International Journal of
Science and Engineering Investigations vol. 4, issue 46, November 2015
ISSN: 2251-8843

Effectiveness of Implementing Inpatient Psychological Care and Cross-functional Collaboration: A Case Study in a Taiwan Teaching Hospital

Yi-Ting Liu[1], Kai-Yen Chang[2]
[1]Dept. of Nursing, Taipei Tzu Chi Hospital, The Buddhist Tzu chi Medical Foundation and Tzu Chi Univ. of Science and Technology
[2]Department of Nursing, Taipei Tzu Chi Hospital, The Buddhist Tzu chi Medical Foundation
([1]crystalting2205@gmail.com, [2]mandy7353@gmail.com)

***Abstract*- Background and purpose:** Psychological health has been getting increasing domestic attention. Inpatients often suffer emotional distress due to physical ailments as well as social and economic factors. However, health care workers tend to focus more on patients 'physical care, while neglecting their psychological care. As such, we explored the correlations between the demographic characteristics of patients, their disease characteristics, and levels of emotional distress, as well as the effectiveness of the implementation of cross-functional collaboration in patient care. **Methods:** This study used a retrospective study design. Using a structured psychological assessment scale, we measured the emotional distress of 10,598 inpatients at a teaching hospital in northern Taiwan from April to September 2015. **Results:** Notably, 11.8% of the inpatients suffered from some emotional distress, ranging from low to severe. Some factors, such as age, gender, being in the internal medicine or general surgery departments, whether the patient was scheduled to have a surgery, and whether the patient had a history of mental illness, had statistically significant relationships with emotional distress ($P < .000$). Logistic regression analysis showed that patients over 65 years old, male patients, and surgical patients had significantly ($P < .000$) greater odds of emotional distress, with odds ratios of 0.706, 0.601, and 1.941 respectively. The study of the cross-functional care confirmed that health care workers could use patients' psychological assessment results as a reference to notify social workers or psychiatry departments to ensure that appropriate care measures are provided. **Conclusions:** By adopting appropriate medical assessments to understand patients' emotional distress and its influencing factors, medical personnel can provide appropriate and professional cross-functional services to enhance the professional quality of patient care and attend more to the patient's psychological needs.

***Keywords*-** *psychological assessment, emotional distress, Brief Symptom Rating Scale(BSRS), cross-functional collaboration*

I. INTRODUCTION

Psychological health has been the subject of global attention. With the ever-changing environment of today's society and the rapid development of the information industry, in addition to economic pressures, many people are experiencing severe stress, which has led to a higher incidence of suicide. According to the World Health Organization (WHO), over 800,000 people die by suicide every year [1] [7] [8]. Suffering from an illness is one of the key predictors of suicide [10]. Among reported suicide incidents, medical institutions had the highest reported prevalence rate, at 90.1% [6]. Following government policies, the Joint Commission of Taiwan recently added 10 goals to the Patient Safety Promotion Program "to improve prevention of patient suicide." It was also found that under busy clinical situations, medical personnel tend to focus more on patients 'physical care, while neglecting psychological care. For that reason, hospitals should pay more attention to the psychological health of inpatients by establishing a psychological assessment and care communication system. In this study, we explored the correlations between the demographic characteristics and emotional distress of inpatients, as well as examined the effectiveness of implementing cross-functional collaboration to relieve emotional distress, with the intention of providing a reference for future clinical care.

II. LITERATURE REVIEW

Suicide was one of the top 10 causes of death in Taiwan for ten consecutive years since 1997. In Taiwan, there were 6,264 suicides reported in the first quarter of 2013, among which the number of suicides by women was 1.80 times that of men. Past research has noted that the odds ratio of women's repeated suicide attempts was 2.06 compared to men's, indicating a statistically significant difference [11]. Regardless of gender, most reported suicides (90.5%) were among those aged 15 to 64 years old [5]. A study on the relation between cancer patients and emotional distress revealed that patients aged 45 to 64 years old had the highest rate of emotional distress (48.4%), followed by those aged over 65 years old (28.4 %) [10]. Many causes of suicide relate to losing the ability to deal with life stress, economic difficulties, difficult interpersonal relationships, and chronic pain or disease [1]. Men over 45 years old, those with a history of inpatient psychiatric treatment, those who suffered from poor health, those who had

experienced a recent death or separation from close relatives, those who were retired or unemployed, and those who were single (including divorced or widowed) all tended to have a higher likelihood of dying by suicide than did the average person [2]. In some cases, before attempting suicide, victims exhibit signals or behaviors that reveal their intention; then, they progress from suicidal intention to actual suicidal behavior. In about 50% of reported cases, the victim saw a general physician within one month of dying by suicide. Furthermore, 33–45% of victims clearly expressed suicidal intentions before successfully attempting suicide [4] [8]. Obviously, the causes of suicide cannot be explained by a single factor; however, emotional distress is an important signal of potential suicide. In other words, it is critical to identify the degree of emotional distress of patients at the earliest opportunity [1]. The United States has included "emotional distress" as the sixth vital indicator in screening and assessment tools for suicide. Relevant studies found that when medical staff provided referral psycho-oncology services to patients who were initially diagnosed with cancer, one-third of these patients showed no signs of emotional distress. This could have been caused by the overestimation of patients ' distress by medical staff. After medical institutions began implementing assessment tools and providing related training to relevant employees, the number of patient referrals increased from 6.7% to 50% [13], indicating that a change of psychological care processes could help medical staff better understand the level and causes of emotional distress among patients, and accordingly provide necessary support and care. Thus, changing the psychological care process would be effective and necessary [11] [12].

In addition to the influences of basic demographic characteristics, the Taiwan Suicide Prevention Center discovered that among all causes of suicide, illness ranked 6th. Illness can bring about different levels of anxiety, depression, and feelings of helplessness or hopelessness, and eventually can become a major cause of suicide. For example, inpatients that are scheduled for surgery might suffer from anxiety due to feelings of uncertainty about the coming treatment. Studies showed that as many as 11% to 18% of adult patients showed symptoms of depression and anxiety before surgery. Domestic scholars have suggested that internal medicine departments had the highest prevalence of inpatient suicide, while the most suicide attempts occurred among patients who were diagnosed with cancer [9]. A study targeting patients aged 65 years old who had died by suicide revealed that 75.3% of the patients suffered from some kind of illness and 48.3% suffered from a major physical illness before death. Thus, it is apparent that the emotional impact caused by illness should not be underestimated.

Based on the literature review and the purpose of this study, we proposed the conceptual framework illustrated in Figure 1.

III. METHODS

A. Research Design and Objects

A retrospective study design was adopted and psychological assessments and demographic data of inpatients were collected from a northern teaching hospital between April and September 2015 for use in this study. The criteria used for sample selection were: (1) being over 18 years old; (2) having clear consciousness and able to express him/herself with words; and (3) not being in the hospital to give birth.

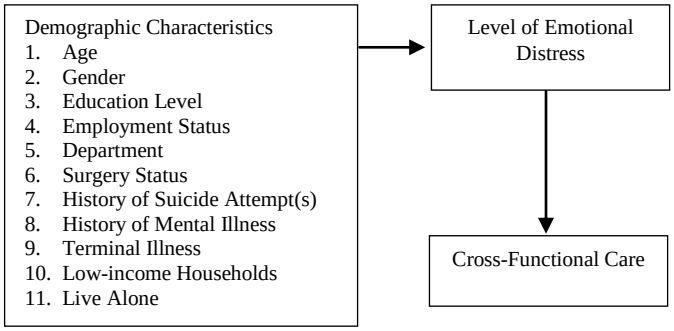

Figure 1. Conceptual framework

In March 2013, we set up an operating system and formulated the job specifications for the implementation of the psychological assessment. The Brief Symptom Rating Scale (BSRS) was adopted as the assessment tool. We also launched a relevant care program. Medical staff was asked to conduct assessments on new patients within 8 hours of admission by asking the patients to fill out the BSRS assessment form. Then, this information was input into the psychological assessment database of the care information system. Those who had a BSRS score 6–9 were considered to suffer from low-level emotional distress, while a BSRS score of 10–14 indicated medium-level emotional distress, such that the medical staff needed to prepare and arrange certain care measures for these patients. If the BSRS score was ≤15, or the patient had a history of suicide attempts, the information system would automatically notify the social services unit and send an alert notification to the relevant attending physician, "suggest notifying and involving the psychosomatic department " (Figure 2).

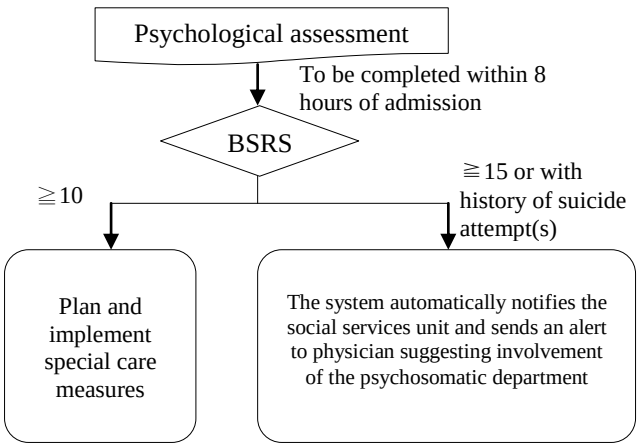

Figure 2. Procedures of Inpatient Psychological Assessment and Special Care

B. Research Tools

The "mood thermometer," usually known as the 5-item BSRS (BSRS-5), was developed by Professor Li Mingbin and his colleagues as a screening tool of mental illness. The purpose of the BSRS-5 is to quickly identify patients' need for psychological care and to provide necessary psychological health services accordingly. The scale contains five items, each measuring the severity of one of the five aspects of emotional distress: anxiety, hostility, depression, inferiority, and insomnia. The survey is self-reported. Each item is rated on a scale from 0 to 4, with "0 "indicating the lack of that symptom; "1 "indicating a low-level symptom; "2 "a medium-level symptom; "3 "a severe symptom; and "4 "an extremely severe symptom. The total score of the survey ranges from 0 to 20. Based on their score, the respondents can be divided into four categories: those who scored less than 6 are within the normal range; those who scored 6–9 are suffering low-level distress; those who scored 10–14 are suffering from medium-level distress; and those with a score of over 15 are suffering from severe emotional distress. The reliability and validity of this scale have been verified. Specifically, it has good internal reliability when applied to different groups, indicating a wide range of applicability, with a Cronbach's α = 0.77–0.90. The retest reliability was 0.82 for this study [3].

C. Data Analysis

After the collected information and coding was entered into the computer and cross-checked for accuracy, the statistical software SPSS 18.0 was used to carry out the descriptive and inferential statistical analyses. Descriptive statistics included data frequency, distribution, percentage, mean, and standard deviation. Inferential statistics included chi-square test, independent sample t-test, and logistic regression analysis. A $P < .05$ was considered statistically significant.

IV. Results

A. Distribution of Demographic Characteristics, Medical Department, and Emotional Distress Level

After excluding the cases not eligible for analysis, we had a total of 10,958 patients. Approximately 11.8% of the participants reported some level of emotional distress. Specifically, 8.4% reported a BSRS score of 6–9, 2.6% reported a score of 10–14, and 0.7% reported a score of ≥15 (Figure 3).

An analysis on the demographic characteristics suggested that among the participants with emotional distresses, the majority were aged between 18 and 64 (67.3%) and most were female (60.1%). Around three-quarters had lower than or equivalent to a high school education (72.1%) and over two-thirds were unemployed (67.3%). More of the patients with some distress were from the general surgery department (62.2%) than from the internal medicine department, and more than half had no surgery scheduled (53.5%). Most had no history of suicide attempts or mental illness, at 99.1% and 99.27% respectively. Around four-fifths had not been diagnosed with a terminal illness (81.1%). As for their socio-economic status, 98.5% did not belong to a low-income household and 97.6% were not living alone (Table 1).

As for whether demographic characteristics influenced patient emotional distress, we found that emotional distress significantly differed by age (χ^2 = 38.354, P < .000), gender (χ^2 = 80.74, P < .000), internal medicine or general surgery (χ^2 = 103.771, P < .000), and whether the patient was scheduled for surgery (χ^2 = 38.434, P < .000). A history of mental illness was also significantly correlated with distress levels (χ^2 = 99.277, P < .000; Table 1).

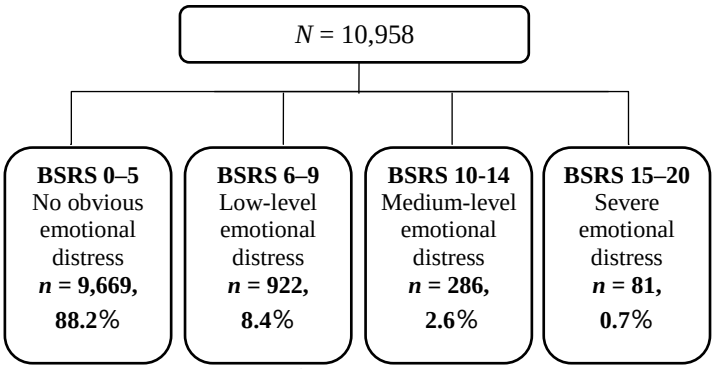

Figure 3. Distribution of Inpatients 'Psychological Health Status

TABLE I. Analysis of Inpatients 'Psychological Health Status, Demographic Characteristics, and Disease Characteristics (*N* = 10,958)

Variables	No obvious emotional distress *n* = 9,669 88.2%		Some emotional distress *n* = 1,289 11.8%		χ^2	*P*
	n	%	*n*	%		
Age					38.354	.000*
18–64	5,639	58.3	868	67.3		
65≤	4,030	41.7	421	32.7		
Gender					80.74	.000*
Male	5,143	53.2	514	39.9		
Female	4,526	46.8	775	60.1		
Education Level					1.203	0.273
Lower than high school (including high school)	7,115	73.6	930	72.1		
Higher than college (including college)	2,554	26.4	359	27.9		
Employment					0.019	0.891
Yes	3,168	32.8	420	32.6		
No	6,483	67	867	67.3		
Department					103.77	.000 *
Internal medicine	5,113	52.9	487	37.8		
General surgery	4,556	47.1	802	62.2		
have a surgery scheduled					38.434	.000 *
Yes	3,628	37.5	599	46.5		
No	6,041	62.5	690	53.5		

Variables	No obvious emotional distress		Some emotional distress		χ^2	P
	n = 9,669 88.2%		n = 1,289 11.8%			
	n	%	n	%		
ever attempted to commit suicide					0.139	0.709
Yes	5	0.1	1	0.1		
No	9,664	99.9	1288	99.9		
history of mental illness					99.277	.000 *
Yes	110	1.1	62	4.8		
No	9,559	98.9	1227	95.2		
terminal illness					1.352	0.245
Yes	1,964	20.3	244	18.9		
No	7,705	79.7	1045	81.1		
low-income household					3.097	0.078
Yes	92	1	19	1.5		
No	9,577	99	1270	98.5		
live by yourself					0.508	0.476
Yes	203	2.1	31	2.4		
No	9,466	97.9	1258	97.6		

*P < .05
Employment status has 20 missing value

B. *Factors influencing the psychological health status of inpatients*

We used logistic regression analysis to predict patients' emotional distress and its influencing factors. The results suggested that age, gender, internal medicine, and general surgery significantly affected the degree of emotional distress; specifically, the odds ratios of patients who were 65 years old or older, those who were male, and those who were in the surgical department were 0.706, 0.601, and 1.941, respectively (P < .000) (Table 2).

TABLE II. LOGISTIC REGRESSION ANALYSIS OF THE INFLUENTIAL FACTORS OF INPATIENT PSYCHOLOGICAL HEALTH

Variables	B	S.E	Wals	OR	P
Age	-0.349	0.071	24.353	0.706	.000*
Gender	-0.51	0.062	67.467	0.601	.000*
Departments	0.663	0.084	61.686	1.941	.000*
have a surgery scheduled	-0.101	0.082	1.494	0.904	0.222

*P < .05

C. *The psychological health status of in-patients and cross-functional care*

In terms of patients 'psychological assessment results, we found that the emotional distress scores of patients provided with care measures (t = -26.431, P < .000) and for whom social workers (t = -11.71, P < 0.000) and psychosomatic departments were notified (t = -5.644, P <. 001) tended to be significantly higher (Table 3). This indicated that health care workers were able to assess the psychological status of patients with the tool. This suggests that appropriate intensive care should be initiated along with appropriate notification of social services or psychosomatic departments.

TABLE III. ANALYSIS OF THE DIFFERENCES IN INPATIENT PSYCHOLOGICAL HEALTH STATUS BY INITIATION OF RELEVANT CROSS-FUNCTIONAL CARE

Variables	n	M	SD	t	P
Care measures provided	554	8.45	5.712	-26.43	.000*
Notified social workers	464	5.54	6.139	-11.71	.000*
Notified psychosomatic department	123	5.17	5.638	-5.644	.001*

*P < .05

V. DISCUSSION

The results of the study showed that among the demographic characteristics, inpatients who were 65 years old or older had less emotional distress, which was consistent with the findings of previous research noting that suicide rates were highest among those aged 15–64 (90.5%), and that senior cancer patients had less emotional distress [5][10]. According to our study, female patients had higher levels of emotional distress than did male patients, which also supported past research, as both reported suicide rates and rates of repeated attempts were significantly higher among women than among men [5][11]. However, the correlation between having a surgery scheduled and emotional distress was not significant in our study, which differs from past findings showing that inpatients seeking surgical treatment generally had anxiety or other emotional distress due to uncertainty about the upcoming surgery. A possible explanation could be that the assessment in our study was conducted when inpatients had been just admitted to the hospital. We did not further explore whether there were changes in patients' emotional distress levels prior to the study and following the surgeries, or when there were changes in the illness condition, which is a topic worth further examination and discussion in future studies.

VI. CONCLUSION

Our study revealed that age, gender, and being in the internal medicine or general surgery department are major factors predicting whether patients suffer from emotional distress. Psychological assessment and an appropriate care information system can help medical personnel systematically measure and recognize those at high risk of emotional distress, so that necessary cross-functional care can be initiated to achieve a good medical care.

REFERENCES

[1] World Health Organization on the internet at http://www.who.int/mediacentre/factsheets/fs398/zh/

[2] M.B. Lee, C.W. Tai, S.C. Liao, and H.C. Chiang,“ Suicide Prevention Strategy and Prospects,” Journal of Nursing., vol.53, no.6, pp. 5-12, 2006.

[3] J.Y. Yen, C.H. Ko, M.J. Yang, C.H. Shih, W.C. Huang, Y.D. Lian, M.B. Lee, “Screening Depression in the Community: Comparison between Taiwanese Depression Scale and the 5-Item Brief Symptom Rating Scale,” Taipei City Medical Journal, vol.2, no.8, pp737-744, Aug 2005.

[4] J.B Luoma , C.E Martin, J.L. Pearson ”Contact With Mental Health and Primary Care Providers Before Suicide: A Review of the Evidence” American Journal Psychiatric, ” vol.159, no.6, p909-916, 2002.

[5] Suicide Prevention Communication”Suicide informed care system -2013 Characteristics of the first half notified cases,”Newsletter For Suicide Prevention Network, vol.8, no.3, p9 2013.

[6] W.H.Chang, S.C.Lia, M.B. Lee, ”Major disease and Suicide,” Newsletter For Suicide Prevention Network, vol.4, no.5, p6 2012.

[7] S.C.Liao, • Suicide Prevention Achievement and Prospects in Taiwan • Newsletter For Suicide Prevention Network.vol.7, no.4, p3-4 2012 ◦

[8] M.B. Lee,. S.C. Liao,. ” Suicide prevention ”.Formosan J Med, vol.10, no.3, p366-373 2006

[9] C.I.Hung, C.Y.Liu, M.N.Liao, Y.H.Chang, Y.Y.Yang, E.K.Yeh”self-destructive acts occurring during medical general hospitalization.” Gen Hospital Psychiatric. vol.22, no2 p115-121 Mar-Apr 2000 .

[10] C.H.Chiu, C.J.Kuo, Y.Y. Chen, C.C Chen, ; M.B. Lee, C.H. Lin, D.Hung, C.C. Lin,”Comparison of Epidemiological Characteristics between First-ever and Repeated Suicide Attempters.” Taipei City Med J vol.3, no.10, p59-66 Oct 2006.

[11] D.J.Dunn,.”The sixth vital sign: Health literacy assessment.” Florida Nurse, vol.58, no.2, p12 2010.

[12] D.Howell,&K.Olsen, ”Distress-the 6th vital sign. ” Current Oncology vol.18, no.5, p208-210 2010.

[13] G. Luigi, R.Elena, C.Rosangela, G.N.Maria, P.Stefania, S.Stefania,& S S.ilvana,”Educational intervention in cancer outpatient clinics on routine screening for emotional distress: An observational study”. Psycho-Oncology, vol.20,no.6,p669-674. 2011.

Yi-Ting Liu was born in Taoyuan, Taiwan in 1975. She graduated from School of Nursing, Chang Gung University with a master degree in advanced adult nursing care in 2010. She had worked for Chang Gung Hospital for 4 years from 1995, and then joined Landseed Hospital as a nurse practitioner in her hometown Taoyuan. In 2004, she joined the Taipei Tzu Chi Hospital, The Buddhist Tzu chi Medical Foundation, New Taipei City, Taiwan. Currently, she is a supervisor for department of nursing at Taipei Tzu Chi Hospital and an adjunct instructor at Tzu Chi University of Science and Technology.

Kai-yen Chang was born in Taipei, Taiwan in1978. She graduated from School of Nursing, Fu Jen Catholic University with a master degree in advanced psychiatric nursing care in 2008. She had worked for Chang Gung Hospital for 4 years from 1999, and then joined Cardinal Tien Hospital as a nurse practitioner. In 2010, she joined the Taipei Tzu Chi Hospital, The Buddhist Tzu chi Medical Foundation, New Taipei City, Taiwan. Currently, she is a psychiatric ward Head nurse.