

The prevalence of visual impairment and blindness among Roma population in Ukraine

Agnieszka Charaziak-Kovács M.Sc., Arkadiusz Kołodziejczyk M.Sc., Brad Genreux B.Sc., Sylwia Kropacz M.Sc., Mladenovich Derek O.D., FAAO, MPH (Pennsylvania College of Optometry @ Salus University)



PURPOSE

The purpose of this study is to determine the prevalence of visual impairment among an isolated and low-income Roma population in Domboki village in Ukraine (Zakarpatska Oblast).

According to World Romani Union and the Council of Europe there are nearly 40,000 Roma people living in Ukraine, many of them without electricity, access to primary education or health care.

METHODS

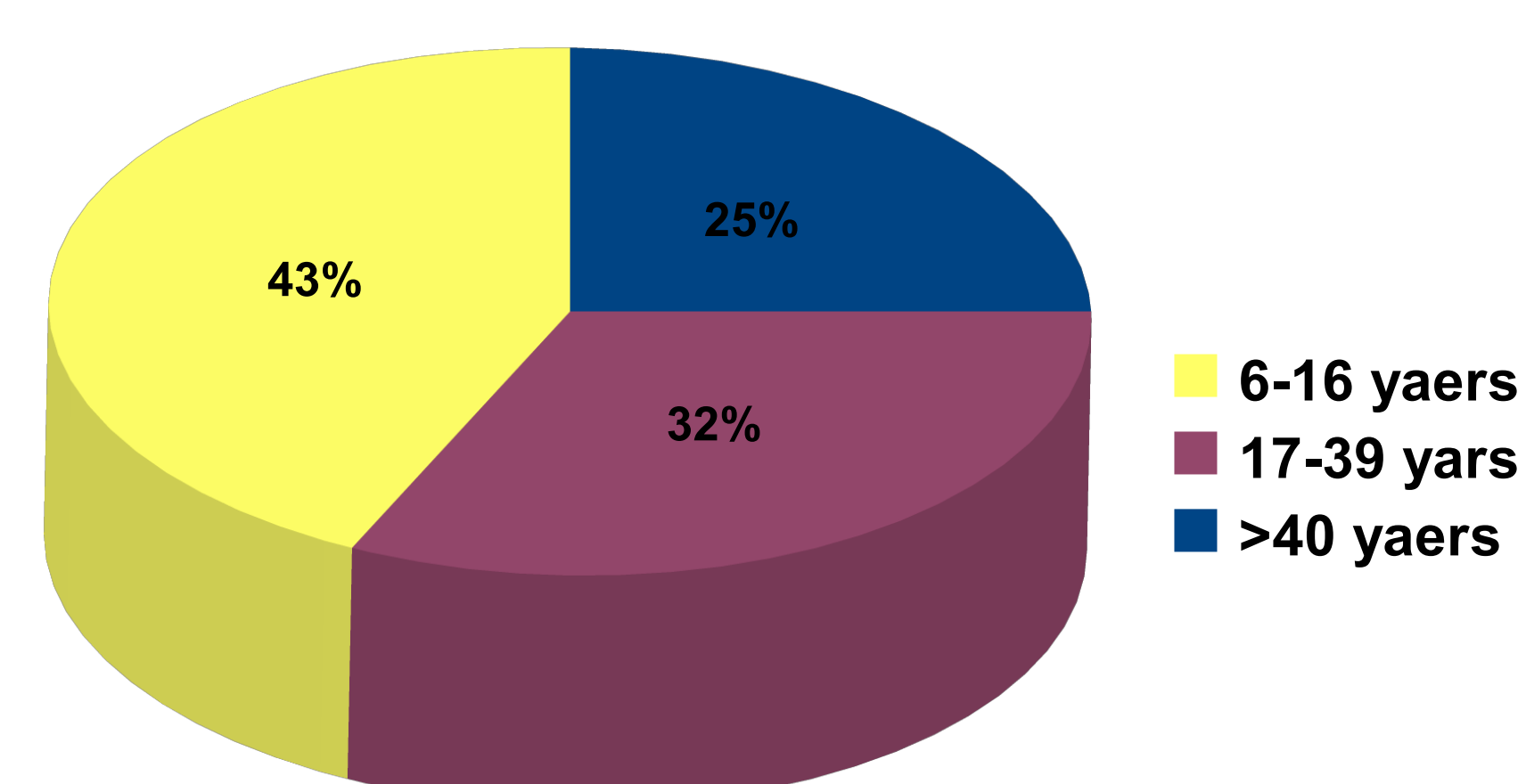
A combined retrospective review of patient records previously obtained through census of 6-84yo residents (85% response; n=102, 52% male) through the "Spectacles for the Roma" Refractive Program carried out between January and June 2011.

Recorded data:

- Visual acuity (Snellen, grouped according to IAPB/WHO categories of visual impairment and blindness),
- Refractive error (RE) status (autorefractometer Retinomax Canon and Donders method),
- Intraocular pressure (tonometer Diaton JGD-02),
- anterior and posterior segment health,
- blood pressure,
- self-reported socio-economic status, literacy, education level and family structure.

Data were analyzed by SPSS statistical package.

Ethical considerations for the patients were followed according to the Declaration of Helsinki.



Graph 1. Demography of respondents in Domboki, Ukraine (n=102).

RESULTS

General

- Average family consists of seven members,
- Average family income is 27 USD per month,
- Average school attendance is 2.7 years,
- 38% of the residents is literate, among which 45% is older than 15 yo,
- Most (72%) have never had an eye exam; utilization of the local health service has been only in cases of eye trauma; some had previous refractive services through "Spectacles for the Roma" Program on the annual refraction visit to their village.

Vision Acuity

- 92% present with normal vision acuity (VA>0.3),
- 95% of respondents with correction belong in WHO Category 0,
- 7% entering with low vision (VA<0.3 and ≥0.1),
- Prevalence of visual impairment with correction was 4%,
- In 43% the low vision was resulting from uncorrected refractive errors,
- 75% of those with low vision (VA<0.3) were children with amblyopia secondary to uncorrected RE,
- 1% present with blindness (VA<0.05).

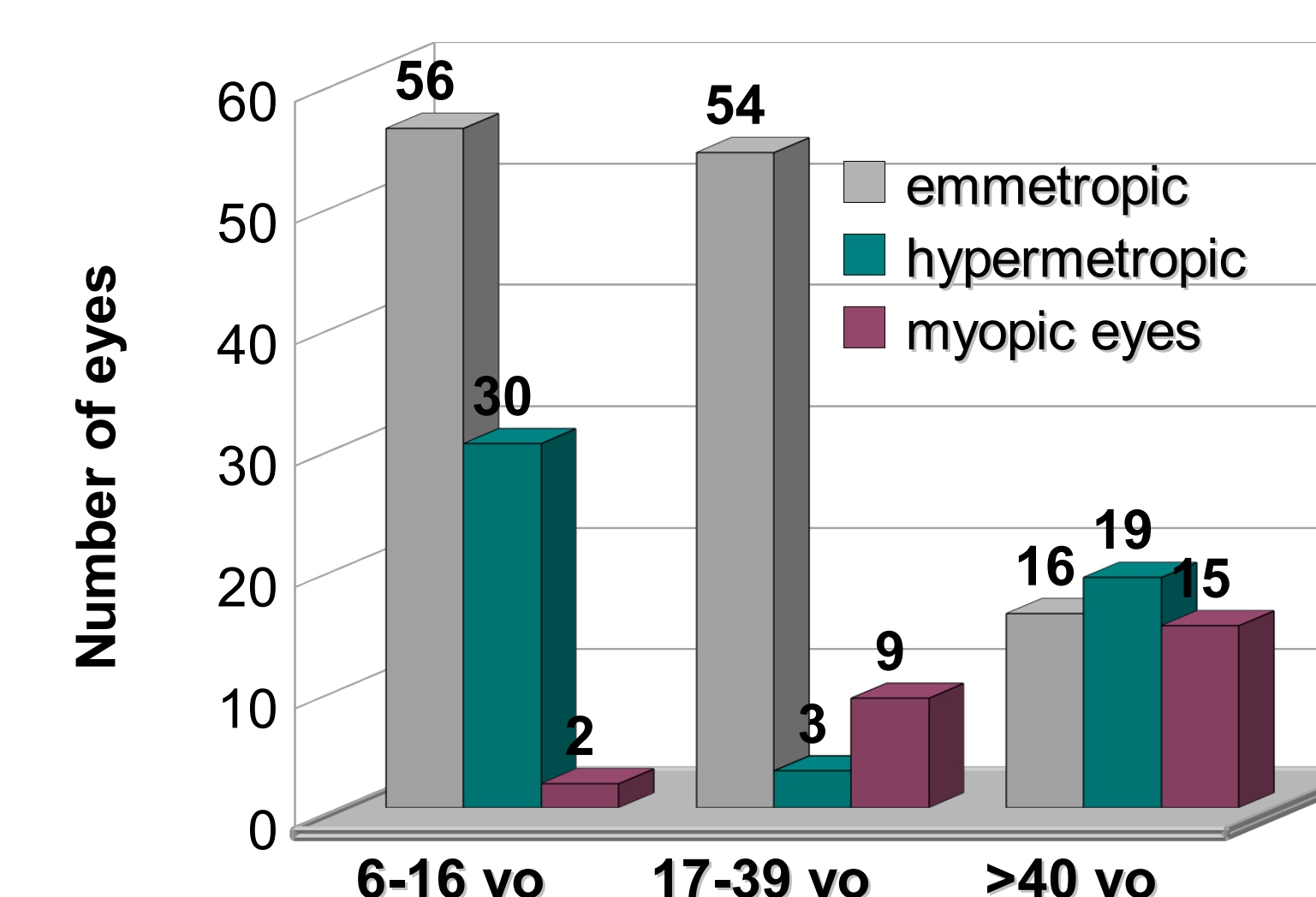
Table 1. Visual Acuity and causes of VA reduction in Roma population in Domboki, Ukraine.

(WHO 0VA≥0.3; WHO 1 VA<0.3 and ≥0.1; WHO 2 VA<0.1 and ≥0.05; WHO 3,4,5 VA<0.05)

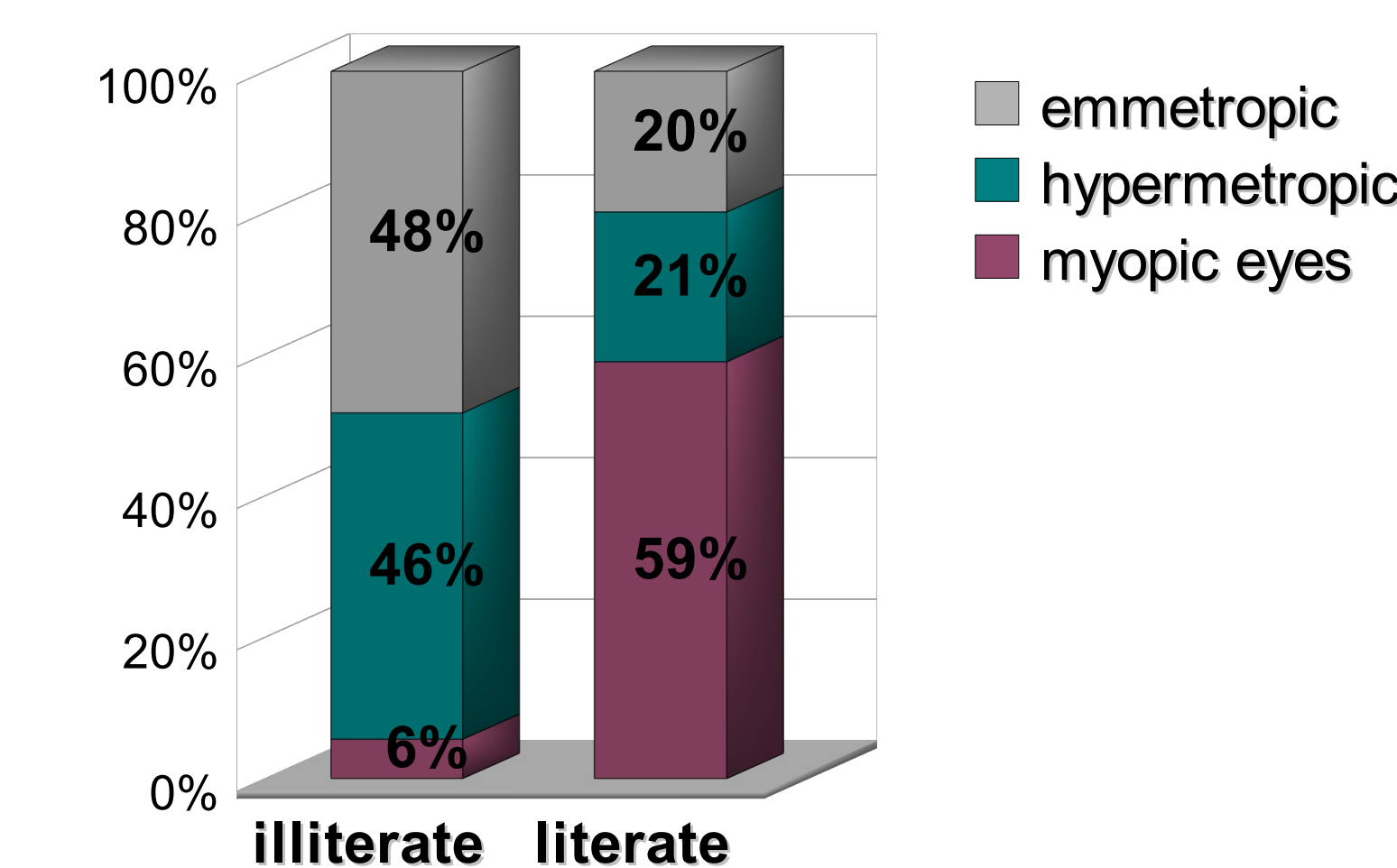
	WHO CATEGORIES			
	0	1	2	3, 4, 5
Presenting VA	92.1%	6.9%	-	1%
Best Corrected VA	95.1%	3.9%	-	1%
Causes of VA Reduction				
Low Myopia (-1 to -2D) at least in one eye	3.2%	14.3%		
Low Hyperopia (+1 to +2D) at least in one eye	8.7%			
Hyperopia more than +2D at least in one eye	7.6%	43%		
Refractive Amblyopia and Strabismus		28.4%		
Ocular Pathology		14.3%		
Cataract				100%
Trauma in 1 eye	2%			

Refraction

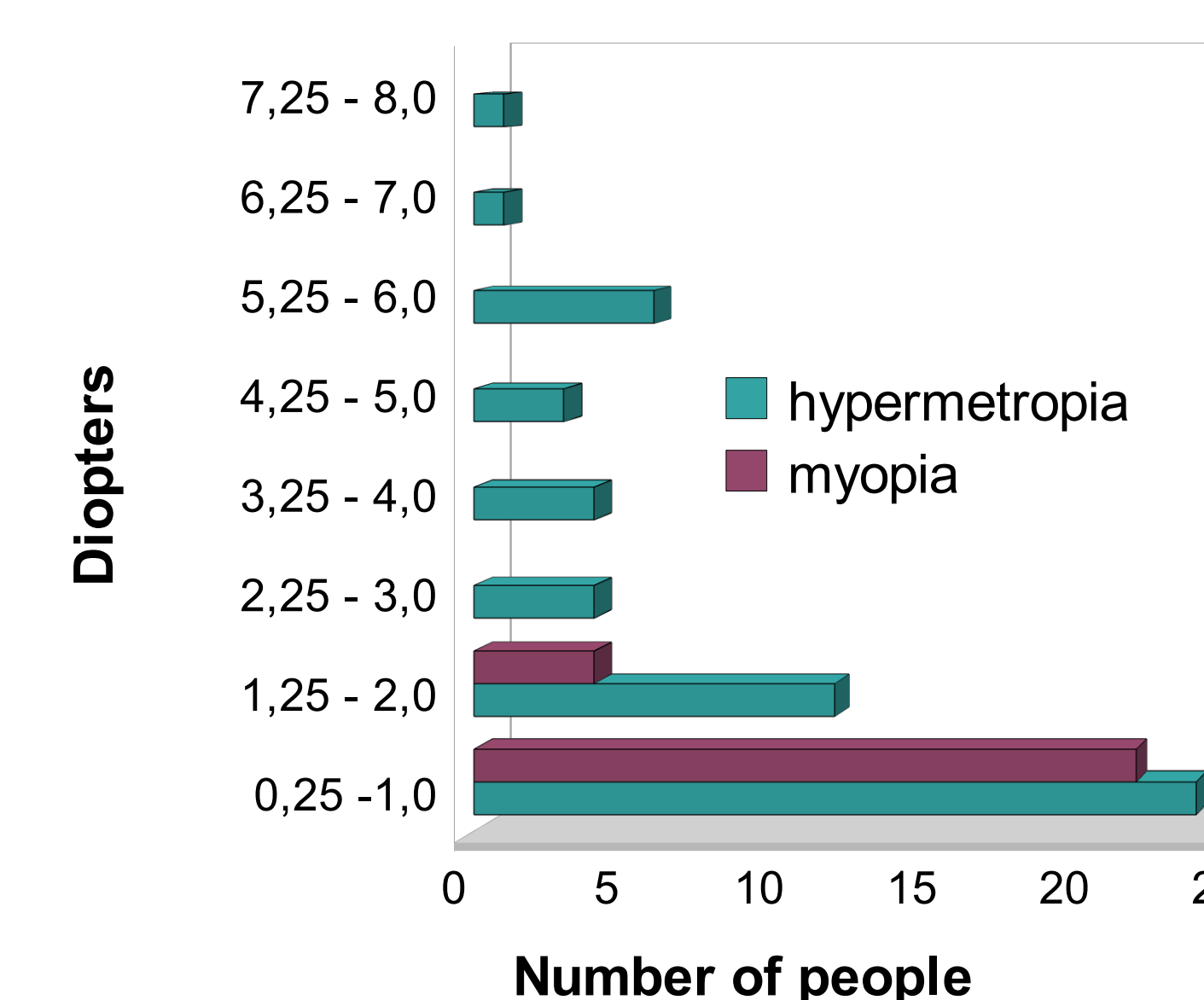
- 62% out of all eyes were emmetropic,
- 25.5% were hypermetropic (most common among male children, <17yo),
- 12.7% were myopic (myopia increasing with age, education level and literacy (p<0.05),
- Among school age children (6-17yo) prevalence of uncorrected myopia was 2%,
- 46 respondents (45%) required correction for distance at least one eye,
- In 20 patients lens >1 D was used,
- 88% of presbiops (>40yo) required correction for near vision, 50% of them were used the glasses.



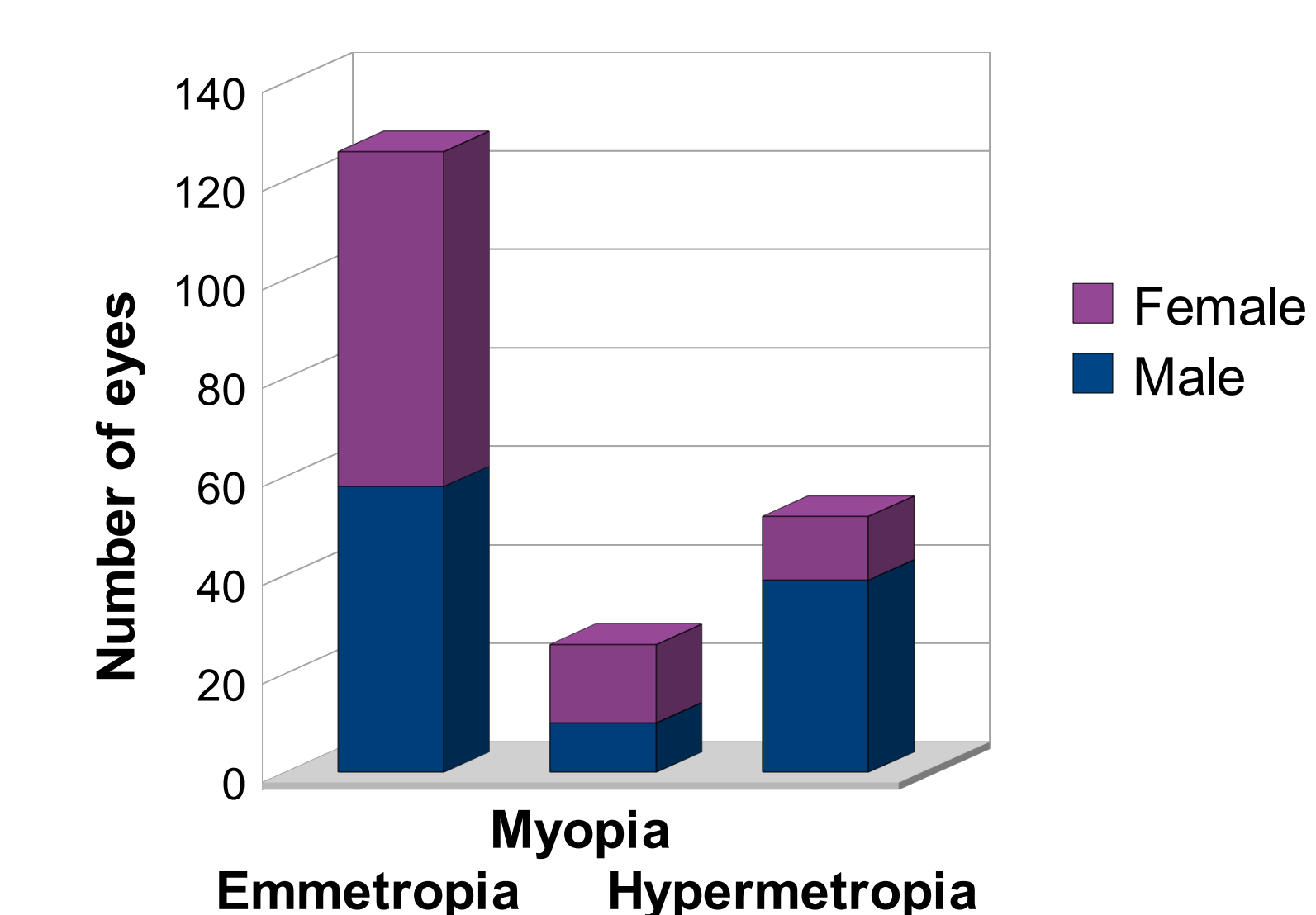
Graph 2. Prevalence of refractive errors in different age groups (n=204 eyes).



Graph 3. Prevalence of myopia in illiterate and literate groups (n=204 eyes; p<0.05).



Graph 4. Prevalence of refractive errors according to the power (n=204 eyes).



Graph 5. Refractive errors according to gender (n=204 eyes).

CONCLUSIONS

Recognizing the limitations associated with the methodology, it appears that the prevalence of visual impairment and blindness in the studied Roma population is higher, and it may be further exacerbated by the socio-economic and psycho-social factors, warranting further studies regarding health services access and utilization among the Roma. Refractive error population-based studies should be encouraged, especially given the impact of uncorrected refractive error on children, their scholastic achievement and well-being.

