

The Clinical Distribution of Refractive Errors and Their Correlation with Iris Color Among Students at Erbil Medical Institute

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Introduction:

Refractive errors play a major role in visual impairment in young people, including myopia, farsightedness, and astigmatism, which can be easily corrected if accurately diagnosed. On the other hand, the color of the iris of the eye is one of the apparent characteristics and genetic traits that differ between individuals as a result of the different concentration and arrangement of melanin pigment in the iris.

Objective:

This study aims to evaluate the clinical distribution of refractive errors, myopia, farsightedness and astigmatism and to study the possible relationship between them and iris color among Erbil Medical Institute students.

Method:

A cross-sectional study was conducted on a sample of 214 students from the Erbil Medical Institute. All participants underwent a visual examination using an autorefractometer to objectively determine the refractive error, in addition to using the Snellen chart to assess visual acuity in the optical laboratory at the Medical Institute. The color of the iris was classified into 4 main categories: dark brown, light brown, green and blue. Kay Square has been used to analyze the relationship between iris color and refractive error type.

Results:

Myopia was the most common among the participants 112 cases (52.34%), followed by farsightedness 60 cases (28.04%) and astigmatism 42 cases (19.63%). When distributing cases by iris color, the highest percentage of myopia was recorded among those with light brown eyes 43 cases (60%), followed by dark brown 42 cases (50%), green 16 cases (50%) and blue 11 cases (40%).

As for farsightedness, the highest percentage was concentrated in green eyes 13 cases (40%), while astigmatism cases were distributed convergently between groups, and the highest percentage was recorded in blue eyes 8 cases (30%). The results of the chi-square test showed a value of 8.54 with 6 degrees of freedom with a p-value = 0.20, which indicates that there is no statistically significant relationship between the color of the iris and the type of refractive error.

Conclusion:

The results of this study indicate that there is no statistically significant relationship between iris color and types of refractive errors among Erbil Medical Institute students. Although there was a relative variation in the prevalence of errors between the colors of the iris, this variation did not reach the level of statistical significance.

Keywords: Refractive errors, Myopia, Hyperopia, Astigmatism ,Iris color, Melanin concentration