THE ASSOCIATION OF SERUM COTININE AS A MEASURE OF SECONDHAND SMOKING WITH HEALTH-RELATED QUALITY OF LIFE AMONG U.S. NONSMOKING ADULTS: THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY

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Abstract: The level of cotinine in the blood is proportionate to the amount of exposure to tobacco smoke, so it is a valuable indicator of tobacco smoke exposure, including secondhand smoke. Although it is well-documented that smoking reduces health-related quality of life, the association of secondhand smoke with health-related quality of life (HRQoL) has only been known to a limited extent. This study aimed to determine both the association between secondhand smoking measured by serum cotinine and HRQoL of nonsmoking adults and their differential association by subgroups of gender and age, respectively. HRQoL was assessed with the Centers for Disease Control and Prevention HRQOL-4 tool. SHS was measured by cotinine level in blood among nonsmokers. The multivariate regression model, adjusting for confounders, was conducted using SAS SURVEYREG procedure to incorporate the stratification, clustering and sample weights. The Generalized Additive Model was used to graphically examine the association. The analyses utilized a valid sample of 2222 nonsmokers aged ≥20 years from the National Health and Nutrition Examination Survey 2005-2006 and 2007-2008. After adjustments, higher HS was associated with lower general health (p=0.0285) and higher mentally unhealthy days (p=0.0370). However, this pattern differed by gender and age. While HS was associated with the inactive days due to physical and/or mental health (p=0.0106) for female nonsmokers, it was associated with general health (p=0.0174) and mentally unhealthy days (p=0.0146) for males. Among older adults (≥ 60 years) HS had no relationship to HRQoL but it did to general health (p=0.038) and inactive days due to physical and/or mental health (p=0.0100) for younger adults (20≤ and ≤60 years). Exposure to secondhand smoke at home is associated with reduced HRQOL of nonsmokers, but apparently more strongly with mental health than physical health. Its association with HRQOL however differs according to the subgroups of gender and age.