



CORRELATION OF BODY MASS INDEX WITH VISUAL ACUITY AMONG ADULTS.



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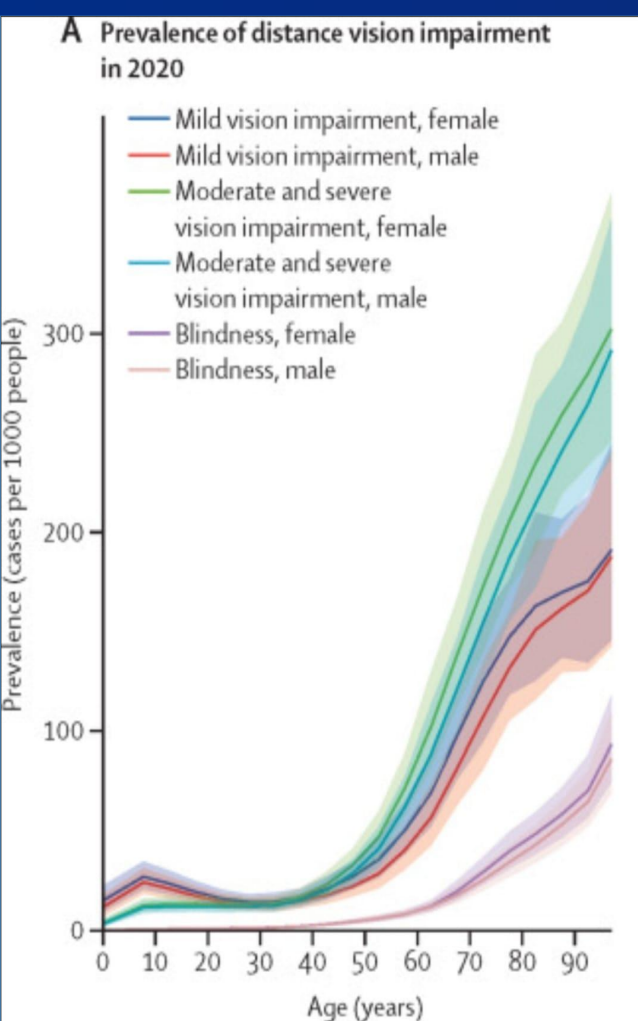
INTRODUCTION: At present, high BMI and visual impairment are becoming serious public health concerns. According to WHO more than a billion people are obese and almost 2.2 billion are visually impaired and according to World Obesity Federation, 5.4 million Pakistani school aged children will be obese in 2030 which creates an alarming situation. Obesity affects quality of life in multiple manners. It is a risk factor for chronic diseases like diabetes mellitus, cardiovascular disease, hypertension, stroke and sleep apnea syndrome. According to some studies that obesity is found to be linked with decreased visual acuity. Further, there are sufficient evidences elaborating that obesity is linked with various eye diseases like diabetic retinopathy, cataract, glaucoma and age-related macular degeneration. Various underlying processes play a role in inducing pathophysiology that leads to anterior and posterior segment eye disease in people with higher BMI.

OBJECTIVES: The aim of the study is to assess the association between different BMI categories and visual acuity.

Methodology:

- Cross sectional study
- KEMU and its affiliated hospital
- Sample: 186(F:113, M: 73)
- Simple Random Sampling

Variable	Mean	Standard Deviation
Age	24.56	6.31
Weight	62.04	12.31
Height in meter	1.64	.09
BMI	22.97	4.28
VA in right eye (fractions were converted to decimals)	.53	.40
VA in left eye	.55	.40



RESULTS: Bivariate evaluation by using Spearman correlation shows no significant relationship between BMI and visual acuity. A strong association of visual acuity is found with height as shown in table. Fisher Exact Test shows a significant association between gender and left eye visual acuity.

TABLE 2 VA values in both right and left eye in all categories of BMI

BMI	Overall	Right eye		Left Eye	
		N	Low VA	N	Low VA
Underweight	32(17.2%)	10(13.3%)	22(19.8%)	11(13.9%)	21(19.6%)
Normal	95(51.1%)	44(58.7%)	51(45.9%)	47(59.5%)	48(44.9%)
Overweight	48(25.8%)	19(25.3%)	29(26.1%)	16(20.3%)	32(29.9%)
Obese	11(5.9%)	2(2.7%)	9(8.1%)	5(6.3%)	6(5.6%)

RESULT OF ANOVA TO COMPARISON OF HEIGHT, WEIGHT AND BMI BETWEEN GROUPS OF RIGHT AND LEFT EYE

variable	Right Eye			Left Eye		
	Sum of squares	df	F	Sum of squares	df	F
height	3410.09	1	6.13	3110.65	1	5.58
weight	0.97	1	0.06	82.54	1	543
BMI	2.14	1	0.037	1.25	1	0.02

Limitations: The limitation of the study was the population size, which can be increased by including other universities or colleges of other programs so the results can be more generalized and the other limitation is that the majority of the data collected in this study was by the adults in their 20s, so other study can be done further for the other ages. And other anthropometric measures like head circumference, muscle mass, and body fat could also be used to further assess their association with visual acuity.

Conclusion: Association between BMI and visual acuity were not formed in this study, significant association was found with the height and visual acuity and the association of left eye visual acuity and gender were also found.