



The Relationship between Lifestyle, Socioeconomic Status and Quality of Life in Patients with Lumbar Spine Decompression Surgery

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Dear Editor-in-Chief

Lumbar degenerative spine disease is the single most common cause for disability in individuals aged 45 yr and more. It involves conditions such as disc degeneration, spondylolisthesis, and lumbar spinal stenosis (1). Low back pain at rest or changing position, leg pain, a feeling of sudden weakness reduces quality of life (QOL) of patients. Surgical treatment is an option in cases of severe, debilitating lumbar degenerative disc disease, and usually is recommended only after at least 6 months of nonsurgical treatment (2-3). Sometimes the surgical treatment does not eliminate a patient's pain and symptoms completely. It seems that the socioeconomic status (SES) and lifestyle effect on the quality of life after neurosurgery. For example, smoking, educational level and employment status were found to be significant factors (4). Daily activities and appropriate diet (low calorie, low fat and low sugar) can improve QOL of patients (5).

We aimed to investigate the association between SES, life style and QOL in patients with decompression surgery at the Loghman Hakim Hospital, Tehran, Iran in 2018.

This study was approved by the ethical committee of Shahid Beheshti University of Medical Sciences, Tehran, Iran (IR.SBMU.REC.1398.017)

EuroQol-5D-3L (EQ-5D) questionnaire as an instrument for measuring health-related quality of life was filled before and 12 months after surgery. The EQ-5D-3L essentially consists of 2 pages, the EQ-5D descriptive system and the EQ visual analog scale (EQ-VAS). The EQ-5D-3L descriptive system comprises the following 5 dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. The EQ VAS records the respondent's self-rated health on a vertical, visual analog scale where the endpoints are labeled 'Best imaginable health' (100 scores) and 'worst imaginable health state' (0 scores).

Overall, from 150 participants at the beginning of study, 140 patients presented to follow up after one yr of lumbar spine decompression surgery. The mean \pm SD of age was 64.89 ± 7.58 with range 36(46-82) yr, 63.6% patients were female. For comparison of EQ-5D-3L / VAS score in 2 times, before and 12 months after surgery, based on SES and life style, univariate generate linear model was



applied. Analyzes were performed using the SPSS (Chicago, IL, USA) version 19 software. The statistical significance level *P* value <0.05 was considered. Totally, quality of life score improved after one yr of lumbar disc decompression surgery regardless other covariates (11.27 ± 1.5 Vs 8.40 ± 1.95). Comparison EQ5D-3L score before and 1 yr after surgery according other co-factors indicated in the table below.

According to the improving QOL one yr after lumbar spine decompression surgery in age group

45-61 yr (*P*=0.02), normal BMI (Body Mass Index) (*P*=0.01), house having (*P*=0.01), monthly income higher than 20 million IRR (Iranian currency. One USD equal to 120000 Rials (IRR) in the study time), diet with low (fat, calorie, sugar) (*P*<0.001), normal regularity activity (*P*=0.02) (Table 1), therefore, useful and consistent trainings for healthy lifestyle in patients by health care providers as well as promotion of free medical service through government systems should be considered.

Table 1: Comparison between mean EQ-5D-3L / VAS score in three times, before and 12 months after surgery based on socioeconomic and life style variables

<i>Variable</i>	<i>Eq5D Before surgery</i>	<i>Eq5D 12 months after surgery</i>	<i>P.value</i>	<i>VAS Before surgery</i>	<i>VAS 12 months after surgery</i>	<i>P. value</i>
Gender			0.09			0.1
Male	8.29±2.11	11.37±1.68		20.09±7.35	65.40±8.73	
Female	8.51±1.85	11.22±1.40		18.61±8.73	64.68±7.68	
Age groups			0.02 *			0.03 *
45-60	8.31±1.91	11.91±1.51		15.09±7.35	65.89±8.77	
61-85	8.49±1.97	10.97±1.41		16.61±8.73	60.55±6.68	
BMI			0.04 *			0.04 *
18.5-24.9(Normal)	8.51±1.38	11.90±1.32		20.11±4.45	65.05±10.7	
25-29.9(Overweight)	7.7±1.97	11.10±1.55		18.63±10.02	62.08(9.62)	
≥ 30(Obese)	8.98±2.02	11.10±1.49		21.08±9.28	57.87(9.07)	
Educational level			0.6			0.5
Illiterate	6.28±0.75	9.96±1.82		15.13±3.54	60.78±15.81	
Elementary/Middle/High school	7.78±2.10	11.35±0.27		17.43±5.21	64.86±20.86	
Diploma	7.76±1.79	11.14±0.24		18.54±8.05	67.85±11.49	
University education	9.52±1.45	11.50±0.24		19.87±7.58	80.50±14.40	
Marital Status			0.7			0.6
Single/Widow/Divorced	7.14±1.64	11±1.58		18.50±5.43	70.60±11.61	
Married	8.75±1.89	11.34±1.48		19.04±4.86	73.78±10.70	
Place of residence			0.6			0.8
Capital city	8.14±1.54	11.49±2.34		19.50±5.54	74.63±10.48	
Other city/rural region	8.76±1.50	11.35±1.76		20.67±5.86	73.78±10.65	
House having			0.01 *			0.01 *
Yes	8.04±1.75	11.63±1.64		20.16±5.24	80.76±10.43	
No	6.81±2.07	10.91±1.28		17.67±3.34	70.54±10.23	
Job			0.9			0.8
Housekeeping	8.44±1.74	11.34±1.44		17.76±4.54	69.76±14.53	
Worker and employee	8.26±1.92	11.16±1.53		18.65±5.44	70.65±14.44	
Self-employed	8.40±2.39	11.45±1.60		19.43±4.45	72.43±13.95	

Retired	8.55±1.99	11.27±1.50		19.43±4.34	70.52±15.24	
Monthly income			0.02 *			0.01 *
Below 20 million IRR	8.15±1.99	10.76±1.34		20.56±5.59	75.43±12.34	
20 million IRR and more	8.64±1.90	12.65±1.78		22.65±5.86	80.45±13.34	
Smoking			0.3			0.2
Yes	8.21±1.76	10.41±1.76		20.34±4.41	76.34±12.43	
No	8.32±1.43	10.23±1.45		21.55±4.24	77.43±11.34	
Alcohol Consumer			0.2			0.3
Yes	7.21±1.50	10.22±1.45		20.14±3.56	75.23±11.56	
No	7.34±1.62	10.34±1.45		21.01±3.87	75.43±11.62	
Drug abuse			0.4			0.5
Yes	7.34±1.76	10.43±1.87		16.54±4.43	67.45±4.45	
No	7.87±1.87	10.56±1.65		16.87±4.54	68.57±4.35	
Health Insurance			0.4			0.5
Yes	8.23±1.34	10.34±1.56		18.88±4.44	75.65±10.65	
No	8.13±1.40	10.26±1.45		18.43±4.45	75.62±10.55	
Diet			<0.001 *			0.001 *
Low fat, calorie, sugar	8.56±1.33	12.87±1.34		21.23±4.34	78.45±10.67	
High fat, calorie, sugar	8.13±1.30	10.05±1.40		20.23±4.54	75.34±10.34	
Regularity activity			0.002 *			0.001 *
Yes	8.89±1.39	12.89±1.78		21.23±2.32	81.56±10.04	
No	7.13±1.30	10.87±1.34		19.56±2.34	75.38±10.34	

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Conflict of interest

The authors declare that there is no conflict of interest.

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