



PSYCHIATRIC DISORDERS IN BURN PATIENTS

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Abstract

Objective: To study psychiatric disorders in burn patients and to determine the factors associated with the occurrence

Methods: Thirty-eight hospitalized patients in adult burn unit in Maharaj Nakorn Chiang Mai Hospital during the same six-month period were studied to elicit data regarding their demographic characteristics, causes and types of burn, depth and total body surface area (TBSA), amputation, pain, length of stay, number of operations, and psychiatric disorders during the admissions. The participants were divided into two groups, psychiatric group (PG) and non-psychiatric group (NG). The frequency of visits from the patients' relatives, the time spent on the visits, and the patients' satisfaction with the visits were observed. Moreover, the impact of image and the patients' understanding about the burn illness was recorded. Finally, the factors correlated with PG were studied.

Results: Of the total number of subjects, 18 patients (47.4%) had psychiatric disorders. Fifty-five percent of the participants in PG were diagnosed with adjustment disorder, 33.3% with delirium, and 11.1% with major depressive disorders. Of these, 33.3% were drug users, mainly alcohol, 11.1% had narcissistic personality disorder, and 11.1% had acute stress disorder (ASD). Factors correlated with PG were 1) TBSA, 2) burn area, 3) number of operation, 4) pain magnitude, and 5) patients' dissatisfaction with the relatives' visits. Besides, the length of stay of PG was longer than that of NG for about two weeks.

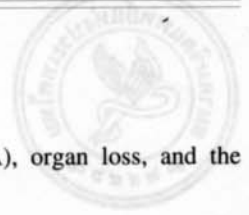
Conclusion: This study found the emergence of psychiatric disorders in nearly half of the burn patients. Thus, the prevention and early detection are deemed very crucial. However, the small sample size used in this study might have brought about inaccurate prevalence rate, so a longitudinal study should be conducted to follow up or detect some other psychiatric disorders. *J Psychiatr Assoc Thailand* 2003; 48(4): 223-229

Key words: burn, psychiatric disorder, mental illness

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Introduction

Burn brings about individual's physical and emotional scars. Some of burn patients in surgical unit suffered from their psychiatric disorders. Besides, the rate of the occurrence of psychiatric illness in burn patients is increasing at the present time.

There are many studies on burn pertinent to psychiatric disorder. Adjustment disorder, posttraumatic stress disorder (PTSD), and major depressive disorder (MDD) were commonly found^{1,2}. To give only physical treatment may not be enough for them to survive³ because burn patients were also injured their self-boundary. Thus mental adaptation was as important as physical rehabilitation for them⁴.

Also, there are a number of studies related to some factors associating psychiatric disorder in burn patients such as length of hospitalization, impact of body image. However, what are more supposed to be predisposing factors were introduced into this study.

Methods

All hospitalized patients in adult burn unit in Maharaj Nakorn Chiang Mai during the same six-month period who gave informed consent were examined and interviewed by the authors. After that, they were divided into 2 groups : psychiatric group (PG) and non-psychiatric group (NG), by using the Diagnostic and Statistical Manual of Mental Disorders-4th edition (DSM-IV) as the diagnostic criteria.

The physical information was recorded including areas and depth of the wound, total

body surface area (TBSA), organ loss, and the length of hospital stay.

Also, these patients completed a personal questionnaire that included questions about demographic information, causes and types of the burn, the impact of the subjective experience and the meaning of event, the image, the past experience to major stress, the past psychiatric history, the family psychiatric history, and the personality traits.

Both groups were evaluated in the first week of admission and were reevaluated once a week about pain magnitude, by using the visual analogue scale for pain, frequency and satisfaction of the visit from support people, and kinds of stresses during the stay.

ANOVA and t-test were used to determine the extent to which the length of stay, TBSA, pain score predicted emergence of psychiatric disorder. Chi-square test was applied for nominal variables such as sex and source of burn.

Result

Thirty-eight hospitalized adult burn patients were enrolled in this study. Twenty-eight were men and ten were women. Sixty-eight percent (28 of 38) of the participants were married. The mean age was 42.16 years old (18-88, sd. = 17.04). The average duration of formal education was 6.3 years; the patient pool included primary education (57.9%). Unemployment and blue collar workers were the majority (73.7%) of the group. The average income was less than 10,000 baht per month, with 57.9% of them earned 5,000 baht or less a month.

Accident was the major cause of burn (68.4%), followed by drunkenness (26.3%), and the least was suicidal attempt (5.3%). For the types, electrical burn was 36.8%; flame injury and scalding were in equal proportion - 31.6%. In both genders, the difference among types of burn was significant ($P < 0.001$), and among the causes tended to be significant ($P = 0.051$). The body surface area (BSA) ranged from 3-70%, with 24% of the patients sustaining burns to over 30%. The vast majority of the depth of burn was 3rd degree (68.4%), 26.3% for the 2nd degree, and the rest was for 4th degree. Amputation had been found for 21.2%.

From the table, eighteen patients (47.4%) were of PG; the rest were of NG. There was no significant difference in gender distribution between both groups. In PG, the presenting

symptoms were disorientation, depressed mood, anxiety and suicidal ideation. Of these, 55.6% had adjustment disorder, 33.3% had delirium, and 11.1% had major depressive disorder. Two in PG had co-morbidity axis II diagnosis of narcissistic personality disorder, and two participants had co-morbidity of acute stress disorder (ASD). Alcohol dependence had been found for 33.3% among participants in PG. The larger the BSA, the greater in having psychiatric disorder ($P = 0.001$). There was no correlation between the depth of burn and the psychiatric diagnosis ($P = 0.059$).

In PG, participants were not satisfied with the visit of the relatives, in particular, their spouses, family members, and close friends ($P = 0.05$). The frequency of visit and the time spending on the visiting of the relatives could not distinguish

Table 1 The comparison of the variables between psychiatric and non-psychiatric group

Variables		PG (18)	NG (20)	Remarks
Age (years)		42.0±12.5	42.3±20.6	
Percentage males		66.7	80	
BSA (%)		41.4	22.5	$P < 0.05$
Depth (%)	2 nd degree	11.1	40	$P = 0.059$
	3 rd degree	77.8	60	
	4 th degree	11.1	0	
Pain (mean)		7.0±0.8	5.3±1.8	$P < 0.05$
Past psychiatric history (%)		55.6	50	
Amputee (%)		22.2	20	
Number of operations		2.78±2.6	1.40±1.3	$P < 0.05$
Frequency of visit (per week)		5.8±1.9	4.8±2.7	
Visit time (hours per week)		16.5	4.5	
Hospital stay (days)		24.2	15.3	$P < 0.05$

the difference between PG and NG ($P= 0.27$ and $P= 0.273$). Among kinds of stresses during hospitalization, preoccupation with the physical illness or burn wound was the most common. The least(s) were the conflict with medical team and their own financial problems. The more pain the patients had, the more mentally ill they were ($P= 0.003$); the mean Visual Analogue Scale of PG was 7.0, and of NG was 5.3.

The past history of psychiatric illnesses had no correlation with the presence of psychiatric disorders after burn ($P= 0.75$). Likewise, the organ loss in PG did not significantly differ from in NG ($P= 0.75$). Psychiatric disorders were significantly related to burn wounds of abdomen, genital organ and extremities ($P < 0.05$).

NG stayed in the hospital for 15.3 days; in PG, it was 24.2 days. The length of stay in PG was significantly longer than that in NG ($P= 0.014$)

Sixteen subjects (42.1%) admitted that burn wound affected their images. Their mean age of this group was 31.88 years, sd 12.85, 2 women and 14 men. The younger had more concern than the older ($p < 0.001$); however, there was no different impact between sexes.

Eleven subjects (28.9%) had poor understanding about their illness, whereas 16 (42.1%) did better. Eight persons, 21.1%, believed that the accidents were on account of "karma".

Overall participants graded their pain from score 1.6 to 8, mean = 6.22, sd 1.60. The group with higher scores significantly correlated with the emergence of psychiatric disorder than those with lower ones ($p < 0.005$).

Subjects who got more frequent operations

distinctively faced more psychiatric problem than those who did not. The mean operation number for PG was 2.78, sd 2.6, whereas 1.40, sd 1.3, in NG.

Discussion

This study showed that at least nearly half of the hospitalized burn patients were with psychiatric disorders. This result supported the study of Madianos MG et al⁵ that found 46.6% of burn patients had psychiatric illnesses after burn. Our study did not support that face disfigurement brings about psychiatric disorders like the former study did, but it showed high correlation of the injury to abdomen, extremities and genital organ. The reason why was questionable.

Delirium was also found in one-third of cases and was in the same range as of other studies (18-70%)^{6,7,3}. The mean onset of delirium was 3.6 days that was similar to the finding of the other study (within the first 1 to 2 days). The causes were multi-factorial such as the catabolic state of burn wound, anoxic brain, and alcohol withdrawal delirium. In this study, all delirious patients had a history of alcohol abuse.

Adjustment disorder was found to be the main psychiatric disorder like in previous studies^{8,9}.¹⁰ but the percentage was less than those finding. The reasons for this may be this study was the prospective study and the early psychological support from the liaison-psychiatry team might delay the coming of the psychiatric illness.

Our data had no evidence for posttraumatic stress disorder (PTSD), only two patients met criteria for ASD on their first two days of admission, however, subsequently their symptoms disappeared.

The explanations for this may be as following; first, the period of study was too short; second, the early and regular care from psychiatry team might prevent the patients from having psychiatric disorder, and finally, the differences among the subjects in this study and in the former studies.

Our study was relevant to several studies^{11,12} on the impact of body image that affected younger people more than older ones, but gender distribution in previous studies had found that female were more affected than male patients^{13,14,15}. And maybe all subjects were Buddhists, most of them thought of "karma" as a part of the causes. However, such thinking did not differentiate NG from PG.

This study confirmed that the longer hospitalization, the more incidence of psychiatric illness. Our study found the shorter duration (about 2 weeks) compared to the previous study (4 weeks)¹⁶. Likewise, number of operation which playing role as an encouraging factor of the occurrence of psychiatric disorder also correlated with the length of stay.

Pain control was another factor preventing patients from psychiatric complication as shown in the results. However, it is hard to tell which one is a cause or consequence, pain or psychiatric problem.

In summary, this study found the emergence of psychiatric disorders in nearly half of burn patients. There are many factors associated with burn and burn wound correlated with the occurring of psychiatric disorders. Larger sample size or multi-center surveying may be the further studies. Long term observation or follow up after discharge should be investigated.

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โรคทางจิตเวชในผู้ป่วยแผลไฟไหม้ น้ำร้อนลวก

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บทคัดย่อ

วัตถุประสงค์ สํารวจระบ๑ดว๑ทยาของโรคทางจิตเวชในผู้ป่วยแผลไฟไหม้ น้ำร้อนลวก และ ปัจจัยที่สัมพันธ์กับการเกิดโรค

วิธีการศึกษา สัมภาษณ์ผู้ป่วยในจํานวน 38 ราย แผนกไฟไหม้ น้ำร้อนลวก โรงพยาบาล มหาราชนครเชียงใหม่ในช่วง 6 เดือน บันทึกข้อมูลพื้นฐาน สาเหตุ ชนิดของการบาดเจ็บ และ ตำแหน่งของแผล ผู้ป่วยถูกแบ่งเป็นสองกลุ่มคือ กลุ่มที่มีและไม่มีโรคทางจิตเวช มีการบันทึก จํานวนการผ่าตัด การตัดอวัยวะ ระยะเวลาที่อยู่โรงพยาบาล ความเจ็บปวด การเชื่อมของญาติ ความเข้าใจเรื่องความเจ็บป่วยและผลกระทบต่ออุปนิสัย เป็นต้น และหาความสัมพันธ์ของ การเกิดโรคทางจิตเวชกับปัจจัยเหล่านี้

ผลการศึกษา ผู้ป่วย 18 ราย (ร้อยละ 47.4) มีโรคทางจิตเวช โดยมี adjustment disorder ร้อยละ 55, delirium 33.3% และ major depressive disorder ร้อยละ 11.1 นอกจากนี้พบว่า ร้อยละ 33.3 ติดสุรา ส่วน narcissistic personality disorder และ acute stress disorder พบอย่างละร้อยละ 11.1 การเกิดโรคทางจิตเวชสัมพันธ์กับ 1) พื้นที่ผิว 2) ตำแหน่งของแผล 3) ระดับความเจ็บปวด 4) จํานวนครั้งของการผ่าตัด 5) ความพึงพอใจต่อการเชื่อมของญาติ ผู้ป่วยกลุ่มนั้นนอนโรงพยาบาลนานกว่าและผ่าตัดมากกว่าอีกกลุ่มหนึ่ง

สรุป ผู้ป่วยแผลไฟไหม้ น้ำร้อนลวกมีความเสี่ยงในการเป็นโรคทางจิตเวชมากเกือบครึ่งหนึ่ง การป้องกันและค้นหาตั้งแต่ระยะเริ่มแรก เป็นสิ่งจําเป็น อย่างไรก็ตามตัวอย่างในการศึกษานี้ ค่อนข้างน้อย และยังขาดการติดตามผลในระยะยาวอยู่ วารสารสมาคมจิตแพทย์แห่งประเทศไทย 2546; 48(4): 223-229

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