

## The benefit of clinical psychologists in prevention from the suicide in one hospital in Taiwan, Republic of China

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**Abstract:** Purpose: To investigate the suicide intention by using the 5-items Brief Symptoms Rating Scales (BSRS) to screen high risk of patients with suicidal intention and compare the benefits from clinical psychologists. Methods: All 80 patients with BSRS score > 10 were advised to be hospitalized and were divided into 4 groups. In group 1 (n = 17), patients with score > 15 received the care from psychologists. There were 23 patients in group 2 (n = 23; total BSRS > 15) without psychologist's help. 16 subjects with score  $\leq 15$  (> 10) in group 3 did not seek help from psychologists. In group 4 (n = 24), they had lower score ( $\leq 15$ , but > 10) with counseling from psychologists. We compared the score change in the 4 groups. **Results:** In group 1, the mean score was  $17.7 \pm 0.2$  before admission, and the mean score after therapy was  $9.9 \pm 0.8$  ( $P < 0.05$ ). In group 2, the mean score was  $11.4 \pm 0.2$  before therapy, and the mean score after therapy (without psychologist's help) was  $9.5 \pm 0.2$  ( $P > 0.05$ ). In group 3, the score showed  $16.9 \pm 0.4$  before admission and it revealed  $13.9 \pm 0.8$  ( $P > 0.05$ ) after medical care. There are  $13.3 \pm 1.2$  and  $7.9 \pm 0.2$  in score before and after therapy with help from specialized clinical psychologists ( $P < 0.05$ ). This data was all corrected after one month. The results demonstrated that the total BSRS score and the incidence of suicidal ideation decreased apparently after the medical care from clinical psychologists in spite of the level of score. Conclusion: We strongly suggested that clinical psychologists may engage in patients care and are considered as the important role of the medical team work in any hospital, especially, in engaging in behavioral and psychological problems.

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### 1. Introduction

Suicide becomes an important public health problem worldwide and one of the leading causes of loss life. To our surprised, the rate even exceeded those of deaths from motor vehicle accidents now. It has been the 9<sup>th</sup> leading causes of death by the report of Taiwan Department of Health in ROC since 1997 [1]. Many studies demonstrated that the suicidal behavior is a complex process progress that involves a series of pathways and mechanisms from the initiation of ideation, to planning, and finally, to attempting suicide [2,3]. The lifetime prevalence of suicide attempts is around 5% [4,5]. Besides, the issue of suicidal ideation is also highly prevalent in the community. The most common surveys revealed that 10-14% of across a lifetime, 2.3-14.6% within 12 months of survey which has a close link to completed suicide [6,7]. Some articles revealed that the presence of anxiety and depressive disorders may elevate the

higher risk of suicide attempts and completed suicide [8,9]. An increased risk of the suicidal behavior has been associated with race, gender, age, unemployment, living circumstances, family history of suicide attempts, psychiatric disorders (eg. schizophrenia, major depression, et al), systemic diseases, cancers, co-morbidity with substance abuse and lack of support [10,11,12]. Besides, hopelessness and despair were found [13]. Even the biochemical level about lower vitamin D also may induce suicide with little sunlight exposure [14].

Suicides in people really increased recently in the world. Much effort has been focused on suicide prevention and treatment, as well as understanding the reasons for the sharp increase in suicidal behavior. Unfortunately, the identifying protective factors for suicide risk are also uncertain which need further evaluation and study. In Taiwan, the rate of attempted suicide was also higher than ever in spite of

aggressive prevention plan from the government, however, the phenomenon still persisted. Now how to avoid suicide in Taiwan became an important issue recently. Therefore, the aim of our study was to investigate the suicide intention by using the 5-items Brief Symptoms Rating Scales (BSRS-5) to screen higher risk of the patients with suicidal intention in outpatient clinics and advise them to be hospitalized. During the wards, we also compare the mental condition of the patients by checking the total scores again after support from medical staffs including the clinical psychologists. At the same time, the benefits of BSRS-5 score and the role of clinical psychologists in treating suicidal patients were also discussed.

## 2. Material and Methods

Informed consents were obtained from all participants who were conducted in accordance with the Declaration of Helsinki. The total study was done in Kaohsiung Armed Forces General Hospital (Kaohsiung, Taiwan, ROC) from January 2012 to October 2012. Total 100 subjects (50 males and 50 females) in the department of psychiatric clinics in our hospital were enrolled in this study firstly. The subjects were aged between 18 and 60 years (mean age was  $38.9 \pm 0.5$  years). In the clinical, all 100 patients were instructed to measure the BSRS-5 score carefully. When considering BSRS-5 as a screening instrument for suicidal ideation, soldiers with total BSRS score  $> 10$  and was advised to admission for close-follow.

BSRS-5 is a five-item, self-reported questionnaire in which a higher score indicated poorer mental health. In Taiwan, it is even popular and used for the survey of suicidal ideation and attempted effectively [15,16]. Different cut-of points and predictive BSBR-5 symptoms were found for suicidal intention and attempted in the psychiatric, community and general group. A short and precious instruction before the description of symptoms was given to the respondents to ensure validity, and to guild them in rating the degree to which they felt discomfort from each item during the past week. The full scale contained the following 5 items of psychopathology: (1) feeling tense of keyed up (anxiety); (2) feeling blue (depression); (3) feel easily annoyed or irritated (hostility); (4) feel inferior to others (inferior); and (5) having trouble falling asleep (insomnia). The soldiers were asked to rate symptoms on a five-point Likert-like type scale, as follows: 0, not at all; 1, a little bit; 2, moderately; 3, quite a bite; 4, extremely, and a total score was calculated for each subject. Besides, an addition question, "Do you have any suicidal ideation?" was added at the end of the questionnaire. If the answer is "yes", we will force this soldier to be admitted in spite of their rejection for patients' safety.

All the subjects had no any systemic diseases such as hypertension, DM and autoimmune disorders. In the first screen from these 100 cases, 80 patients owned the total BSRS score  $> 10$  and they were advised to be hospitalized and they were divided into 4 groups for study randomly. In group 1 ( $n=17$ ), all patients with total score  $> 15$ , the clinical psychologists were involved in the medical care. There were 23 patients in group 2 ( $n=23$ ; total BSRS  $> 15$ ) without the help from clinical psychologists. 16 subjects with total score  $\leq 15$  ( $> 10$ ) belonged to group 3. The patients should not seek medical help from clinical psychologists. In group 4 ( $n=24$ ), they had relatively lower total BSRS score ( $\leq 15$ , but  $> 10$ ) with counseling from clinical psychologists. In other word, only the patients in group 1 and 4 had consulted the clinical psychologists. Finally, we compared the score change in 4 groups for evaluating that whether patients with higher BSRS score may gain benefit from the clinical psychologists or not after one month. In addition, we also wanted to understand the change of rate of suicide attempted or intention after the medical help from the psychologists. All results are expressed as mean  $\pm$  SD. The statistical analyses were performed using IBM SPSS statistics version 21 (IBM Corp., Armonk NY). Paired t test was used to compare the total BSRS-5 score before and after treatment in each group. Besides, we all use the generalized estimating equation (GEE) method to compare the outcome after the treatment from clinical psychologists. When the  $p$  value was lower than 0.05, it was considered as statistically significant.

## 3. Results

Total 80 patients were enrolled in this study and were asked to be admitted for safe concern of the possibilities of suicide. When these cases were hospitalized, the medical team work including the psychiatrists, nurses, social workers, occupational therapies and clinical psychologists may cooperate together. In group 1 ( $n=17$ ), the mean score was  $17.7 \pm 0.2$  before admission, and the mean score after treatment was  $9.9 \pm 0.8$  ( $P < 0.05$ ). In group 2 ( $n=23$ ), the mean score was  $11.4 \pm 0.2$  before therapy, and the mean score after therapy (without psychologists involvements) was  $9.5 \pm 0.2$  ( $P > 0.05$ ). In group 3 ( $n=16$ ), the mean score was  $16.9 \pm 0.4$  before admission, and the mean score after treatment (without help from psychologist) was  $13.9 \pm 0.8$  ( $P > 0.05$ ). There are the mean score  $13.3 \pm 1.2$  and  $7.9 \pm 0.2$  before and after hospitalization with help from specialized field of clinical psychologists ( $P < 0.05$ ) in group 4 ( $n=24$ ). All the mean follow up time is about 1 month (table 1).

**Table 1.** Results of total BSRS score before and after medical treatment in one hospital

	Pre-treatment	Post-treatment	P
Group 1	17.7 ± 0.2	9.9 ± 0.8	*
Group 2	11.4 ± 0.2	9.5 ± 0.2	
Group 3	16.9 ± 0.4	13.9 ± 0.8	
Group 4	13.3 ± 0.8	7.9 ± 0.2	*

Patients in group 1 and 4 may gain medical care from the clinical psychologists \* $P < 0.05$ , significant.

We further compared the change of total BSRS-5 score in admitted patients without considering the level of score between clinical psychologists involved (group A) and non-involved (group B). The group A (group 1 and 4) contained 41 subjects with the mean score  $15.1 \pm 2.2$  in the pre-treatment period (25 subjects said "yes" in the addition question in evaluation of suicidal ideation) and the group B (group 2 and 3) with 39 subjects involved which revealed mean score  $15.0 \pm 1.2$  prior the therapy (21 cases had idea to suicide; 21/39). After one month, the same admitted patients were evaluated again. In checking total BSRS-5 score, it revealed that  $8.9 \pm 0.5$  in the group A and  $11.5 \pm 1.2$  were found after medical care. Under the GEE method, the significant change was found in group A ( $P < 0.05$ ) (table 2). Besides, the rate of suicidal ideation was 60% (25/41) in group A and 53% (21/39) in group B before admission. After the support from clinical psychologists, the incidence of suicidal ideation was significantly lower (22.4%; 10/41) in group A. Nevertheless, the suicidal ideation also remained relatively higher in group B (41%; 16/141) without help by psychologists using ANOVA analysis ( $P < 0.05$ ) after one month.

**Table 2.** Results of total BSRS score with or without evaluation and medical counseling from the clinical psychologists

	Pre-treatment	Post-treatment
Group A	15.1 ± 2.2	8.9 ± 0.8*
Group B	15.0 ± 1.2	11.5 ± 0.2

Patients in group A had got medical counseling from the clinical psychologists \* $P < 0.05$ , significant.

#### 4. Discussion

Over the past 20 years the WHO has considerably improved world mortality data. There are still shortcomings but more countries now report data and world-wide estimates are regularly made. About 0.5% - 1.4% of the population should die from suicide. We found that one victim of death may experience during 10 - 40 cases suicidal ideation and attempt. Besides, according to the data, suicide had

enrolled in the top 10 of death causes between 2008 and 2009. In addition, the 800,000 - 1,000,000 peoples died every year [17]. The significantly increase of the suicide happened in the developing countries in the past, however, the well-developed countries had the similar situation [18]. The estimated prevalence of suicidal ideation in the general population ranges widely from 2.3% to 14.6% for one-year suicidal ideation and from 10% to 14% for lifetime [19,20,21]. In Taiwan, a Nation Census of Mental Health was conducted in 2003-2005 with a representative sample, with face-to-face house-hold interviews with subjects aged  $\geq 18$  years. The results revealed the weighted prevalence of suicidal ideation to be 7.41% across a lifetime, and 1.81% in the previous 12 months [22].

According to several reports from World Health World (WHO), the mean 1.3 million people died because of suicide in each year. In the same time, the 70% of cases happened in Asian and the most victims were noted in Southern Korean. Besides, suicide is also the second leading cause of death among 25 to 44 year olds in the US, claiming over 30,000 lives annually. In Taiwan, the mean number of 4,000 people died due to suicide in 2011. Besides, 1.75 million people had the suicidal ideation, four hundred thousand human had tried to suicide and two hundred thousand people were the victims of suicidal attempted at least twice in one year. The risk factors of suicide include mental disorder (eg. major depression, schizophrenia and bipolar disorder), drugs abuse (eg. sedative, cocaine, heroin, methamphetamine and cannabis), acute substance intoxication, alcoholism, grief, psychological etiologies (personality disorder, posttraumatic stress disorder), deliberate self-harm, brain injury, sexual abuse, genetic factor, information from media (newspapers, TV, and even internet), culture background, family factor (unmarried, single, marital breakdown, loss of their lovers, childhood abuse), eating disorder, various types of pain, chronic diseases (eg. Patients with cancer, AIDS, SLE, or receiving hemodialysis), the socio-economic factors (eg. financial crises, legal difficulties, poor, loss of job, or homelessness) and occupation (eg. occupational stresses, draftees, military personnel or war veteran with post-traumatic stress disorder) [22,23,24,25,26,27,28,29,30,31,32,33,34,35,36].

When the patients were found to have the tendency to suicide attempt, 27-90% of they were diagnosed as the victims of mental disorders during the occurrence [37]. Even though the young peoples were the major victims, sometime the older man and women, especial in psychiatric mood, were also the high risk group [38]. Some studies also examined the associations between suicidal behavior and chronic diseases

(including CVA and various cancers) among the individuals aged 65 and older in later life [39].

Indeed, the mood and psychiatric problems are the highest frequencies associated with suicide. Major depression and bipolar disorder is the most common cause of suicide complete and it showed 20 folds of rate of than other etiologies. Half of these patients may die from suicide during the hospitalization. 20% of the suicide may have the suicidal ideation and suicide attempt within one year. Then, 5% of these patients may die from complete suicide after 10 years [40,41]. In the modern society, the frequently excessive drinking in social activity may induce the physiological and psychiatric problems. Youssef et al. demonstrated that the 15 % - 60 % of the patients with suicidal intention and attempts were found as associated with alcoholism [26]. Casey and his workers showed that the increasing rare of alcoholism and higher concentration of wine were the high risk of suicide [20]. According to the study of Sher, only distilled spirit play an important role in suicide ideation and attempts [42]. He also proposed that the characteristic of suicidal ideation from the alcohol abuse was male, older age and suicide attempt in the past. Constructs related to aggression and impulsivity confers additional risk for suicidal behavior in people with alcohol dependence. Alcohol may be important in suicides among individuals with no previous psychiatric history. Alcohol dependence is an important risk factor for suicidal behavior. Therefore, Chang et al. had strongly proposed that the way to prevention from the alcoholic abuse may decrease the incidence of suicide [43].

Pathological gambling represents a major public health issue. Interesting, the passion for gamble was also one of the risk factor. 12 - 24% of the pathological gamblers may own the suicidal ideation. The link between pathological gambling and suicide is poorly understood now. The relationship may be due to co-exist of the problems of mental disorder, alcoholism and drug abuse. Hodgins et al. found that those experiencing ideation were also more likely to over gamble on gambling days. Beside, the habitual gamblers' half even had the three folds of suicidal ideation than normal population [44,45]. More research on the relationship between alcohol and other drug disorders and their complex relationship to pathological gambling and suicide is crucial.

Suicide in late life is an enormous public health problem that will likely increase in severity because of the decay of whole body in physiological and psychological condition [46]. In general population, suicide risk was higher among men with cancer as compared with women with cancer. Patients aged 65 years or older with cancer have a higher rate of suicide compared with those younger than 65 years,

with rates highest among men 80 years or older [31]. The Specific diagnoses associated with higher suicide rates include prostate, lung, pancreatic, and head and neck cancers. The first year after diagnosis carries a higher risk for completed suicide. The victims with cancers may be associated with depression or hopelessness which is also higher factors about suicide. The similar condition was also found in the patients who need to receive the long-term and regular hemodialysis. The incidence of suicide in someone with a cancer diagnosis is approximately double the incidence of suicide in the general population. Early detection of depression in cancer populations may help identify those at suicide risk [47]. In addition; the sleep problem sometime bothered the healthy peoples and further induced the possibility of suicide [48].

The first treatment for the suicide is to prevent from the ideation of the victim. Now how to solve the suicide ideation and attempt highlights various researchers [49]. At first, the clinicians must search for the many underline and potential risk factors. For example, the psychiatrists may use some medication to handle the condition [50]. Pharmacological treatment showed that the atypical antipsychotics (especially clozapine) may reduce the risk of suicide and lower overall the suicidal behavior [51]. In addition, the non-attempters more frequently received antipsychotics combined with mood stabilizers or benzodiazepines which may effectively the patient with depressive moods, In addition, mood stabilizers also have effects on impulsiveness and aggression, whereas benzodiazepines also have effects on impulsiveness, anxiety, insomnia and agitation. Therefore, it is used to treat the suicidal ideation and attempt [52]. Lithium is the only other drug that has been to prevent suicide and is primarily used in patients with bipolar disorder [43,50]. Recently several articles showed that the use of antipsychotics combined with anti-depressants (selective serotonin receptor inhibitors; SSRI) not only ameliorate depressive symptoms in patients with schizophrenia, but they also appear to attenuate suicidal thoughts [50,53]. Further researches are needed to evaluate for treating effectively the suicidal attempters by new and well-developed drugs.

Environmental interventions, such as reduction in the number of bars and diminishing the gain of shoot may be helpful in reducing alcohol-related morbidity, including suicides in military troops. The psychological counselors may realize that irresponsible media reports can provoke suicidal behaviors (called the 'Werther effect'). Strong media reports maybe tend to exaggerate sensational suicides in young persons [54]. Besides, regional belief was considered as another method to decrease the occurrence of suicide. For instance, suicide rates do

appear to be lower in Muslims than in those of other religions, even in countries where such behavior is illegal [55]. Koenig demonstrated that religious beliefs and practices can represent powerful sources of comfort, hope, and meaning, they are often intricately entangled with neurotic and psychotic disorders, sometimes making it difficult to determine whether they are a resource or a liability [56]. Therefore, all the religionists may be expected to do their best to help those who with suicidal ideation and attempt.

The role of clinical psychologists in any hospital is essential for the patients with suicidal ideation. To our knowledge, the clinical psychologists should provide psychotherapy, psychological testing, and diagnosis of mental illness. Their jobs are related to psychological assessment and psycho-therapy [57]. They also take part in patient care, research, teaching, consultation, forensic testimony, and program development and administration. They did not focus on the psychological assessment, but also supply the suggestion about how to treat in psychiatric clinics. The role of clinical psychologists may require to have the knowledge for the purpose of understanding, preventing, and relieving of psychologically-based distress or dysfunction and to promote the subjective and behavioral well-being and personal development. Sometimes, they must design plan the clinical post-doctoral programs in which they might specialize in disciplines such as psychoanalytic approaches or child and adolescent treatment modalities. Many continue clinical training in post-doctoral programs in which they might specialize in disciplines such as psychoanalytic approaches or child and adolescent treatment modalities [58,59].

They are excellent in psychodynamics, humanistic, cognitive-behavior therapy (CBT) and systemic or family therapy. Recently, they are required to realize the multicultural and diverse populations and emerging privileges to prescribe psychotropic medication. Approximately 20% of clinical health psychologists identify themselves as counseling psychologists as well. For example, CBT would be required to determine its ability to reduce suicide risk among young people presenting to clinical services [60]. In our hospital, when the total scores of BSR5-5 item of soldiers is greater than 10, the military personnel must be required to be admitted for further care and monitoring. In our experiment, the cases who acquired from the clinical psychologists, the total scores may decrease. In other words, the medical team include clinical psychologists may reduce the incidence of suicide of soldiers.

The optimal clinical care can make a difference and reduce suicide. There is no magic clinical bullet currently available that could relapse excellent clinical

care, which remain the centerpiece of treatment of suicide persons [61,62]. Many countries have set targets for suicide reduction, and suggested that mental health care providers and general practitioners have a key role to play. Up to 41% may have contact with psychiatric inpatient care in the year prior to death and up to 9% may commit suicide within one day of discharge. Among those who die by suicide, contact with health service is common before death. This is a necessary but not sufficient condition for clinicians to intervene.

Nearly 80% of the patient who completed suicide had visited the psychiatrist or psychologists and 45% of these patients had sought for the associated medical help. Another study showed that 25 – 40 % subjects who completed suicide within one year had tried to receive the mental health care [63]. Therefore, more work is needed to determine whether these people show characteristic patterns of care and particular risk factors which would enable a targeted approach to be developed to assist clinicians in detecting and managing high-risk patients [64].

## 5. Conclusion

In our study, we could find that the groups of patients with the help and consultation from the psychologist may stabilize their emotion and behavior, diminish anxiety and depressive mood, and decrease the inferiority and hostility. Besides, the rate of suicide intention also decreased. Therefore, the professional suggestion from psychologists should be benefit for the patients with suicidal ideation and attempt. Besides, the BSR5-5 item is an efficiency to determine and screen the suicidal ideation and behavior which is corresponding to previous reports [65,66].

The most areas of expertise for many clinical psychologists are assessment about the patients. Most of them may utilize this core clinical practice to take care about the suicidal intention and attempted soldiers. Thus, we strongly suggested that clinical psychologists may engage in patients care and are considered as the important role of the medical team work in any hospital, especially, at the department of psychiatry to engage in the treatment regimen about psychological or behavioral problems.

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