

Exploring the future direction of cancer incidents in Sri Lanka

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Cancer is a non-infectious disease that develops in any part of the human body, as a result of developing abnormal cells that can be spread to other parts of the body as well. In the past two decades, the number of cancer incidents had increased precipitously with the increment of the population in Sri Lanka. This study analyzes the historical trajectory of cancer incidents in Sri Lanka from 2000 to 2020, focusing on trends, variations, and predictive patterns. This aims to put insight into its past by emphasizing the changes and significant shifts in cancer prevalence in the considered period of years. The Cancer Incidents' data was obtained through the "Cancer Incidence and Mortality Books" published by the National Cancer Control Program in Sri Lanka. Graphical representations such as pie charts, line plots, bar charts, and box plots were used to analyze provincial and district-wise cancer data of the above-mentioned period. The One-Way ANOVA was used to test the hypothesis between the mean distributions of prevalent cancer types in Sri Lanka, such as Breast, Thyroid and Lip, tongue & mouth etc. Tukey's HSD test was executed to identify disparities between the provincial cancer incidents and could conclude that the distribution of cancer incidents among most of the provinces was different from the others. Exponential regression methodology was applied to investigate the growth dynamics of cancer incidents in Sri Lanka. As the primary objective, identified the most appropriate predictive pattern was Exponential Regression with the minimum Mean Absolute Percentage Error value of 6.33%.

Keywords: Cancer, Sri Lanka, ANOVA, Exponential Regression, Holt-Winters.

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