

# The incidence of Anxiety and Depression in Patients with Spinal Injury at Siriraj Spinal Unit

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**Objective:** To investigate the incidence of anxiety and depression among patients with spinal injury admitted to the Siriraj Spinal Unit, and to compare depression and anxiety scores between admission and discharge. We also evaluated for factors that significantly associate with unimproved anxiety and depression score.

**Methods:** This prospective study included patients with spinal injury that were admitted to the Siriraj Spinal Unit of Siriraj Hospital during December 2013 to August 2017. Presence and level of anxiety and depression were assessed using Thai Hospital Anxiety and Depression Scale (Thai HADS). The following data were collected: age, gender, education level, marital status, occupation, diagnosis, level of impairment, injury severity, cause of injury, and length of stay.

**Results:** Ninety patients were included, with a mean age of  $44.4 \pm 16.7$  years. There were 68.9% males and 31.1% females. The incidence of anxiety and depression on the day of admission was 8.9% and 7.8%, respectively, with decreases to 4.4% and 5.6% before discharge (Table 2). Mean HADS score for anxiety decreased from  $6.1 \pm 3.2$  to  $3.2 \pm 2.9$ , and for depression from  $5.1 \pm 3.4$  to  $3.0 \pm 3.1$ . In multivariate analysis, age and marital status were significantly associated with unimproved depression score ( $P=0.003$  and  $P=0.025$ , respectively). No evaluated factors were significantly associated with unimproved anxiety score.

**Conclusion:** The incidence of anxiety and depression decreased from 8.6% and 7.8% to 4.4% and 5.6%, respectively, compared between admission and discharge. Age and marital status were significantly associated with unimproved depression score, while no factors were able to significantly predict unimproved anxiety score.

**Keywords:** Thailand, anxiety, depression, spinal injury

*The Thai Journal of Orthopaedic Surgery: 42 No.1-2: 10-17*

*Full text. e journal: <http://www.rcost.or.th>, <http://thailand.digitaljournals.org/index.php/JRCOST>*

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## Introduction

Patients with spinal cord injury suffer acute and catastrophic change in physical condition and ability that can lead to anxiety, despair, hopelessness, insecurity, uncertainty, pessimism, low self-esteem, and depression<sup>(1,2)</sup>. These emotional outcomes of spinal injury can also lead to poor cooperation with rehabilitation and occupational therapy during admission. Wattanapan, et al.<sup>(3)</sup> reported a prevalence of depression in spinal injury patients of 5.6% using Thai HADS. Many studies from other countries reported a rate of 13% for anxiety and 16% for depression<sup>(4)</sup>. Carvalho, et al.<sup>(5)</sup> found that 60% of patients had depression after spinal injury when tested with the Symptom-Checklist-90-Revised

(SCL-90-R) questionnaire. The prevalence of anxiety was 10-12% in a study from Royle, et al.<sup>(6)</sup>

The quality of medical care and rehabilitation also affects the level of anxiety and depression in this patient population. Mehaidat, et al.<sup>(7)</sup> conducted a study in paraplegia patients and found 28.2% anxiety and 17.4% depression during acute care, which decreased significantly to 18.1% and 11.5%, respectively, after rehabilitation. Kuptniratsaikul, et al.<sup>(8)</sup> reported a prevalence of anxiety and depression after the injury of 18.2% and 13.6%, respectively, which decreased to 13.6% and 2.3% after receiving medical care, though both changes failed to achieve statistical significance due to the small size of the study population.

The Siriraj Spinal Unit was the first spine-specific center for treating spinal trauma in Southeast Asia, with a multidisciplinary team that provides international standard quality medical and rehabilitation care. However, the incidence of anxiety and depression among spinal injured patients treated at the Siriraj Spinal Unit is not known.

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Accordingly, the aim of this study was to investigate the incidence of anxiety and depression among patients with spinal injury who were admitted to the Siriraj Spinal Unit, and to compare depression and anxiety scores between admission and discharge. We also evaluated for factors that significantly associate with unimproved anxiety and depression score.

## Methods

### Participants

This prospective study included patients with spinal injury that were admitted to the Siriraj Spinal Unit of Siriraj Hospital during the 19 December 2013 to 28 August 2017 study period. Siriraj Hospital is Thailand's largest national tertiary referral center. Patients that satisfied all of the following criteria were included: (1) age more than 18 years during admission; (2) having good consciousness; and, (3) having good ability and willingness to answer the HADS questionnaire. Patients meeting one or more of the following were excluded: (1) history of diagnosed psychological diseases, such as schizophrenia, depressive disorder, and/or anxiety before being admitted to the Siriraj Spinal Unit; and, (2) history of underlying disease(s) that adversely affect the thinking process or the emotions, such as Alzheimer's disease, Parkinson's disease, cerebrovascular disease, head injury, HIV infection, epilepsy, and/or substance use (e.g., alcoholism, illegal or prescription drug abuse, inhalants).

### Assessment instrument

Presence and level of anxiety and depression were assessed using the Thai Hospital Anxiety and Depression Scale (Thai HADS). Thai HADS is a widely used and reliable tool for screening for clinical anxiety and depression. There are seven items for each of the two parameters, and each item is scored using a 4 point Likert scale (0-3), with a 0 indicating the lowest level of agreement and a 3 indicating the highest level of agreement. The highest achievable number of points is 21 for both anxiety and depression. Persons scoring 0 to 7 are regarded as non-cases, 8-10 are regarded as possible cases, and 11-21 are considered probable cases. In this study, patients scoring more than 7 on either scale were considered as having anxiety and/or depression.

#### Procedure

After receiving study approval from the Siriraj Institutional Review Board (SIRB), Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand (COA no. 637/2556, EC4), written informed consent was obtained from all enrolled study participants. The following data were collected from patient medical records: age, gender, education level, marital status, occupation,

diagnosis, level of impairment, severity of injury, cause of injury, and length of stay. Patient level of anxiety and depression was assessed using Thai HADS at both admission and at discharge.

#### Statistical analysis

Sample size calculated by using the prevalence of anxiety and depression after the injury from Kuptniratsaikul, et al.'s<sup>(8)</sup> study which was 18.2% with the allowable error of 0.08%, two-sided level of significance (alpha error) was set of 5%. The estimated sample size was at least 90 patients. All data analyses were performed using SPSS Statistics version 18 (SPSS, Inc., Chicago, IL, USA). Demographic data were interpreted using descriptive statistics. Data are reported as number and percentage or mean  $\pm$  standard deviation. HADS scores between admission and discharge were compared using paired t-test. Chi-square test and Fisher's exact test were used for multivariate risk factor analysis. A p-value less than 0.05 was regarded as being statistically significant.

## Results

Ninety patients were included in this study. The mean age of patients was 44.4 $\pm$ 16.7 years (range: 18-76), with a gender distribution of 68.9% males and 31.1% females. Just over half of patients (52.2%) were married. Most patients had at least a secondary school education (31.1%) and worked as an employee (35.6%). The most common cause of injury was falls (50%). The proportion of paraplegia and tetraplegia was equal (34.4%), and most of those patients sustained incomplete spinal cord injury (46.7%). The mean length of stay was 34.3 $\pm$ 25.2 days (range: 10-146) (Table 1).

The incidence of anxiety and depression on the day of admission was 8.9% and 7.8%, respectively, with decreases to 4.4% and 5.6% before discharge (Table 2). Mean HADS score for anxiety decreased from 6.1 $\pm$ 3.2 to 3.2 $\pm$ 2.9, and for depression from 5.1 $\pm$ 3.4 to 3.0 $\pm$ 3.1.

Nineteen patients (21.1%) had unimproved anxiety score, and 29 patients (32.2%) had unimproved depression score. In multivariate analysis, age and marital status were found to be significantly associated with unimproved depression score ( $P=0.003$  and  $P=0.025$ , respectively). No evaluated factors were significantly associated with unimproved anxiety score. Almost half (47.6%) of patients aged less than 45 years had unimproved depression score, while that proportion was only 18.7% of patients in the  $\geq 45$  year age group. The proportion of patients with unimproved depression score was higher in single patients (44.2%) than in married patients (21.0%).

## Discussion

Thai HADS is a widely used and reliable measure for screening the probable presence and severity of clinical anxiety and depression in Thai patients admitted in the hospital. Thai HADS was shown to have a high sensitivity and specificity for diagnosis of these disorders<sup>(9)</sup>. In this study, the incidence of anxiety and depression, which was defined as patients with a score > 7 from self-reporting via the Thai HADS questionnaire, was 8.9% and 7.8% at admission. This finding was similar to the 5.6% prevalence of depression among spinal injury patients using Thai HADS reported by Wattanapan, et al. However, studies from the UK and Western Europe reported much higher levels of anxiety (19-35%) and depression (17-27%) among spinal injury patients, and these studies also used the HADS assessment tool<sup>(10,11)</sup>. This disparity in the prevalence of anxiety and depression among studies may be attributed to Thai cultural mores<sup>(12)</sup>, which include living with and the importance of extended family, which provides adequate social support, and if a family member becomes the primary caregiver, the patient tends to have better quality of life<sup>(13)</sup>. A 2010 study reported lack of social support, such as good social relationships and help from family, to be a risk factor for depression in patients with spinal cord injury<sup>(14)</sup>.

The incidence of anxiety and depression in this study decreased when compared between admission and discharge (Table 2), which was consistent with the findings of an earlier study by Mehadat, et al.<sup>(7)</sup> that found that the presence of anxiety and depression in paralyzed patients in Jordan decreased significantly at the end of the rehabilitation program (28.2% to 18.1% for anxiety, and 17.4% to 11.5% for depression). Kuptniratsaikul, et al.<sup>(8)</sup> also reported decreased anxiety from 18.2% to 13.6% and decreased depression from 13.6% to 2.3% in spinal cord injury patients. The findings of this study demonstrate the effectiveness of the patient counseling service provided by the psychologist that is part of our multidisciplinary team of caregivers at the Siriraj Spinal Unit. Our psychologist regularly accesses the mental health status of both patients and caregivers, and encourages patients to actively participate in the prescribed rehabilitation program. Our staff psychologist also evaluates the mental health status of our patients before discharge, which helps to preventing the development of anxiety and depression in the future.

Regarding the group of patients in this study with unimproved anxiety and depression score, we found no factors that significantly related to the anxiety group, but age and marital status significantly related to the depression group. Earlier study in the US<sup>(15)</sup> found younger age (25-49 years) to be a risk factor for depression in

patients with spinal cord injury. Bombardier, et al.<sup>(16)</sup> found that the severity of depression increased in 20-29 year-old patients, which is consistent with the finding of this study that a higher proportion of patients younger than 45 years old had unimproved depression score. In contrast, Wattanapan, et al.<sup>(3)</sup> found no significant relationship between age and depression. Similar to the finding of our study, Bombardier, et al.<sup>(14)</sup> found marital status to be one of the demographic factors that had an effect on the prevalence of depression in spinal cord injury. In the present study, we found a higher incidence of depression among single patients, which was consistent with a 1998 study that found that patients with maladjusted marital status had a higher rate of depression<sup>(17)</sup>. A study by Tate, et al.<sup>(18)</sup> reported that loss of a spouse significantly associated with depressive symptoms in spinal cord injury patients.

The limitation of this study is the small number of patients, which prevented us from employing multiple logistic regression for multivariable analysis to identify correlations between demographic factors and patients with unimproved anxiety and depression score. Regarding the preceding paragraph, the descriptions in Table 4.

## Conclusion

The incidence of anxiety and depression decreased from 8.6% and 7.8% to 4.4% and 5.6%, respectively, compared between admission and discharge. Age and marital status were the only two factors significantly associated with unimproved depression score, while no factors were able to significantly predict unimproved anxiety score. The results of this study support the efficacious role of patient counseling services at the Siriraj Spinal Unit.

## Acknowledgements

The authors gratefully acknowledge the patients that agreed to participate in this study, and Ms. Julaporn Pooliam of the Division of Clinical Epidemiology, Department of Research and Development, and researcher of the Division of Research, Department of Orthopaedic Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University for assistance with statistical analysis.

## Conflict of interest declaration

The authors hereby declare no personal or professional conflicts of interest regarding any aspect of this study.

## Funding disclosure

None

**Table 1** Demographic and clinical characteristics of patients with spinal injury

Variables	Mean
Age (years) (mean (SD))	44.4 (16.7)
Gender Male/Female	62/28 (68.9/31.1)
Education	
- No	2 (2.2)
- Primary school	24 (26.7)
- Secondary school	28 (31.1)
- Vocational certificate	10 (11.1)
- Undergraduate	21 (23.3)
- Postgraduate	5 (5.6)
Marital status	
- Single	43 (47.8)
- Married	47 (52.2)
Occupation	
- No	6 (6.7)
- Student	7 (7.8)
- Employee	32 (35.5)
- Government officer	8 (8.9)
- Office worker	4 (4.4)
- Business	14 (15.6)
- Agriculturist	14 (15.6)
- Retire	5 (5.6)
Cause of injury	
- Traffic accident	42 (46.7)
- Falls	45 (50.0)
- Violence	2 (2.2)
- Other	1 (1.1)
Level of impairment	
- Normal	28 (31.2)
- Paraplegia	31 (34.4)
- Tetraplegia	31 (34.4)
Severity of injury (n=62)	
- Complete	20 (22.2)
- In Complete	42 (46.7)
length of stay (mean (SD))	34.4 (25.2)

**Table 2** Incidence of anxiety and depression on admission and before discharge Assessment

Measure	On admission (N=90)		Before discharge (N=90)	
	N	%	N	%
HADSa	8	8.9	4	4.4
HADSd	7	7.8	5	5.6

Abbreviations: HADSa, Thai Hospital Anxiety and Depression Scale-anxiety subscale; HADSd, Thai Hospital Anxiety and Depression Scale-depression subscale

**Table 3** Mean anxiety and depression scores on admission and before discharge

Measure	On admission (N=90)		Before discharge (N=90)		P-value
	Mean	SD	Mean	SD	
HADSa	6.1	3.2	3.2	2.9	<0.001*
HADSd	5.1	3.4	3.0	3.1	<0.001*

A P-value<0.05 indicates statistical significance

Abbreviations: HADSa, Thai Hospital Anxiety and Depression Scale-anxiety subscale; HADSd, Thai Hospital Anxiety and Depression Scale-depression subscale

**Table 4** Univariable analysis of the demographic factors in patients with unimproved anxiety score

	Improved anxiety score (N=71)	Unimproved anxiety score (N=19)	P-value
Gender			1.000
male	49 (79.0%)	13 (21.0%)	
female	22 (78.6%)	6 (21.4%)	
Age (years)			0.379
< 45	31 (73.8%)	11 (26.2%)	
≥ 45	40 (83.3%)	8 (16.7%)	
Education			0.570
Lower Bachelor's Degree	49 (76.6%)	15 (23.4%)	
Bachelor's Degree and higher	22 (84.6%)	4 (15.4%)	
Marital status			0.797
Single	33 (76.7%)	10 (23.3%)	
Married	38 (80.9%)	9 (19.1%)	
Occupation			1.000
Without income/salary	14 (77.8%)	4 (22.2%)	
income/salary	57 (79.2%)	15 (20.8%)	
Cause of injury			0.810
Fall	34 (75.6%)	11 (24.4%)	
Traffic accident	34 (81.0%)	8 (19.0%)	
Violence	2 (100.0%)	0 (0.0%)	
Other	1 (100.0%)	0 (0.0%)	
Level of impairment			0.382
Paraplegia	22 (71.0%)	9 (29.0%)	
Tetraplegia	25 (80.6%)	6 (19.4%)	
Normal	24 (85.7%)	4 (14.3%)	
Severity of injury			0.209
Complete	13 (65.0%)	7 (35.0%)	
Incomplete	34 (81.0%)	8 (19.0%)	
Normal	24 (85.7%)	4 (14.3%)	
Length of stay (days)			0.426
< 30	25 (73.5%)	9 (26.5%)	
≥ 30	46 (82.1%)	10 (17.9%)	

P-value were for the Chi-square test and Fisher's exact test  
A P-value<0.05 indicates statistical significance

**Table 5** Univariable analysis of the demographic factors in patients with unimproved depression score

	Improved depression score (N=61)	Unimproved depression score (N=29)	P-value
Gender			0.638
male	41 (66.1%)	21 (33.9%)	
female	20 (71.4%)	8 (28.6%)	
Age (years)			0.003*
< 45	22 (52.4%)	20 (47.6%)	
≥ 45	39 (81.3%)	9 (18.7%)	
Education			0.321
Lower Bachelor's Degree	41 (64.1%)	23 (35.9%)	
Bachelor's Degree and higher	20 (76.9%)	6 (23.1%)	
Marital status			0.025*
Single	24 (55.8%)	19 (44.2%)	
Married	37 (78.7%)	10 (21.3%)	
Occupation			0.404
Without income/salary	14 (77.8%)	4 (22.2%)	
income/salary	47 (65.3%)	25 (34.7%)	

	Improved depression score (N=61)	Unimproved depression score (N=29)	P-value
Cause of injury			0.850
Fall	29 (64.4%)	16 (35.6%)	
Traffic accident	30 (71.4%)	12 (28.6%)	
Violence	1 (50.0%)	1 (50.0%)	
Other	1 (100.0%)	0 (0.0%)	
Level of impairment			0.099
Paraplegia	17 (54.8%)	14 (45.2%)	
Tetraplegia	25 (80.6%)	6 (19.4%)	
Normal	19 (67.9%)	9 (32.1%)	
Severity of injury			0.108
Complete	10 (50.0%)	10 (50.0%)	
Incomplete	32 (76.2%)	10 (23.8%)	
Normal	19 (67.9%)	9 (32.1%)	
Length of stay (days)			1.000
< 30	23 (67.6%)	11 (32.4%)	
≥ 30	38 (67.9%)	18 (32.1%)	

P-value were for the Chi-square test and Fisher's exact test

A P-value<0.05 indicates statistical significance

## References

- Unnanantana A. Establishment of the spinal unit and roles in patient care. In: Chavasiri C, Unnanantana A, Klomjaiyen P, editors. Multidisciplinary approach to spinal injured patients. Bangkok: ruenkaewprinting; 2005. p. 5.
- Homsin P. Factors related to disabled worker's adaptation at industrial rehabilitation centre, Pathumtani province. Master's thesis (public health nursing), Faculty of Graduate Studies, Mahidol University; 1994.
- Wattanapan P, Nipitwattanapon C, Vichiansiri R. Prevalence of depression in patients with Spinal cord lesion at Srinagarind Hospital. J Thai Rehabil Med 2010; 20: 46-51.
- Scivoletto G, Petrelli A, Di Lucente L, Castellano V. Psychological investigation of spinal cord injury patients. Spinal Cord 1997; 35: 516-20.
- de Carvalho SA, Andrade MJ, Tavares MA, de Freitas JL. Spinal cord injury and psychological response. Gen Hosp Psychiatry 1998; 20: 353-9.
- Cebrospinal Fluid Research. Available at: <http://www.biomedcentral.com/content/pdf/1743-8454-6-S1-S54.pdf> . Accessed February 3, 2009.
- Mehaidat M, Naheyah A, Al-Ghuweri A. Anxiety and depression symptoms among paraplegic patients. Neurosciences (Riyadh) 2005; 10: 112-3.
- Kuptniratsaikul V, Smerasuta O, Klomjaiyen P. Psychological conditions of spinal cord injury patients. Siriraj Hosp Gaz 2000; 52: 23-9.
- Nilchaikovit T, Lortrakul M, Phisanuthideth U. Development of Thai version of Hospital Anxiety and Depression Scale in cancer patients. J Psychiatr Assoc Thailand 1996; 41: 18-30.
- Kennedy P, Lude P, Elfström ML, Smithson E. Cognitive appraisals, coping and quality of life outcomes: a multi-centre study of spinal cord injury rehabilitation. Spinal Cord 2010; 48: 762-9.
- Kennedy P, Evans M, Sandhu N. Psychological adjustment to spinal cord injury: the contribution of coping, hope and cognitive appraisals. Psychol Health Med 2009; 14: 17-33.
- Tresirichod T. Chapter 4 Western and Eastern culture [Internet]. 2017 [cited 2017 Nov 2]. Available from: <https://www.slideshare.net/TeeTre/4-77330178>.
- O'Shea A, Smedema SM. Understanding depressive symptoms among individuals with spinal cord injuries: a biopsychosocial perspective. Rehabil Couns Bull 2014; 58: 20-8.
- Orenczuk S, Slivinski J, Mehta S, Teasell RW (2010). Depression following spinal cord injury. In Eng JJ, Teasell RW, Miller WC, Wolfe DL, Townson AF, Hsieh JTC, Connolly SJ, Mehta S, Sakakibara BM, editors. Spinal cord injury Rehabilitation Evidence. Version 3.0.
- Bombardier CH, Richards JS, Krause JS, Tulskey D, Tate DG. Symptoms of major depression in people with spinal cord injury: implications for screening. Arch Phys Med Rehabil 2004; 85: 1749-56.
- Bombardier CH, Fann JR, Tate DG, Richards JS, Wilson CS, Warren AM, et al. An exploration of modifiable risk factors for depression after spinal cord injury: which factors should we target?. Arch Phys Med Rehabil 2012; 93: 775-81.

17. Post MW, Van Dijk AJ, Van Asbeck FW, Sshrijvers AJ. Life satisfaction of persons with spinal cord injury compared to a population groups. *Scand J Rehabil Med* 1998; 30: 23-30.

18. Tate DG, Kalpakjian CZ, Forchheimer MB. Quality of life issues in individuals with spinal cord injury. *Arch Phys Med Rehabil* 2002; 83(12 Suppl 2): S18-25.

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## อุบัติการณ์ของภาวะวิตกกังวลและซึมเศร้าในผู้ป่วยบาดเจ็บกระดูกสันหลัง ณ ศูนย์ผู้บาดเจ็บกระดูกสันหลัง โรงพยาบาลศิริราช

ศรินทร์ล ขวศิริ, พบ, นภชนก สุขประเสริฐ, ศศ.ม, ชลเวช ขวศิริ, พบ

ผลการศึกษาผู้ป่วยบาดเจ็บกระดูกสันหลังจำนวน 90 คน อายุเฉลี่ย 44.4 ปี (ส่วนเบี่ยงเบนมาตรฐาน 16.7 ปี, ระหว่าง 18-76 ปี) ร้อยละ 68.9 เป็นเพศชาย จากการใช้แบบประเมิน Thai HADS พบว่ามีอุบัติการณ์ของภาวะวิตกกังวลและภาวะซึมเศร้าเมื่อแรกรับ มีค่าเท่ากับ ร้อยละ 8.9 และ 7.8 ตามลำดับ และลดลงเป็น ร้อยละ 4.4 และร้อยละ 5.6 ในวันจำหน่ายออกจากโรงพยาบาล คะแนนเฉลี่ยภาวะวิตกกังวลและภาวะซึมเศร้าลดลงเมื่อแรกรับจนถึงวันจำหน่ายออกจาก โรงพยาบาล โดยคะแนนเฉลี่ยภาวะวิตกกังวลลดลงจาก 6.1 (SD=3.2) เป็น 3.2 (SD=2.9) และคะแนนเฉลี่ยภาวะซึมเศร้าลดลงจาก 5.1 (SD=3.4) เป็น 3.0 (SD=3.1) ไม่พบที่มีความสัมพันธ์ระหว่างผู้ป่วยที่มีคะแนนภาวะวิตกกังวล ไม่ลดลงกับอายุ เพศ ระดับการศึกษา สถานภาพสมรส อาชีพ สาเหตุการบาดเจ็บ ระยะเวลาอนโรงพยาบาล ความรุนแรงของความพิการและการบาดเจ็บ แต่พบความสัมพันธ์ระหว่างผู้ป่วยที่มีคะแนนภาวะซึมเศร้า ไม่ลดลงกับอายุ และสถานภาพสมรส ( $P<0.05$ ) โดยกลุ่มอายุน้อยกว่า 45 ปีและกลุ่ม โศกมีคะแนนความซึมเศร้าไม่ลดลงเมื่อเปรียบเทียบกับกลุ่มที่มีอายุ 45 ปีขึ้นไปรวมทั้งกลุ่มที่มีสถานภาพสมรส

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