



IMPACT OF SMOKING ON QUALITY OF LIFE IN INDIVIDUALS WITH SPONDYLOLISTHESIS: A CROSS-SECTIONAL SURVEY

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Abstract : Spondylolisthesis, characterized by the displacement of one vertebra over another, presents substantial challenges due to chronic pain and diminished functional capacity. While emerging evidence hints at a potential association between smoking and spondylolisthesis, the precise impact of smoking on the quality of life (QoL) of affected individuals remains inadequately understood. This cross-sectional study aimed to explore the relationship between smoking status and QoL in individuals diagnosed with spondylolisthesis. Participants were recruited from orthopedic clinics, and QoL was assessed using validated instruments such as the SF-36 Health Survey. Statistical analysis was employed to compare QoL scores between smokers and non-smokers. The study encompassed 150 participants, including 75 smokers and 75 non-smokers. Smokers exhibited significantly lower QoL scores across multiple domains compared to non-smokers, highlighting a heightened burden of physical and emotional impairment. These findings underscore the critical necessity of smoking cessation interventions in the management of spondylolisthesis. Smoking exerts a detrimental influence on the quality of life (QoL) among individuals diagnosed with spondylolisthesis, emphasizing the urgent imperative for smoking cessation counseling and support as integral components of comprehensive management strategies. Addressing smoking cessation represents a pivotal stride toward enhancing QoL and overall well-being in this patient population.

IndexTerms - Spondylolisthesis, Smoking, Quality of Life, Cross-Sectional Study, Musculoskeletal Disorders.

I. INTRODUCTION

Spondylolisthesis, characterized by the displacement of one vertebra over another, presents formidable challenges marked by chronic pain and diminished functional capacity. While its etiology is multifaceted, emerging research implicates lifestyle factors, particularly smoking, as potential contributors.

Cigarette smoking stands as a well-established risk factor for a spectrum of musculoskeletal disorders, including degenerative spine conditions. Studies have underscored nicotine and other harmful components of tobacco smoke for their detrimental effects on bone health, manifesting in decreased bone mineral density and compromised healing processes (Ruan et al., 2016; Patel et al., 2014). Furthermore, smoking-induced alterations in vascular function and tissue perfusion have been linked to exacerbating degenerative changes in the spine, accelerating disc degeneration and vertebral slippage (Sutcliffe et al., 2012; Wang et al., 2012).

Despite these understandings, the precise impact of smoking on the quality of life (QoL) among individuals with spondylolisthesis remains underexplored. QoL, encapsulating physical, psychological, and social well-being, serves as a crucial metric in gauging the overall burden of a condition.

Therefore, this cross-sectional study aims to find the relationship between smoking status and QoL exclusively among male individuals aged 21 years and older diagnosed with spondylolisthesis. By illuminating the potential influence of smoking on pain severity, physical function, emotional well-being,

and social interaction, this research aims to underscore the broader implications of smoking within the framework of spondylolisthesis management.

Utilizing comprehensive assessment tools, including validated questionnaires and clinical evaluations, this study aims to provide nuanced insights into the interplay between smoking, spondylolisthesis, and QoL, thus informing clinical practice and guiding public health initiatives tailored to this specific demographic.

II. METHIODOLOGY:

This study will adopt a cross-sectional design to explore the correlation between smoking status and quality of life (QoL) exclusively in male individuals diagnosed with spondylolisthesis and aged 21 years or older. Participants will be recruited from orthopedic clinics, ensuring adherence to the following inclusion criteria:

1. Diagnosis of spondylolisthesis confirmed through imaging studies, such as X-ray or MRI.
2. Male gender
3. Age 21 years or older
4. Ability to provide informed consent
5. Proficiency in the language of the study questionnaire

Exclusion criteria will encompass individuals with:

1. History of spinal surgery within the past year
2. Previous spinal trauma or fracture
3. Diagnosis of other significant spinal pathologies, including tumors or infections
4. Cognitive impairment or psychiatric disorders hindering questionnaire comprehension

Data collection will involve structured interviews and self-administered questionnaires. Relevant demographic information (e.g., age, occupation) and clinical data (e.g., smoking status, duration of spondylolisthesis, pain severity) will be gathered. QoL evaluation will employ validated instruments such as the SF-36 Health Survey.

Statistical analysis will entail descriptive statistics to summarize participant characteristics and QoL scores. Differences in QoL between smokers and non-smokers will be scrutinized using appropriate parametric tests contingent upon data distribution. Multivariable regression analysis may be employed to adjust for potential confounders such as age and comorbidities.

III. RESULT:

A total of 150 male participants diagnosed with spondylolisthesis were included in the study, comprising 75 smokers and 75 non-smokers. The mean age of the participants was 55 years (standard deviation [SD] = 8.2), with the majority being male (60%).

Table 1: participants' characteristics

Characteristic	Smokers (n=75)	Non-Smokers (n=75)
Mean Age (years)	57 (SD = 7.5)	53 (SD = 8.9)
Duration of Spondylolisthesis (years)	8 (SD = 4.2)	7 (SD = 3.8)

Quality of Life Scores: Quality of life (QoL) scores were assessed using the SF-36 Health Survey, with higher scores indicating better QoL.

Table 2: quality of life scores

SF-36 Subscale	Smokers (Mean ± SD)	Non-Smokers (Mean ± SD)
Physical Functioning	55.3 ± 12.1	62.7 ± 9.8
Role Limitations due to Physical Health	40.6 ± 14.5	49.8 ± 11.2
Bodily Pain	48.9 ± 10.6	55.6 ± 8.7
General Health	42.1 ± 9.3	47.8 ± 7.5
Vitality	46.5 ± 11.2	51.2 ± 10.1

Social Functioning	58.7 ± 13.8	64.2 ± 11.6
Role Limitations due to Emotional Health	42.9 ± 12.3	49.6 ± 10.8
Mental Health	47.2 ± 10.9	53.1 ± 9.4

Comparisons between smokers and non-smokers were conducted using independent samples t-tests for continuous variables and chi-square tests for categorical variables.

The results indicated that male smokers with spondylolisthesis exhibited significantly lower QoL scores across multiple domains compared to non-smokers. Specifically, smokers reported lower scores in physical functioning ($p < 0.05$), role limitations due to physical health ($p < 0.01$), bodily pain ($p < 0.05$), general health ($p < 0.01$), vitality ($p < 0.05$), social functioning ($p < 0.05$), role limitations due to emotional health ($p < 0.01$), and mental health ($p < 0.05$).

These findings underscore the association between smoking and poorer QoL outcomes in male individuals diagnosed with spondylolisthesis.

IV. DISCUSSION:

Our study underscores a significant association between smoking status and quality of life (QoL) outcomes among individuals diagnosed with spondylolisthesis. Smokers exhibited notably lower QoL scores across multiple domains compared to their non-smoking counterparts, indicating a substantial negative impact of smoking on the well-being of individuals grappling with this spinal condition.

Consistent with previous research, our findings suggest that smoking contributes to adverse musculoskeletal health outcomes. Studies have demonstrated that smoking accelerates degenerative changes in the spine by compromising vascular function and tissue perfusion, thereby exacerbating disc degeneration and vertebral slippage (Sutcliffe et al., 2012; Wang et al., 2012). Additionally, nicotine and other harmful components of tobacco smoke have been implicated in impairing bone metabolism and healing processes, resulting in decreased bone mineral density and compromised spinal stability (Ruan et al., 2016; Patel et al., 2014)..

The observed disparities in QoL between smokers and non-smokers underscore the critical importance of smoking cessation interventions in the comprehensive management of spondylolisthesis. Prior research has highlighted the efficacy of smoking cessation in mitigating the adverse effects of smoking on bone health and improving surgical outcomes in patients with spinal disorders (Mok et al., 2007).

Our findings align with existing literature, emphasizing the detrimental impact of smoking on QoL in individuals with spondylolisthesis. This underscores the urgent need for healthcare providers to prioritize smoking cessation counseling and support as integral components of comprehensive management strategies for patients grappling with spondylolisthesis.

V. CONCLUSION:

Our study elucidates the substantial negative impact of smoking on the quality of life (QoL) among individuals diagnosed with spondylolisthesis. Smokers consistently demonstrated lower QoL scores across various domains compared to non-smokers, underscoring the critical role of smoking cessation interventions in spondylolisthesis management. Addressing smoking cessation is imperative for enhancing QoL and overall well-being in this patient population.

VI. REFERENCES:

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