



The Effect of Psychological Status on Postoperative satisfaction and Clinical outcomes in Spinal Surgery Patients

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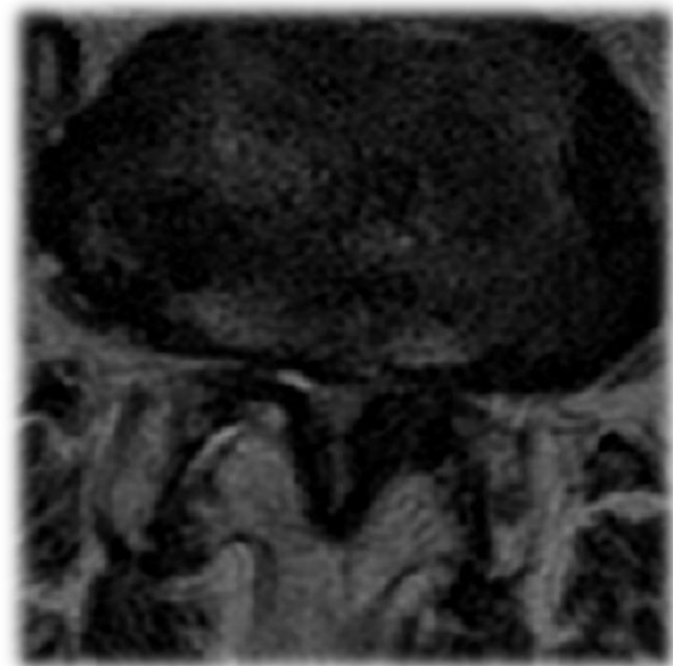
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Introduction



❖ Degenerative spine disease

- Degenerative changes concerning the of the spinal column, intervertebral disc and tissue of the spinal cord
- Spinal stenosis
- Spondylolisthesis
- Intervertebral disc herniation



Introduction



❖ Degenerative spine disease

- Radicular pain, caudication, neurologic deficit
- Impaired functional ability
- Decreased quality of life
- Surgical treatment
 - Progressive neurologic deficit, cauda equina syndrome
 - Refractory pain and functional deficit

Introduction



❖ Patient satisfaction and surgical results after spinal surgery

- Average satisfaction : 60 ~ 80%

Turner JA. et. al., *Spine(Phila Pa 1976)*. 1992.

- Sex, age, BMI, comorbidity, duration of symptoms, complications...

- Psychological factors

: Depression, anxiety, optimism, somatization, coping, social support...

Purpose



❖ To assess ..

- **Psychologic status of patients with degenerative spinal disease**
- **Correlation of preoperative psychologic status with postoperative satisfaction and clinical outcomes**

Materials & Methods



❖ Inclusion criteria

- Jan, 2007. ~ Feb, 2010
- Short level spinal fusion(≤ 2 level) due to degenerative spinal disease
- Symptom duration ≥ 3 months.
- OPD f/u ≥ 24 months.

❖ Exclusion criteria

- Hx. of previous spinal surgery
- Spine deformity(kyphosis, scoliosis)
- Motor weakness
- Spinal tumor or infection

Materials and methods



Demographic information & clinical data in the patients (n=206)

Sex(M:F)	69:137
Age(Years) (SD)	62.4(8.7)
Symptom duration(Mos) (SD)	12.7(4.6)
Preoperative Diagnosis	
Lumbar spinal stenosis	153(74.3%)
Spondylolisthesis	16(7.8%)
Spinal stenosis with spondylolisthesis	37(17.9%)
Fusion level	
1 level	131(63.6%)
2 level	75(36.4%)

Materials & Methods



❖ Clinical assessment

- Preoperative
 - Visual analogue scale(VAS) for pain
 - Oswestry disability index(ODI) for functional activity
- Postoperative(after 24months.)
 - Visual analogue scale(VAS) for pain
 - Oswestry disability index(ODI) for functional activity
 - Satisfaction for surgery

Materials & Methods



❖ Psychological assessment

- Hospital anxiety and depression scale (HADS)

Zigmond AS. et. al., *Acta Psychiatr Scand.* 1993.

- Revised life orientation test(LOT-R)

Glaesmer H. et. al., *Br J Health Psychol.* 2012.

Materials & Methods



❖ Patient expectation and fulfillment

- Questionnaire of North American Spine Society
 - Expectation for surgery
 - : Leg pain, back pain, walking capacity, independence in everyday activities, sporting activities, general physical capacity, social contact, mental well-being
 - Most important reason for surgery
 - Fulfillment for surgery
 - Most important change after surgery

Materials & Methods



❖ Analysis of psychologic factors

■ Correlation

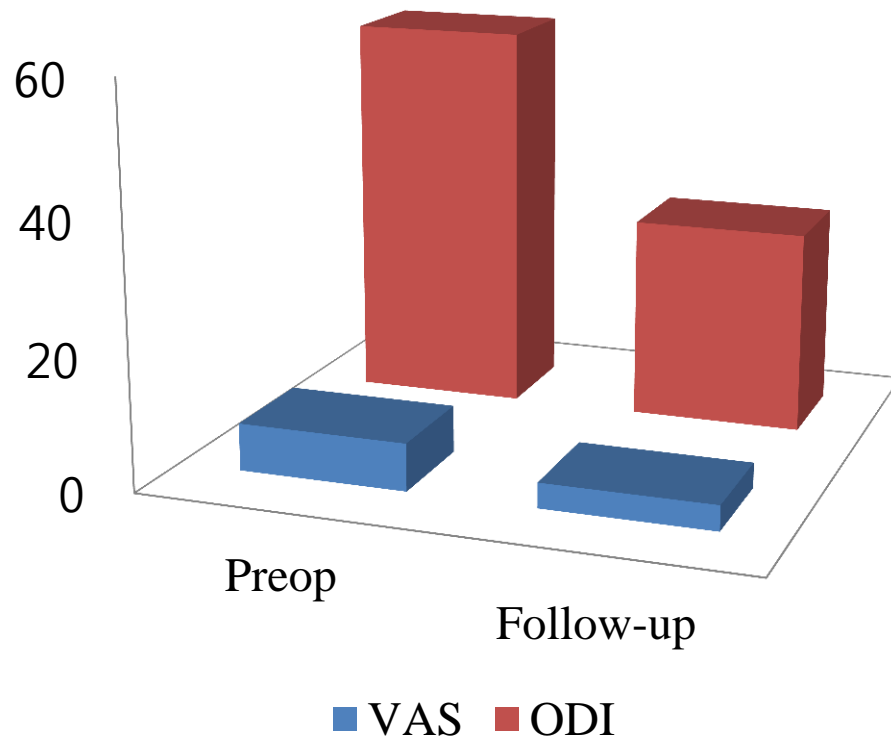
- ✓ Preoperative psychologic factor
- ✓ Surgical outcomes, satisfaction, expectation, fulfillment

■ Comparative analysis

- ✓ Satisfied group *VS* Unsatisfied group

Results

❖ VAS



■ Preop : 7.2

■ Follow-up : 3.8

❖ ODI

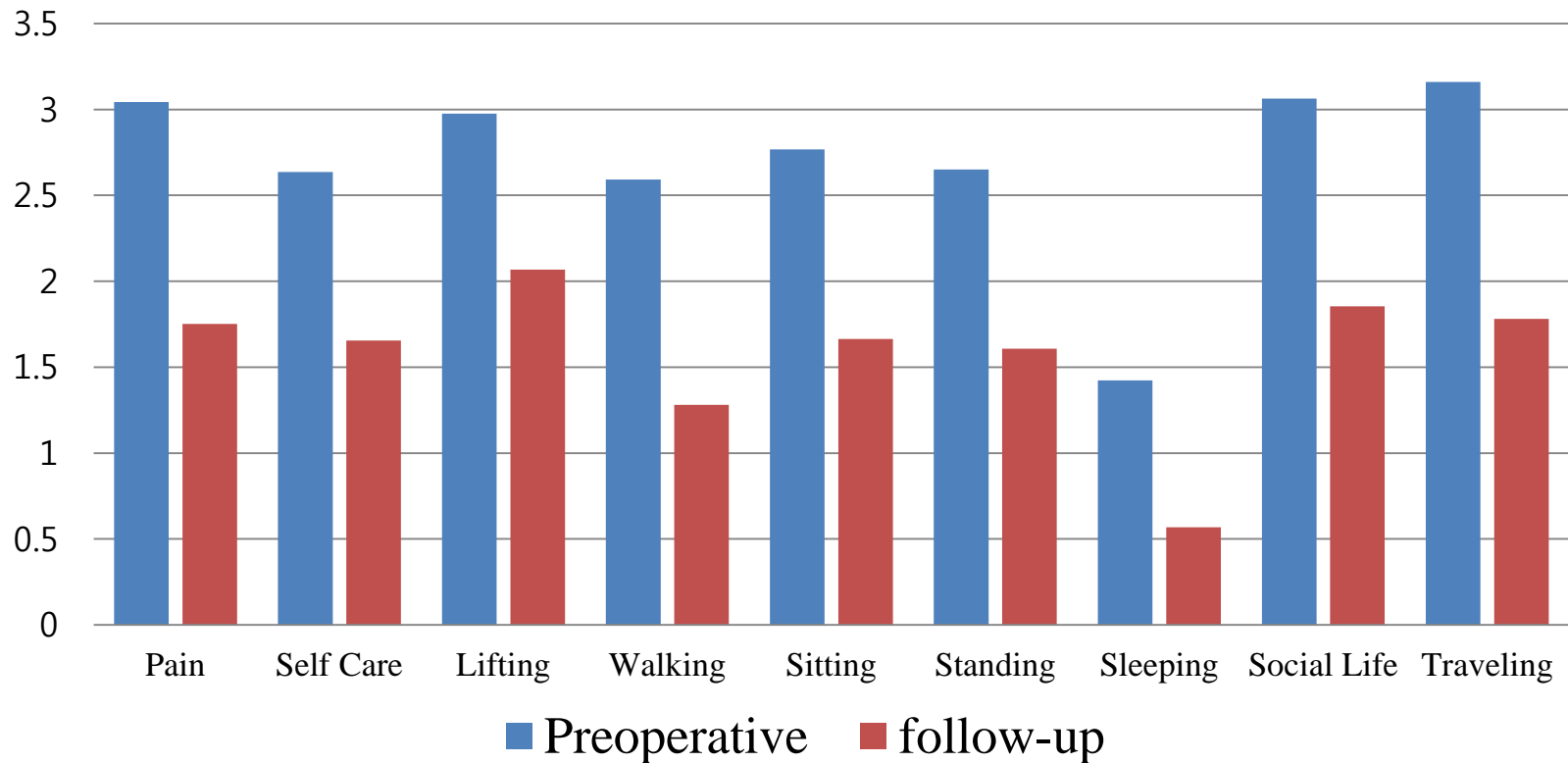
■ Preop. : 58.9

■ Follow-up : 30.8

Results



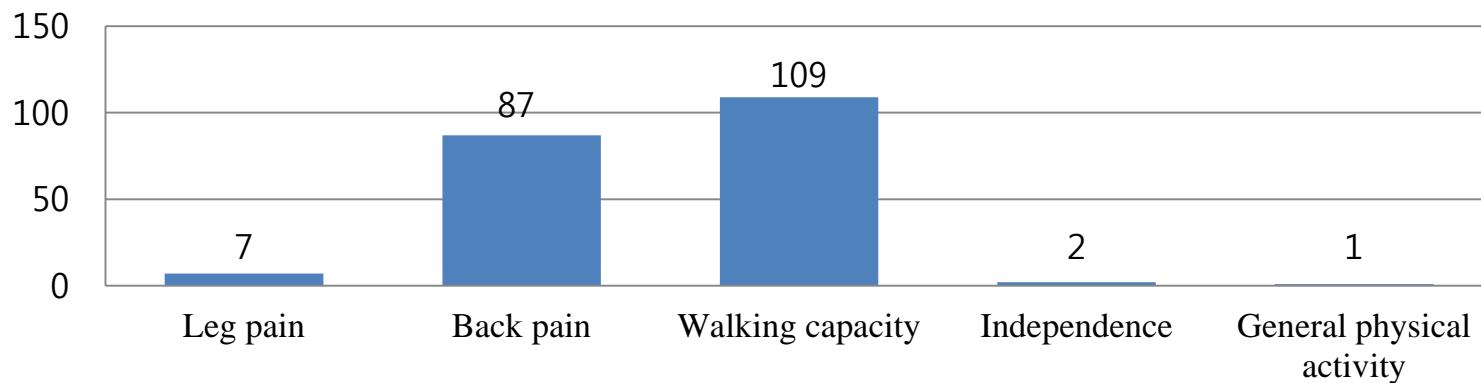
❖ Oswestry disability index



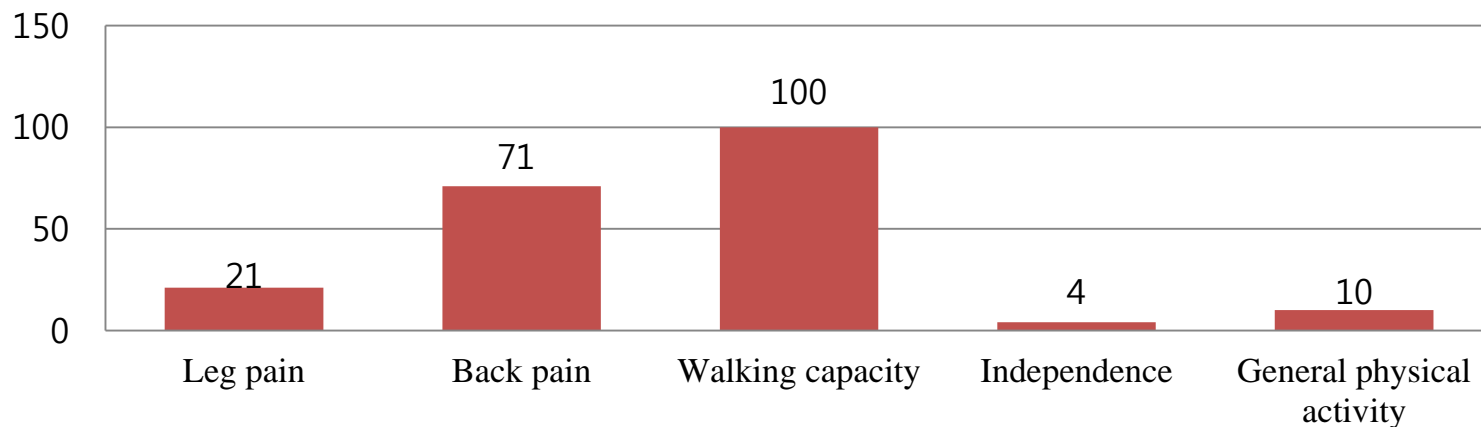
Results

❖ Lumbar spine questionnaire of NASS

Most important reason for surgery



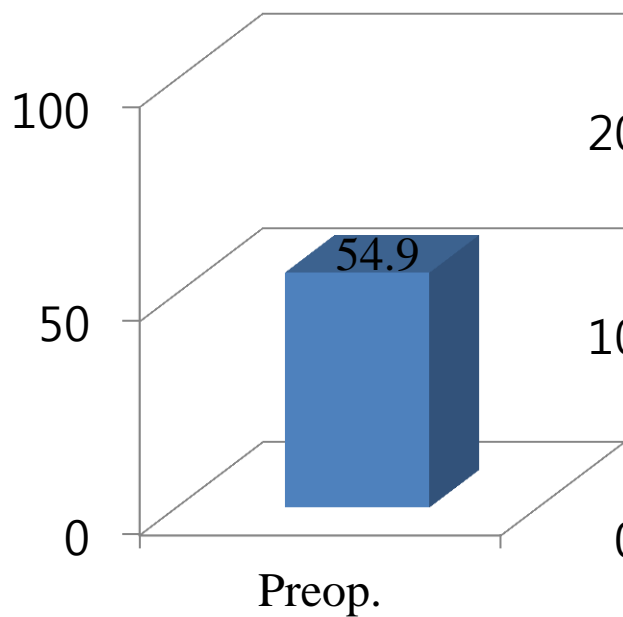
Most important change after surgery



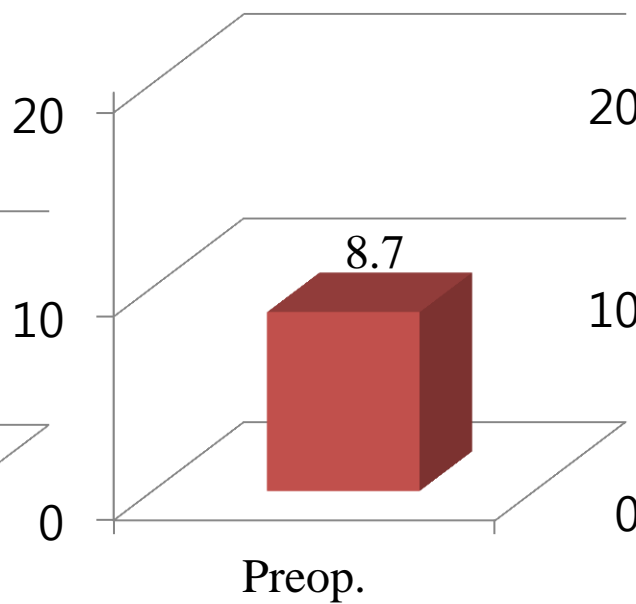
Results

❖ Psychological assessment

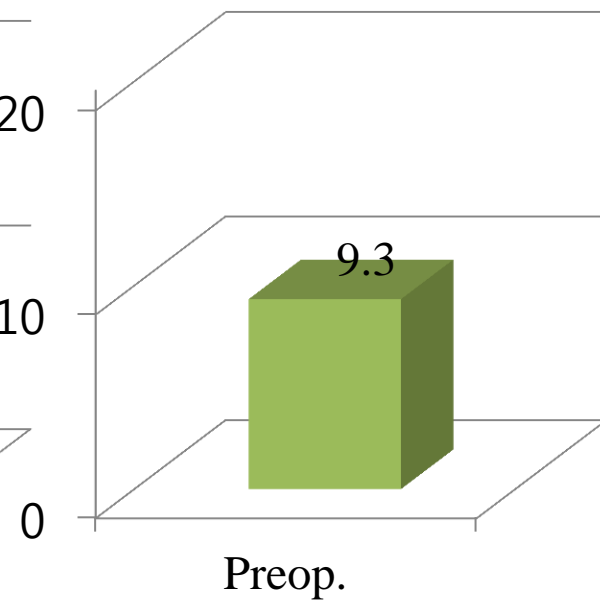
Optimism



Anxiety



Depression



Results

❖ Relationship between preoperative optimism and clinical outcomes

Optimism		
	Coefficient	P-value
ΔVAS	0.12847	0.1067
ΔODI	0.29628	<.0001
Expectation	0.43708	<.0001
Fulfillment	0.56224	<.0001

Δ VAS = Preop. VAS – F/U VAS

Δ ODI = Preop. ODI – F/U ODI

Results

❖ Relationship between preoperative anxiety and clinical outcomes

Anxiety		
	Coefficient	P-value
ΔVAS	-0.05381	0.4424
ΔODI	-0.30042	<.0001
Expectation	-0.22438	0.0012
Fulfillment	-0.11049	0.1139

Results

❖ Relationship between preoperative depression and clinical outcomes

Depression		
	Coefficient	P-value
ΔVAS	-0.11617	0.0963
ΔODI	-0.27645	<.0001
Expectation	-0.26702	0.0001
Fulfillment	-0.24924	0.0003

Results

❖ Patient satisfaction

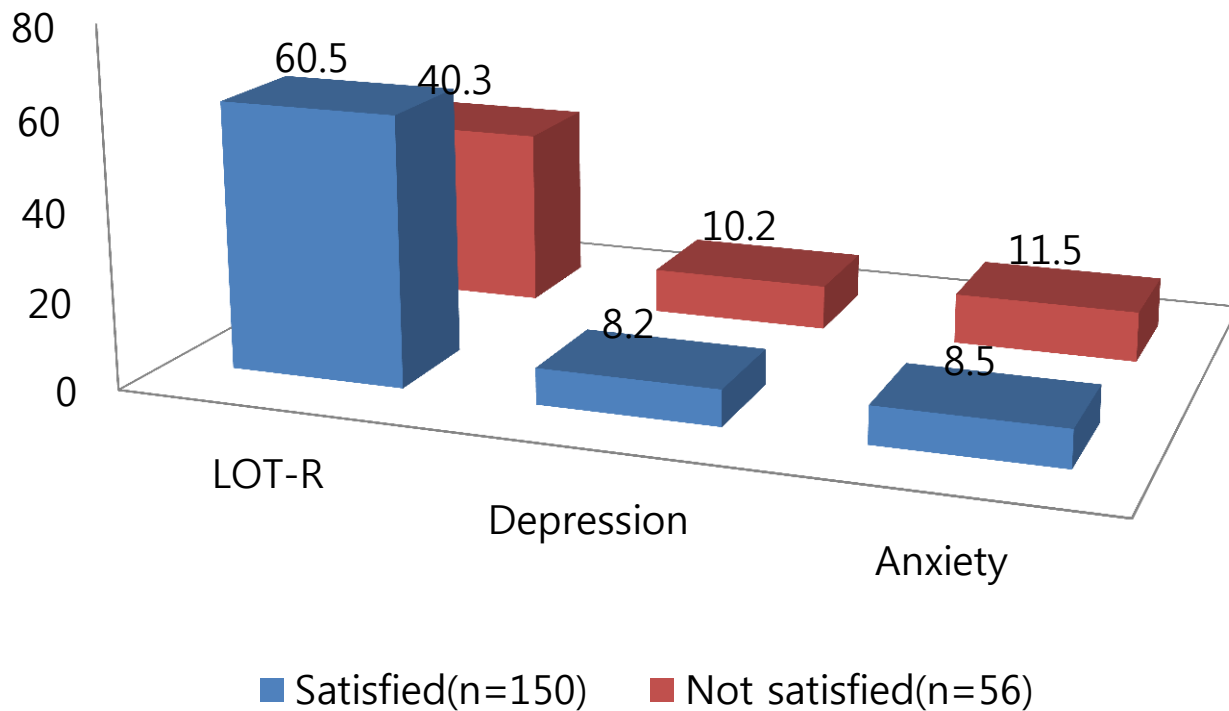
- Extremely satisfied(62 cases)
- Very satisfied(88 cases)
- Slightly satisfied(33 cases)
- Not at all satisfied(22 cases)
- Very dissatisfied(1 case)

Satisfied group
(150 cases, 72.8%)

Not satisfied group
(56 cases, 27.2%)

Results

❖ Patient satisfaction



Discussions



❖ Psychological factors in lumbar spine surgery

- Patient who were classified as somatisizers using the DRAM(Distress and Risk Assessment Method) have less favorable outcome than others.

Pollack R., et. al., *Asian spine J.* 2012.

- There was no difference in ODI and VAS between patients classified through the DRAM.

Okoro T., Sell P., *J Bone Joint Surg Br.* 2009.

Discussions



❖ In this study,

- Evaluate the psychological status of degenerative lumbar disease patients with LOT-R and HADS
- Patient with high optimistic, low depressive and anxious correlate with good surgical outcomes and improvement of functional activities

Discussions



❖ Psychological factors in lumbar spine surgery

- Psychological distress and somatization have a role in the progression to chronicity in low back pain

Pincus T., et. al., *Spine (Phila Pa 1976)*. 2002.

- Patients with elevated levels of depression as measured by the MMPI had poor outcome after spinal surgery

Dvorak J., et. al., *Spine (Phila Pa 1976)*. 1988.



Discussions



❖ In this study,

- Patient satisfaction : 72.8%
- In satisfied group
 - ✓ More optimistic
 - ✓ Less anxious
 - ✓ Less depressive

Conclusions



Preoperative psychological factors

Optimism ↑
Anxiety & Depression ↓



Postoperative satisfaction & clinical outcomes ↑

***So, preoperative psychological assessment
and proper management are needed !!!***

Disclosure



❖ **No conflict of interest**