

## **ABSTRACT**

This case control study is conducted to identify the risk factor of thyroid cancer in Lahore. For this purpose two public hospitals having cancer wards were selected. 320 subjects were taken from these comprising 160(50%) cases and 160(50%) controls and among them 88(27.5%) were male and 232(72.5%) were female. In order to describe the risk factors, descriptive and analytical approaches were used. Required information for the study was obtained from the 320 subjects through the direct interview method by using a questionnaire. The age ranged of all cases and controls were 16 to 76 years with the mean age,  $39.06 \pm 14.89$  years. In this study, about 27 factors were included with sub categories. The Phi/v Statistics, Kendall's Tau-b and Chi-Square are used to study the association between the factors of thyroid cancer. In order to investigate the significant risk factors, their severity and the model prediction, binary logistic regression model is run by using SPSS (Version-16). The higher risk of thyroid cancer is found in the subjects having oxidative stress to those without oxidative stress disease. In bivariate analysis, the similar results are also found. Binary logistic regression analysis revealed that nine factors including family history of cancer, use of iodine diet, acromegaly, oxidative stress, red meat, fast food, fried food, use of fats and sea food are positively significant towards thyroid cancer. In other words, these nine factors are directly related to thyroid cancer. The odds ratio and 95% confidence intervals of odd ratios for family history of cancer, use of iodine diet, acromegaly, oxidative stress, red meat, fast food, fried food, use of fats and sea food are (2.222; 1.281-3.853), (2.619; 1.492-4.596), (1.947; 1.123-3.374), (6.229; 3.473-11.172), (2.601, 1.421-4.762), (3.177, 1.745-5.785), (2.357; 1.268-4.382), (2.531; 1.265-5.064) and (2.050; 1.127-3.729), respectively. In this study, the gender wise analysis is also conducted. In binary logistic regression analysis for males the three factors including oxidative stress, fast food and vegetables are positively significant which means that these factors are directly related to thyroid cancer. The odd ratios and 95% confidence interval of these three factors are (10.081; 2.681-37.902), (6.011; 1.564-23.101) and (8.896; 0.830-95.340), respectively. One factor age is negative significant, which means that this factor is inversely related to the disease. Similarly, binary logistic regression analysis for female revealed that six factors including

marital status, family history of cancer, use of iodine diet, Oxidative stress, fast food and fried food are directly related to thyroid cancer which means that these factors are positively significant. The odd ratios and 95% confidence interval of these six factors are (2.152; 1.104-4.198), (2.630; 1.416-4.887), (2.391; 1.282- 4,458), (4.115; 2.185-7.750), (3.656; 1.851-7.223) and (2.360; 1.199-4.643), respectively. The study concludes that oxidative stress, fast food and use of iodine diet were found to be the strongest risk factors to develop thyroid cancer.

**Key Terms:** - Thyroid Cancer, Risk Factors, Cases, Subjects, Odds Ratio, Confidence Interval.