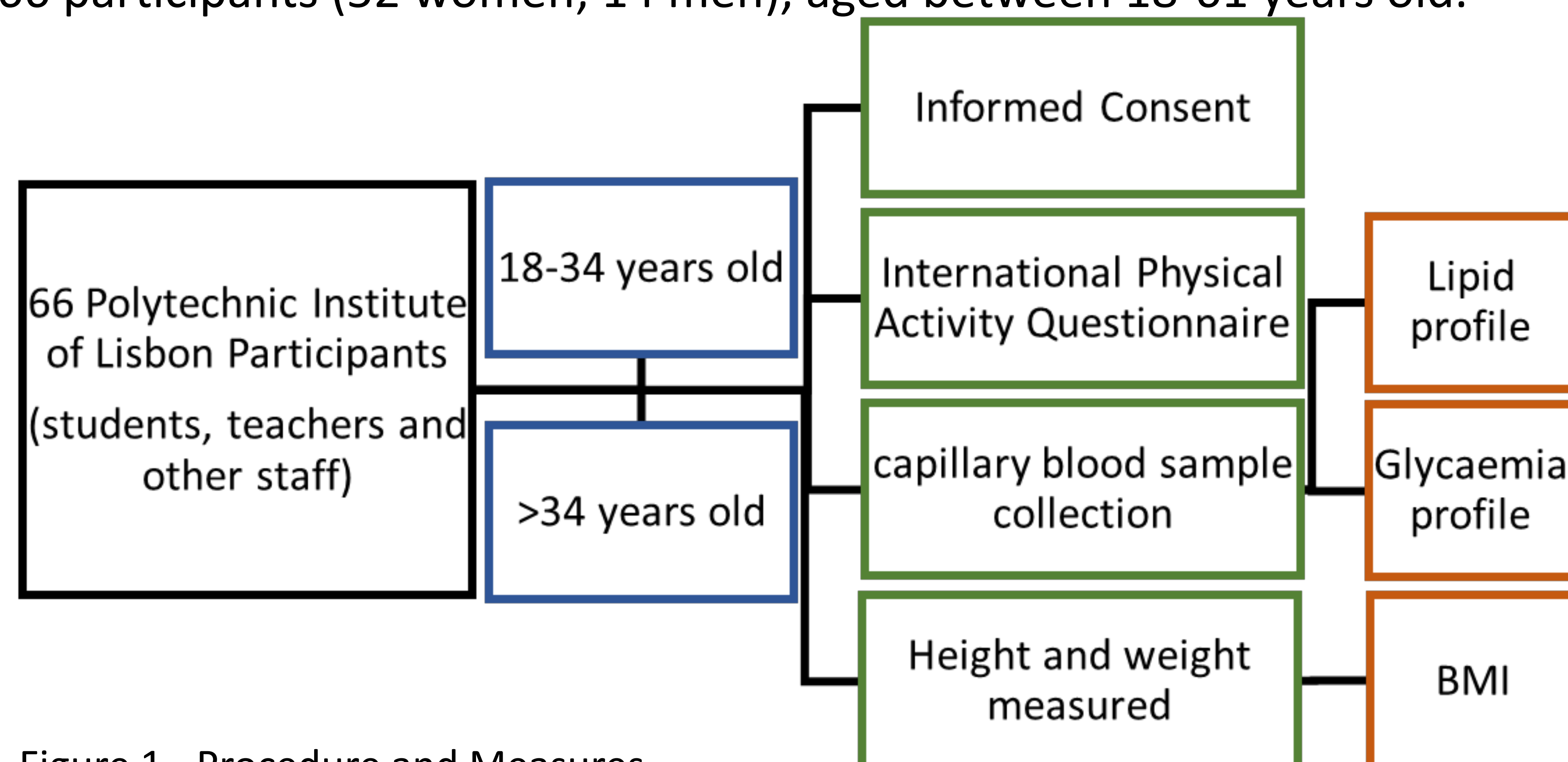


Figure 1 - Procedure and Measures.

The statistical analysis was based on a descriptive statistic (e.g. mean, median, standard deviation) and non-parametric statistic inference (e.g. Spearman's Ordinal Correlation Coefficient and Mann-Whitney Test).

## RESULTS

The results for the different parameters were as follows: glycaemia - M=90.20, SD=17.05; Total cholesterol -M=161.23, SD=31.02; HDL - M=53.53, SD=13.82; LDL - M=84.77, SD=25.86; triglycerides - M=115.61, SD=67.30; BMI - M=23.52, SD=3.60.

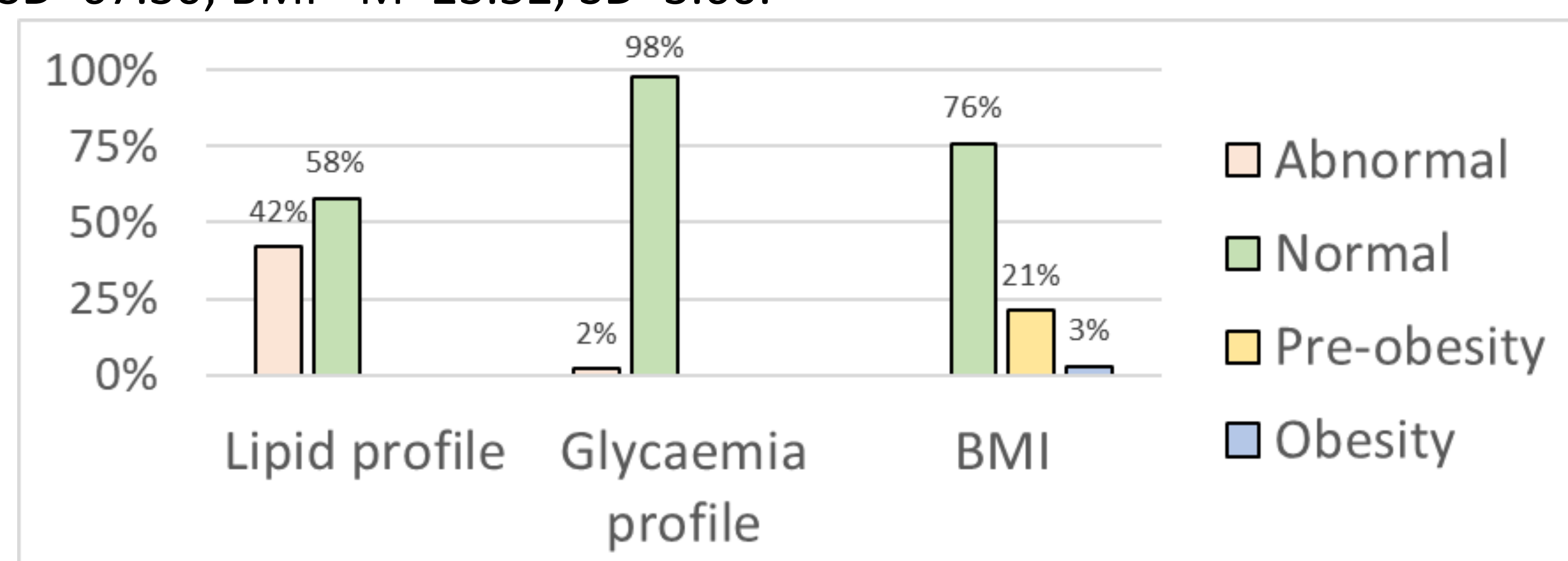


Figure 2 – Lipid profile, Glycaemia profile and BMI Results.

There was a significant correlation between the parameters: glycaemia and triglycerides ( $r_{s[66]}=.251$ ,  $p<.050$ ); glycaemia and BMI ( $r_{s[66]}=.269$ ,  $p<.050$ ), Total cholesterol and triglycerides ( $r_{s[66]}=.457$ ,  $p<.001$ ) and HDL cholesterol and BMI ( $r_{s[66]}=-.440$ ,  $p<.001$ ).

The Mann-Whitney test showed that Total and HDL cholesterol was statistically significantly higher in women ( $p<.050$ ;  $p<.001$ , respectively). The same test gave statistically significantly higher glycaemia, Total cholesterol, LDL, triglycerides and BMI in the over 34 years old group ( $p<.050$ ;  $p<.001$ ;  $p<.001$ ;  $p<.050$ ;  $p<.001$ , respectively).

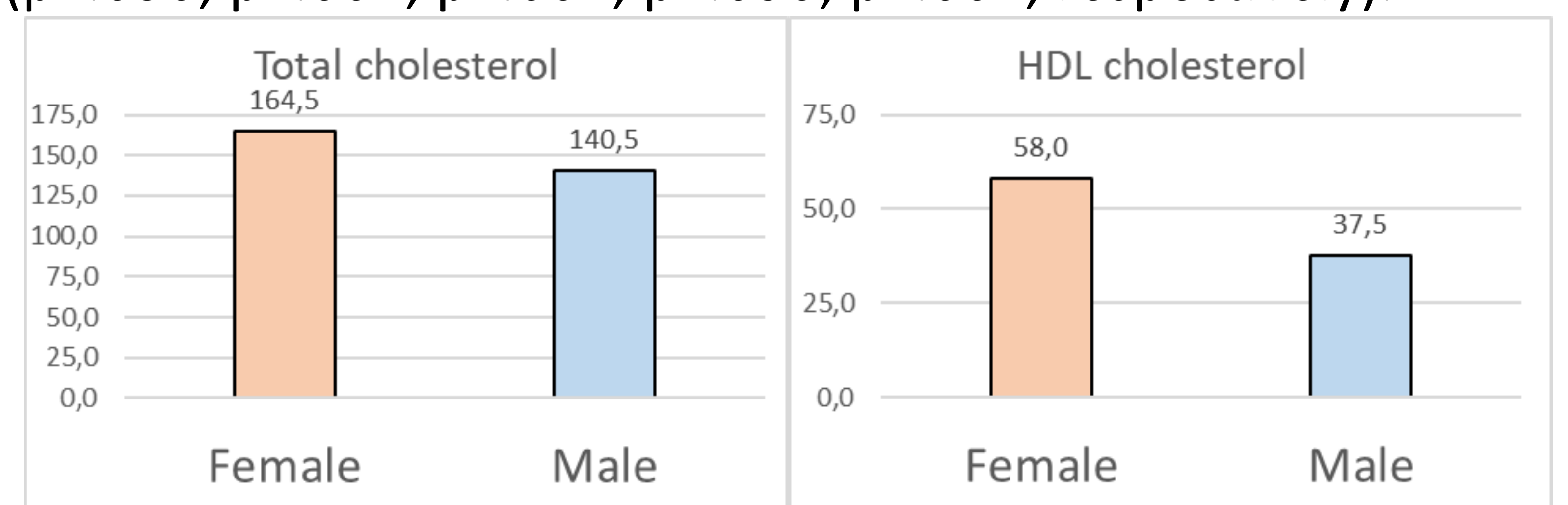


Figure 3 – Total and HDL cholesterol (mg/dL) median by gender.

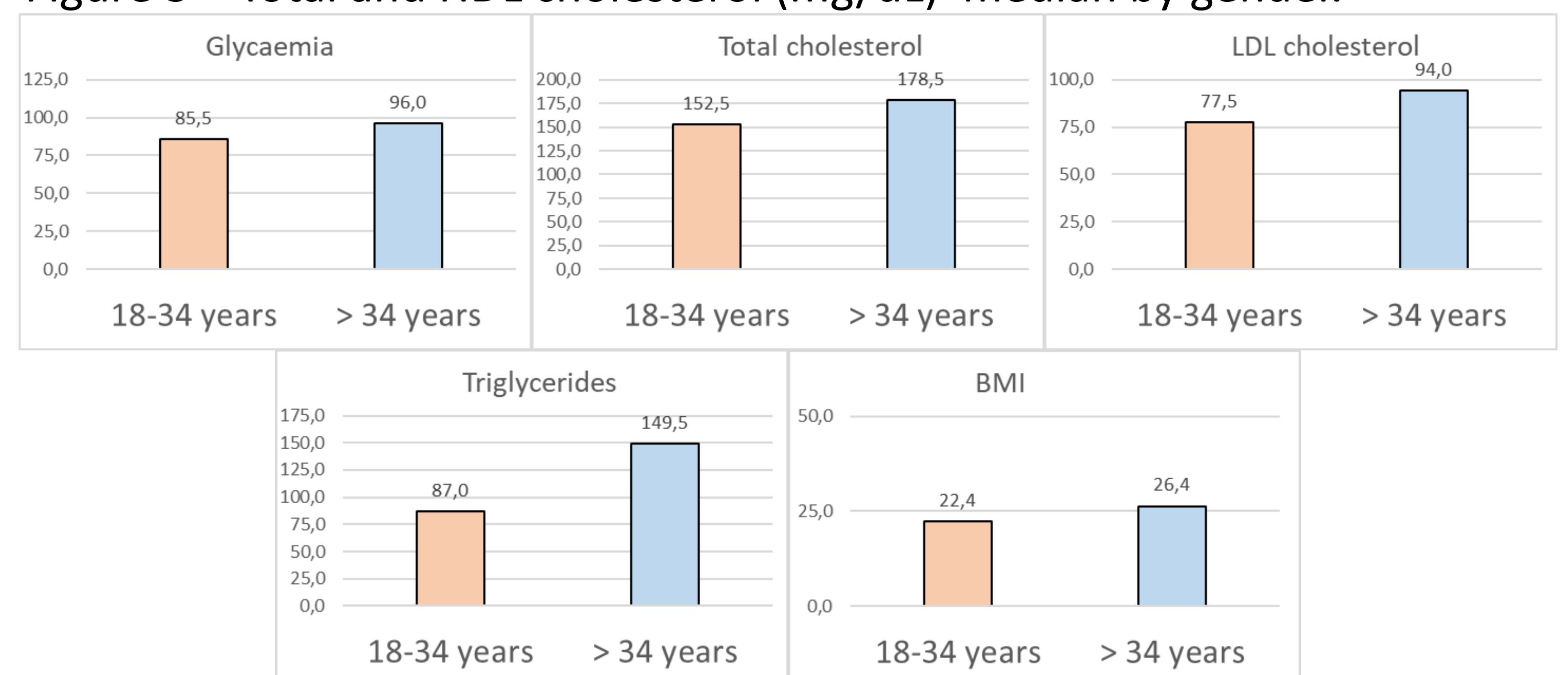


Figure 4 – Glycaemia, Total and LDL cholesterol, Triglycerides (mg/dL) and BMI (kg/m<sup>2</sup>) median by age.

## CONCLUSIONS

The findings confirm the presence of 42% of individuals with one of the lipid profile parameters altered, which is higher than what was reported in similar studies (Assis et al., 2011). A significant negative correlation was confirmed, between HDL levels and BMI values, which is in line with the expected (Coelho et al., 2005). There was no correlation with physical activity. These results are not according to others, that reported negative correlations (e.g. triglycerides, Total Cholesterol) as well as a positive (e.g. HDL) (Bellou et al., 2013; Wang & Xu, 2017). Females showed higher values of Total cholesterol and HDL and it was found that older individuals presented higher glycaemia, Total cholesterol, LDL, triglycerides and BMI. The information presented in this study highlights that academic context, could provide an additional setting for prevention targeting cardiovascular risk.

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