**Understanding Risk Factors for Dry Eye Disease: A Statistical Analysis of Lifestyle and Health Factors**

Lifestyle, environmental, and health-related factors influence a common ocular condition known as Dry Eye Disease (DED), which affects quality of life. The research analyzes a dataset of 200 people to identify DED predictors through statistical methods. Factors such as age, gender, sleep duration, sleep quality (rated 1-5), stress level (rated 1-5), screen time, smoking, and blue-light filter use were evaluated using Pearson correlation and logistic analysis. The data showed a 52% prevalence of DED, with significant correlations to screen time (r = 0.32, p < 0.01), stress level (r = 0.28, p < 0.05), and poor sleep quality (r = -0.25, p < 0.05). Prolonged screen time (OR = 1.15, 95% CI: 1.08–1.23, p < 0.01), smoking (OR = 2.1, 95% CI: 1.3–3.4, p < 0.01), and poor sleep quality (OR = 1.9, 95% CI: 1.2–3.0, p < 0.01) were significant predictors in logistic regression analysis. Higher risk was observed in females (OR = 1.7, p = 0.03) and older individuals (OR = 1.03, p = 0.04). The model's overall AUC was 0.78, indicating good predictive ability. These results support the role of modifiable factors such as screen time and smoking in DED development, suggesting that interventions like reducing screen time and smoking cessation could lower risk. Future prospective studies involving longitudinal data and objective ocular measures are recommended.

**Keywords**: *Dry eye disease, Logistic regression, Risk factors, Statistical modeling, Ocular health*