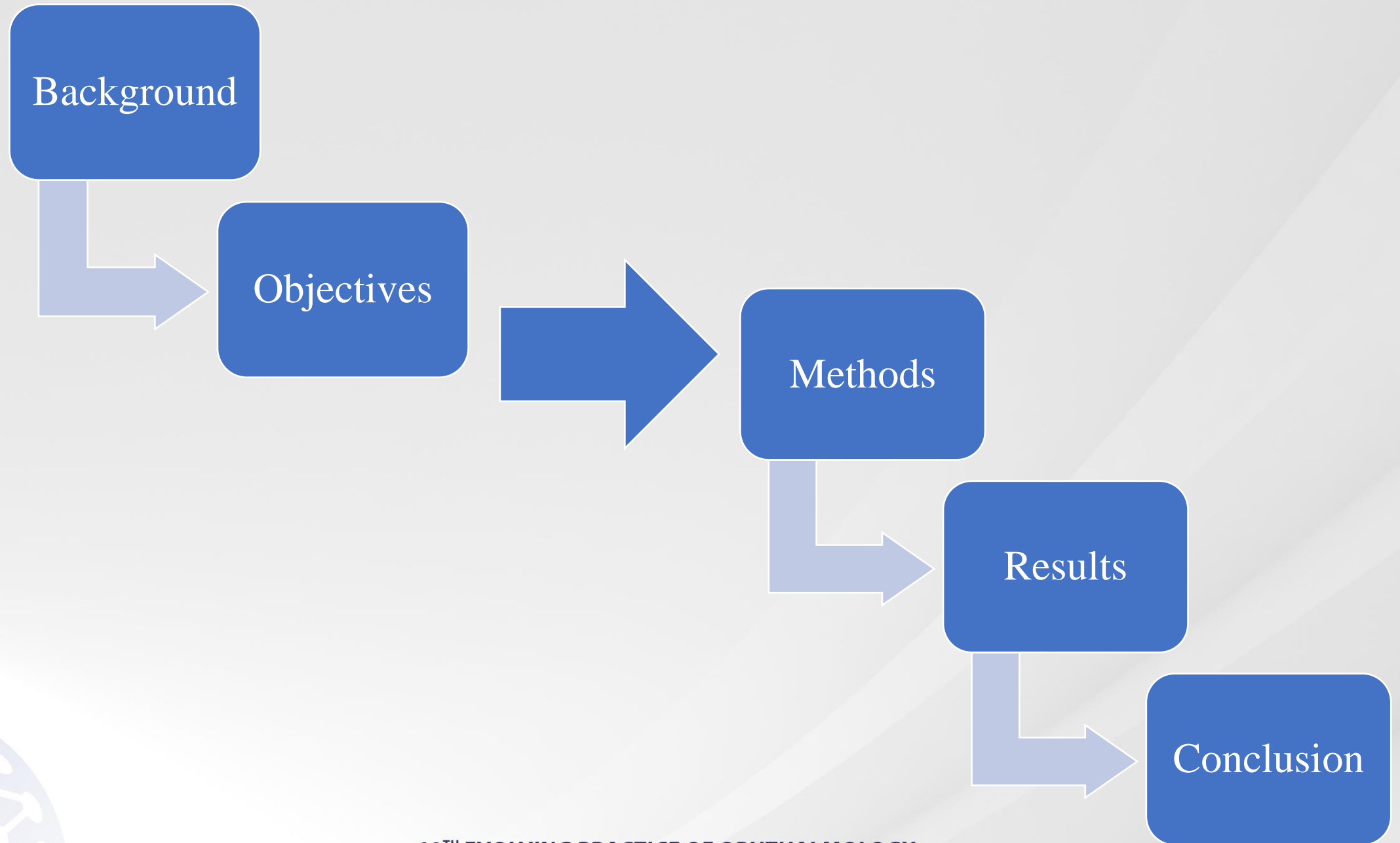


Progression of myopia among medical students at King Abdulaziz University

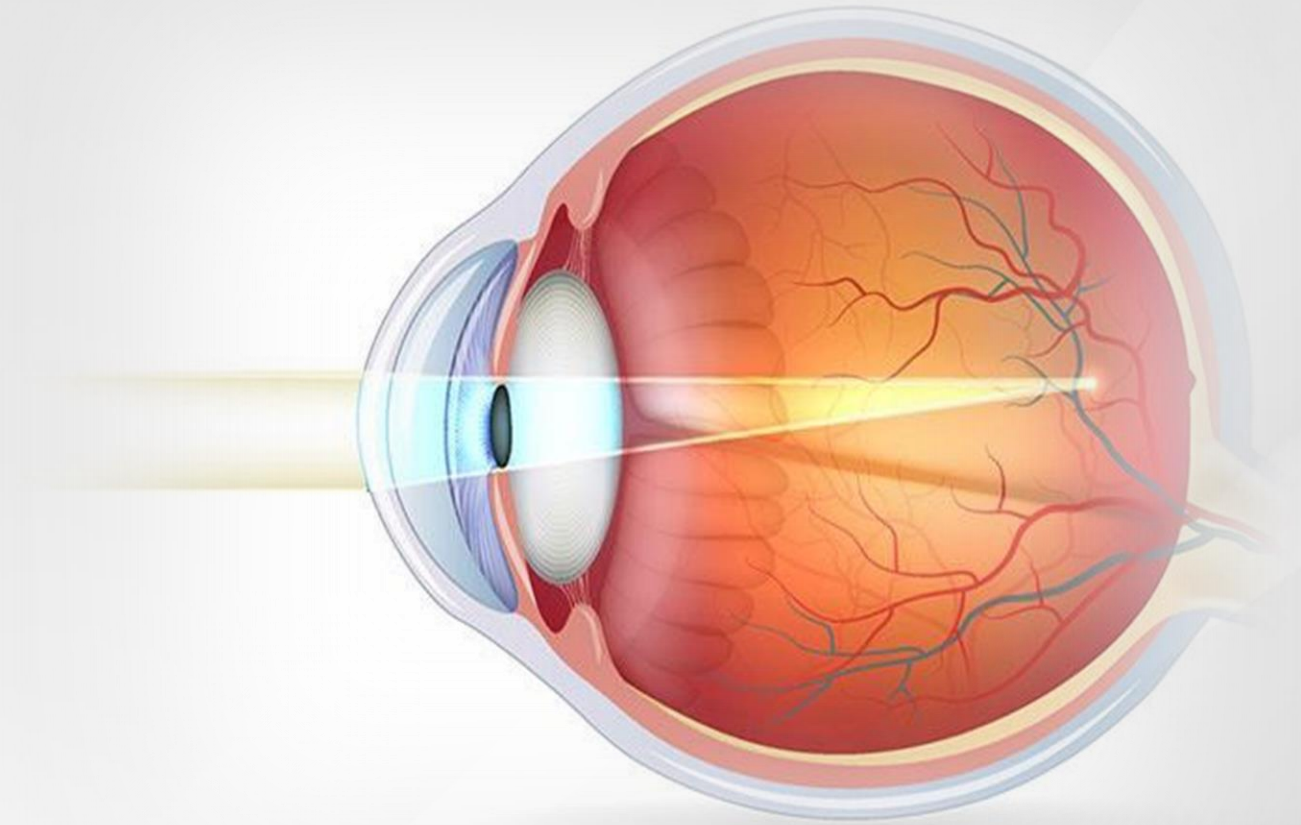
1-year cohort study

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BACKGROUND



10TH EVOLVING PRACTICE OF OPHTHALMOLOGY
MIDDLE EAST CONFERENCE



Why Myopia? - Globally

- Myopia has become a significant public health issue.
- Recognizing myopia as a global burden is essential since its prevalence is growing dramatically internationally.
- The global population of myopic people was 2.6 billion in 2020.
- It is estimated that 50% of the population will be myopic in 2050.

Why Myopia? - Nationally

- A study conducted in Arar city among 966 Saudi adults found the prevalence of RE was 45.8% with myopia being at 24.4%
- Among medical students in Alqassim university myopia was the commonest error of refraction at 53.7%



Myopia & Medical students !

- The most prevalent refractive error among medical students is myopia
- The proportion of myopic students increases yearly

Research Article

Incidence of myopic shift and related factors in young Chinese adults

Fang Duan, Zhaohui Yuan, Jiayu Deng, Anna CH Yeo, Adeline Yang, Björn Drobe, Yee Ling Wong & Xiang Chen  ...show less

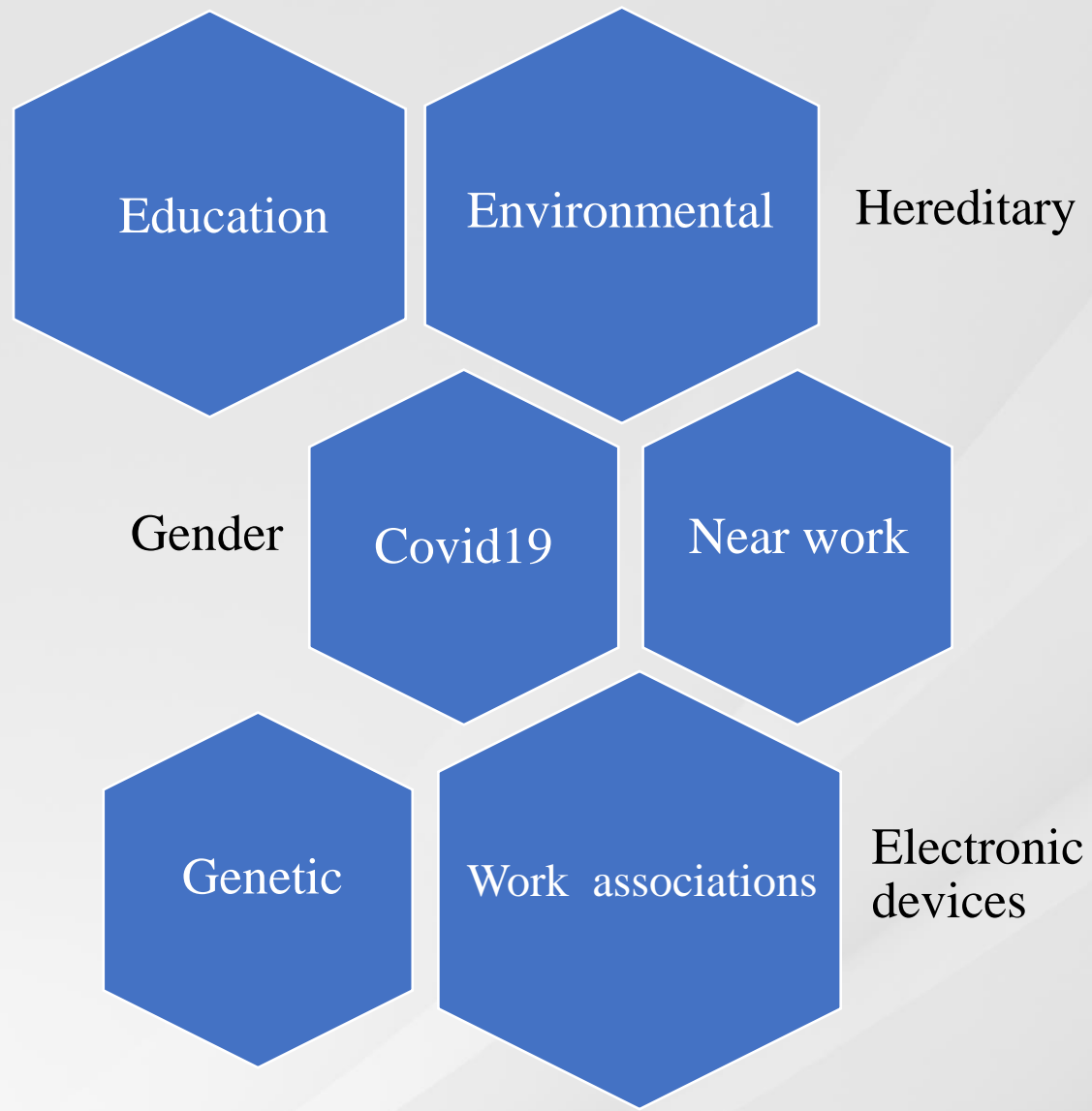
Prevalence Refractive Errors among Medical Students of Qassim University, Saudi Arabia: Cross-Sectional Descriptive Study

[Sultan H. Al-Rashidi](#),* [Adel A. Albahouth](#), [Waleed A. Althwini](#), [Abdullah A. Alsohibani](#), [Abdulmejeed A. Alnughaymishi](#), [Abdulamlaik A. Alsaeed](#), [Fahad H. Al-Rashidi](#), and [Salem Almatrafi](#)

Prevalence and pattern of refractive errors among Saudi adults

[Mujeeb Ur Rehman Parrey](#)¹ and [Ekramy Elmorsy](#)²

What is the cause?



OBJECTIVES:

To estimate myopia progression during one year period in junior medical students.

The only study carried out longitudinally to explore myopia progression among medical students in Saudi Arabia.

METHODS

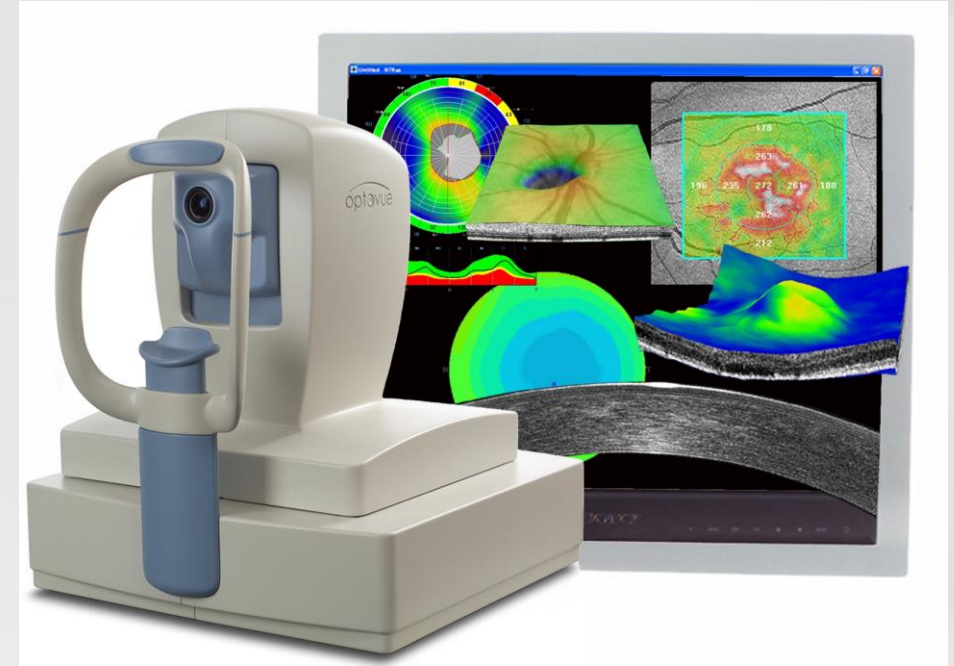
- DESIGN: one-year longitudinal cohort study.
- SETTING: King Abdulaziz University Hospital.
- SAMPLE SIZE: 85 medical students (41 male & 44 female).



METHODS

MAIN OUTCOME MEASURES:

- The students underwent an eye examination that included:
 - ✓ Autorefraction and ocular biometry.
 - ✓ Spherical equivalent refraction (SER).
 - ✓ Corneal curvature, axial length (AXL) elongation.
 - ✓ Anterior chamber depth (ACD).
- Changes between the study start and end were recorded.
- Information on the participants' demographic, ocular history, smart device usage, and other related risk factors were obtained.



RESULTS

- Myopia prevalence was 76% (65/85) on the first visit.
- One participant progressed from hyperopia to myopia.
- Five from initial emmetropia to myopia.
- Four from mild to moderate myopia.
- One from moderate to high myopia.



RESULTS

- Myopia prevalence was significantly related to the hours spent reading for learning/studying, and hours spent watching TV at the first visit ($P = .023$, $P = .046$, respectively) and total weekly average screen time at the second visit ($P = .002$).
- There was no difference in any optical coherence tomography parameters, AXL, and ACD macular parameter or the corneal curvature parameters between the first and second visits.

Table 1

Variables	N	Mean \pm SD	Mean Difference	95% C.I. of the Difference		p-value
				Lower	Upper	
V1 S.E. Rt	85	-1.58 \pm 1.9	-0.053	-0.211	0.106	0.508
V1 S.E. Lt	85	-1.53 \pm 2.0				
V2 S.E. Rt	81	-1.90 \pm 1.9	-0.120	-0.309	0.068	0.207
V2 S.E. Lt	81	-1.77 \pm 2.1				
V1 S.E. Rt	81	-1.62 \pm 2.0	0.278	0.115	0.441	0.001 ^a
V2 S.E. Rt	81	-1.90 \pm 1.9				
V1 S.E. Lt	81	-1.55 \pm 2.0	0.228	0.042	0.415	0.017 ^a
V2 S.E. Lt	81	-1.77 \pm 2.1				

^a Significant using Paired Sample T-test at ≤ 0.05 level

Table 2

Gender	N	Mean \pm SD	Mean Difference	95% C.I. of the Difference		p-value
				Lower	Upper	
Male	V1 S.E. Rt 38	-1.11 \pm 1.7	0.408	0.127	0.688	0.006 ^a
	V2 S.E. Rt 38	-1.51 \pm 1.7				
	V1 S.E. Lt 38	-1.02 \pm 1.5	0.362	0.122	0.602	0.004 ^a
	V2 S.E. Lt 38	-1.38 \pm 1.7				
Female	V1 S.E. Rt 43	-2.07 \pm 2.1	0.163	-0.023	0.348	0.084
	V2 S.E. Rt 43	-2.23 \pm 2.0				
	V1 S.E. Lt 43	-2.01 \pm 2.3	0.110	-0.174	0.395	0.437
	V2 S.E. Lt 43	-2.12 \pm 2.3				

^a-significant using Paired Samples Test at <0.05 level.

Table 3

Variables		V1		V2	
		S.E. Rt	S.E. Lt	S.E. Rt	S.E. Lt
What is the average distance when you use your mobile and or tablets ?	<10	-1.86 ± 2.5	-2.23 ± 2.5	-1.98 ± 2.4	-2.53 ± 2.3
	10-20	-1.60 ± 1.8	-1.46 ± 1.8	-1.94 ± 1.8	-1.74 ± 2.0
	20-30	-1.14 ± 1.5	-1.00 ± 1.5	-1.65 ± 1.4	-1.21 ± 1.6
	30-35	-3.33 ± 3.6	-3.25 ± 3.7	-3.58 ± 3.4	-3.58 ± 3.3
	>35	0.00 ± 0.0	0.50 ± 0.0	0.25 ± 0.0	1.75 ± 0.0
<i>p-value</i>		0.410	0.196	0.446	0.088
What is the average distance you sit away from the TV in m?	<1	-1.60 ± 1.4	-1.25 ± 1.5	-1.80 ± 1.3	-1.65 ± 1.5
	1-2	-0.93 ± 2.1	-0.97 ± 1.8	-1.32 ± 1.8	-1.00 ± 1.9
	2-3	-1.91 ± 1.9	-1.97 ± 1.8	-2.19 ± 2.0	-2.39 ± 1.9
	3-4	-1.48 ± 2.7	-1.44 ± 2.8	-1.81 ± 2.4	-1.56 ± 2.6
	>4	-1.54 ± 1.4	-1.54 ± 1.3	-1.70 ± 1.9	-1.70 ± 1.6
<i>p-value</i>		0.727	0.660	0.700	0.380
What is your average reading distance for printed materials in cm?	10-20	-2.69 ± 2.5 ^B	-2.84 ± 2.4 ^B	-2.91 ± 2.4 ^B	-3.23 ± 2.3 ^B
	20-30	-1.26 ± 1.5 ^{AB}	-1.18 ± 1.5 ^A	-1.82 ± 1.5 ^{AB}	-1.25 ± 1.9 ^A
	30-35	-0.88 ± 1.6 ^{AB}	-0.75 ± 1.4 ^{AB}	-1.50 ± 1.8 ^{AB}	-1.50 ± 1.8 ^{AB}
	>35	-0.13 ± 0.9 ^{AB}	-0.25 ± 0.4 ^{AB}	-0.13 ± 1.9 ^{AB}	-0.38 ± 0.9 ^A
<i>p-value</i>		0.021^{a,c}	0.009^{a,b}	0.023^{a,b}	0.002^{a,b}

Conclusion

- There is a significant increase in a myopic shift among medical students which may be due to multiple risk factors
- The most significant factors are:
 - the amount of hours spent on reading for learning/studying
 - lifestyle factors such as reading distance for small printed materials.
- It would be beneficial for more research to pinpoint additional characteristics that could minimize medical students' tendency for myopia.

Thank you for your attention



References