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CISViT

Cohort Infantil de Salut Visual de Terrassa
[Terrassa Infantile Visual Study Cohort]

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From bench to bedside

PARENTAL SOCIOECONOMIC STATUS, HIGH COMPLEXITY SCHOOLS AND MYOPIA

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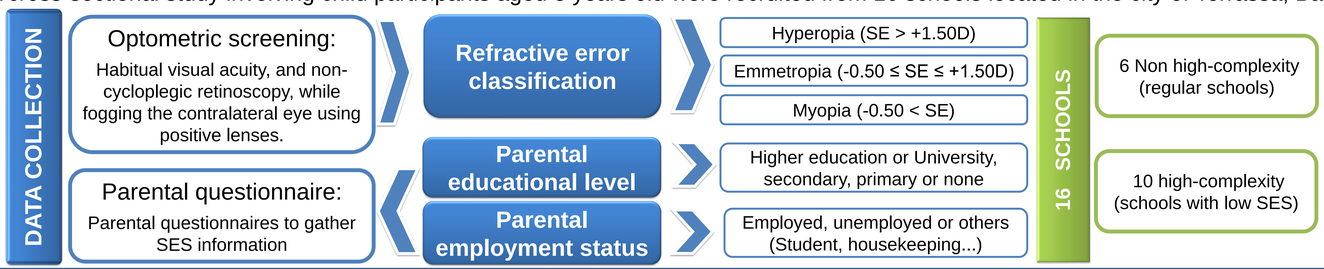
INTRODUCTION AND AIMS

- The aetiology of myopia is complex and still not fully understood.
- Besides genetics, multiple environmental risk factors for myopia have been proposed being time outdoors and education the two major risk factors identified.[1]
- A link between income and myopia has been suggested in some Asian countries,[2] but the association between socioeconomic status (SES) and myopia has been less explored, especially in young paediatric populations and in Europe.

The aims of this study are to investigate a possible association between the presence of myopia in children from southern Europe and parental educational level as well as employment status. The association between myopia and attending high-complexity schools was also investigated.

METHODS

A cross-sectional study involving child participants aged 8 years old were recruited from 16 schools located in the city of Terrassa, Barcelona, Spain (n=813). The data collection comprised an optometric screening and a parental questionnaire:



- JASP v15 was used for statistical analysis and was twofold: considering spherical equivalent (SE) refractive error as a continuous dependent variable and as a categorical dependent variable.
- Non-parametric Kruskall-Wallis and Mann-Whitney tests were used for statistical purposes as SE was not normally distributed (continuous variable).
- Contingency tables and Chi-square tests were used to study associations between SES and SE (categorical variable).

RESULTS

- A total of 750 children were included in the study (46.5% males and 53.5% females, SE ranging from +6.50D to -10.50D (mean 0.276±SD1.15)). Data from 63 children were excluded due to incomplete parental questionnaires.
- Myopia was found to be more prevalent than hyperopia in the population sample, 11% (95% CI 8.8-13.3) vs 4.8% (95% CI 3.3-6.3); figure 1, with no differences between genders (p>0.05).
- A tendency to a higher prevalence of myopia in children with unemployed mothers was observed, but statistical analysis revealed no significant associations between SE or presence of myopia and parental employment status or educational status (p=0.051) (figure 2).
- A higher prevalence of myopia (2x) was found in high-complexity schools compared to non-high complexity schools (figure 3). Chi-square tests confirmed that the association between high complexity schools and SE was statistically significant (p=0.014).

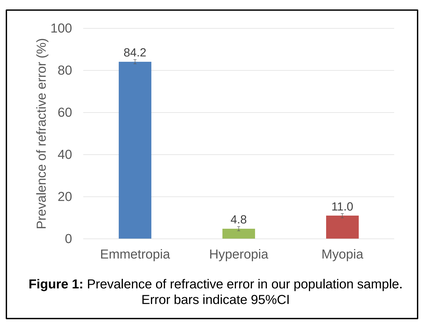


Figure 1: Prevalence of refractive error in our population sample. Error bars indicate 95%CI

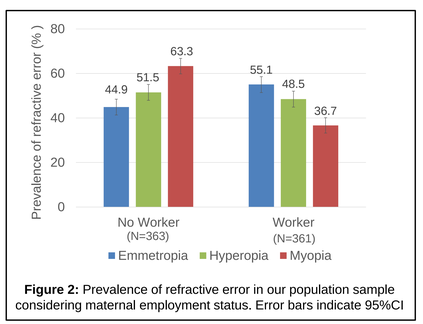


Figure 2: Prevalence of refractive error in our population sample considering maternal employment status. Error bars indicate 95%CI

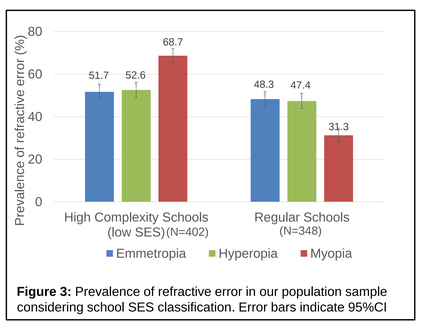


Figure 3: Prevalence of refractive error in our population sample considering school SES classification. Error bars indicate 95%CI

CONCLUSIONS

The **prevalence of myopia** in our 8 year old sample population is of **11**%, which is different to the prevalence recently reported in Spain.[3]
Differences in prevalence between these studies could arise from methodological study differences, in particular in the recruitment and sample population.

There is no association between **refractive error** and **parental educational level** or **parental employment** in 8-year-old children, suggesting no links between SES and SE. Further studies are warranted to investigate if this persists for older child populations.

There is an association between **refractive error** and **high-complexity schools. Myopia** was **2x higher** in **high-complexity schools.**

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