Research Article

Disparity of Suicide Knowledge Needs between Different Nursing Specialties and Ability in Suicidal Handling Training

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Abstract

Background: Suicide is an issue of concern in public health in Taiwan, and it is necessary to establish suicide prevention education among healthcare professionals. **Objective and Methods:** This study aimed to explore the current state of clinical ability and suicide knowledge needs in different nurse departments in Taiwan. 291 nurses, including 60 nurses from ICUs, 23 from emergency rooms, 45 from medical departments, 30 from surgical, 29 from psychiatry, and 59 from general wards, and 45 from others, were recruited from a teaching general hospital in Southern Taiwan. **Results:** Via structural equation modelling (SEM) analysis, being an emergency room nurse, psychiatric nurse, or ICU nurse was found to have a direct positive effect on one's ability to deal with suicidal patients. Only psychiatric nurses and general ward nurses had continuously received suicide prevention training. Interestingly, all emergency room nurses, psychiatric nurses, and ICU nurses had increased their suicide prevention knowledge through their clinical executive experience. **Conclusion:** Nurses tend to have clinical executive ability, but they think suicide prevention training is not needed, particularly emergency room nurses and surgical nurses. However, some of them increased their knowledge of needs of suicidal patients through clinical executive experience. The current study is a pilot study to understand the needs related to suicide prevention education for different nurse departments in Taiwan.

Keywords: Suicide prevention education program; Nurses; Clinical executive ability; Professional knowledge needs

Abbreviations: SEM: Structural Equation Modelling; BSRS-5: The 5-item Brief Symptom Rating Scale; RMSEA: Root Mean Square Error of Approximation; GFI: Goodness-of-fit Index

Introduction

Suicide is an issue of concern in public health, and it is a leading cause of death worldwide, which can be preventable [1]. Suicide is a major public health priority, defined as a self-injurious behaviour to intentionally terminate one's own life [2-4], and it is believed that suicide attempt is a crucial risk related to preceding suicidal behaviours [5]. Different disciplines have different needs in terms of understanding and preventing suicide. Chang and colleagues proposed that different preventive programs and models might be considered for different types of suicidal behaviour [2]. Indeed, the factors contributing to suicide are multiple and complex. Many

authors believe that one or more prior suicide attempts are an important predictor of death through suicide [6-9].

Since the early 1990s, the World Health Organization (WHO) have committed to the search for and development of effective suicide prevention strategies [10]. In general, the rate of attempted and completed suicides is higher among psychiatric patients than among general patients, due to the high association of suicide with mental health problems [11-13], and it is also acknowledged that psychiatric professionals are the most competent when it comes to dealing with patients with suicidal behaviours [14]. Hence, suicide prevention programs always focus on psychiatric departments and hospitals [15]. However, nurses working in general hospitals are the healthcare professionals who are on the frontlines and who could represent the greatest opportunity to identify and treat self-harming and suicidal patients [12,13,16-19], especially nurses in Accident and Emergency Departments [20-25]. In a previous study, psychiatric department workers in hospitals and in the community were found to tend to have a more positive attitude toward patients who had attempted suicide or self-harm than other professional workers, and particularly, nurses presented more positive attitudes than physicians [26]. For nurses, both general and psychiatric, it is a particular challenge to provide appropriate care to patients who have attempted suicide and exhibited suicidal behaviours due to their lack of awareness, knowledge, and attitudes toward suicide [13,20,22,27-29].

Generally speaking, general nurses receive little to no formal training on suicide prevention or intervention [13,16,17,21,22,28-30]. Patients who attempt suicide and/or exhibit suicidal behaviours frequently receive inappropriate treatment because of the lack of knowledge and poor attitudes toward suicide of hospital professionals [16,31]. In 1999, Repper claimed that knowledge and attitudes are crucial factors in suicide prevention for healthcare professionals [32]. It is believed that suicide is one the most preventable causes of death globally, and hence, suicide prevention is acknowledged as an essential course of training for nurses, regardless of their specialties [19,31].

Sometimes, patients who attempt suicide or exhibit suicidal behaviours are more likely to face criticism and condemnation from hospital professionals than receive sympathy and help [33]. Nurses often experience feelings of anger, uncomfortableness, and frustration while caring for patients exhibiting suicidal behaviours [34-36]. These attitudes and responses could strongly affect the willingness and ability of nurses to provide appropriate and effective care [34-38]. It is believed that nurses who are older, have a higher level of education, and are more experienced tend to have more positive attitudes toward patients with suicidal behaviours than younger and less experienced nurses [35,39]. These findings explain the implications of improving suicide prevention related to awareness, knowledge, and attitudes of nurses. Additionally,

preparing further education and training on suicide prevention for nurses is believed to be very important, be they nurses from psychiatric or general units.

In 2005, a suicide prevention center was established aimed at carrying out suicidal intervention in the Taiwanese community [40]. Several scholars and professors have also developed suicide prevention programs for nurses to improve their knowledge and ability in Taiwan [28,29,41]. However, it seems that insufficient knowledge and competence when it comes to suicide prevention are still prevalent among non-psychiatric nurses in general hospitals. This study aimed to explore the current state of clinical ability and suicide knowledge needs in different nurse departments in Taiwan.

Methods

Participants

The Institutional Review Board (IRB102-63) approved the study and, following an explanation, written informed consent was obtained directly from all participants. A total of 291 nurses, with a mean age of 33.40 years old (SD=8.848), including 60 ICU nurses, 23 emergency room nurses, 45 medical nurses, 30 surgical nurses, 29 psychiatric nurses, 59 general ward nurses, and 45 others, were recruited from a teaching general hospital in Southern Taiwan. All nurses completed the 28-item questionnaire related to clinical competence in suicide intervention, which included questions on clinical executive ability and professional knowledge needs, and the 5-item Brief Symptom Rating Scale (BSRS-5). The participants completed both questionnaires within around 10–15 minutes.

Instruments

Clinical Competence in Suicide Intervention-28 items

The clinical competence in suicide intervention questionnaire was developed by Kang and Rong [42], based on six essential items on clinical competence in suicidal/self-harm intervention [43]. The essential items included: 1) being familiar with suicide-related theory; 2) being able to completely assess the risk of suicidal behaviour in patients; 3) having the ability to assess suicide risk; 4) being able to prevent and safely treat patients' suicidal behaviour, and assist them in recovering self-control and coping with others through appropriate care; 5) having the ability to carry out suicide prevention; 6) being able to record all matters and indicators of suicide-related disposition. Following a discussion and evaluation among five experts, 28 items on clinical executive ability and professional knowledge needs were created. The content validity is 0.96-1.0 with 0.632 of retest reliability, and 0.81-0.93 of Cronbach's alpha co-efficient of reliability [43].

Five-Item Brief-Symptom Rating Scale (BSRS-5)

The BSRS-5 is a five-item valid screening tool, which is

derived from the 50-item Brief Symptom Rating Scale [44], for the prediction of suicidal ideation in different settings. This self-report survey requires respondents to answer whether they have felt tense, blue, irritated, inferior, had trouble falling asleep, or had any suicide ideation in the past week [45]. An additional question, "Do you experience suicidal ideation at all", was added at the end of the questionnaire. These responses were rated on a five-point Likert-type scale of 0 to 4, with 0 being not at all and 4 being extremely. The optimal cut-off points of 4/5 for psychiatric patients, of 7/8 for community, and of 12/13 for the general medical population resulted using the receiver operating characteristic curve [45]. The BSRS-5 has demonstrated good reliability and validity [45].

Statistical Analysis

AMOS for Windows 26.0 statistical software package (SPSS, Chicago, IL, USA) was used to apply a structural equation model (SEM) and to construct several theoretical models of variables analysed in this study. Descriptive analysis of demographics and regression was performed using SPSS, and structural equation analysis was performed using AMOS for Windows version 26.0 (SPSS Inc.). SEM techniques made use of all the variables provided by the regression techniques and path analysis. The chi-square fit test was used in structural equation modelling to investigate the overall fit of the model. A non-significant chi-square value ($p > .05$ and goodness-of-fit $> .9$) and a root mean square error of approximation (RMSEA) of $\leq .08$ indicate that a model describes the observed data adequately [46].

Results

A total of 291 nurses, including 60 ICU nurses, 23 emergency room nurses, 45 medical nurses, 30 surgical nurses, 29 psychiatric nurses, 59 general ward nurses, and 45 others, were recruited. Descriptive analysis of demographic information including age, education, service (years), scores of BSRS, clinical executive ability, suicide knowledge needs, and suicide prevention training among nurses from different departments are presented in Table 1.

Variables	ICU	ER	Medical	Surgical	Psychiatric	General ward	Others
Education	(N)	(N)	(N)	(N)	(N)	(N)	(N)
College	8 (9.76%)	3 (3.66%)	13 (15.85%)	6 (7.32%)	9 (10.98%)	26 (31.71%)	17 (20.73%)
University	46 (23.83%)	19 (9.85%)	31 (16.06%)	23 (11.92%)	17 (8.81%)	30 (15.54%)	27 (13.99%)
Master or PhD	6 (37.5%)	1 (6.25%)	1 (6.25%)	1 (6.25%)	3 (18.75%)	3 (18.75%)	1 (6.25%)
Suicidal training	(N)	(N)	(N)	(N)	(N)	(N)	(N)
without training	47 (28.31%)	10 (6.02%)	29 (17.47%)	20 (12.05%)	4 (2.41%)	28 (16.87%)	28 (16.87%)
with training	12 (14.12%)	9 (10.59%)	15 (17.65%)	9 (10.59%)	9 (10.59%)	21 (24.71%)	10 (11.76%)
have had training of more than 8 hours	1 (8.33%) 0	3 (25%) 1 (3.57%)	1 (8.33%) 0	0 1 (3.57%)	0 16 (57.14%)	5 (41.67%) 5 (17.86%)	2 (16.67%) 5 (17.86%)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Age (years old)	31.38 (6.12)	36.48 (6.12)	31.62 (8.89)	31.70 (8.55)	35.31(10.65)	34.15 (8.16)	35.20 (10.66)
Service (years)	8.58 (5.80)	13.75 (9.07)	8.94 (8.06)	8.67 (8.93)	12.13 (11.28)	11.84 (8.77)	16.92 (7.58)

BSRS scores	6.03 (3.92)	6.22 (4.98)	4.33 (3.02)	5.70 (5.16)	6.72 (5.61)	4.44 (4.08)	3.73 (3.44)
Clinical executive ability scores	109.67 (12.46)	110.61 (7.30)	113.56 (9.13)	108.83 (6.80)	120.93 (11.59)	114.88 (12.72)	113.56 (7.04)
Suicide knowledge needs scores	77.80 (23.12)	106.30 (8.35)	98.13 (14.46)	96.67 (18.03)	114.66 (9.39)	94.34 (16.88)	93.31 (18.74)

Table 1: Demographic information for nurses from different departments.

Linear regression analysis showed that those who had undergone suicide prevention training and had clinical executive ability had significant associations with suicide knowledge needs. Individuals with suicide prevention training and different department nurses had significant associations with clinical executive ability. The results are shown in Table 2. However, moderating and mediating factors may have been neglected, and therefore, further path analysis using structural equation modelling is needed to explore the pathway of variables related to suicide knowledge needs and clinical executive ability.

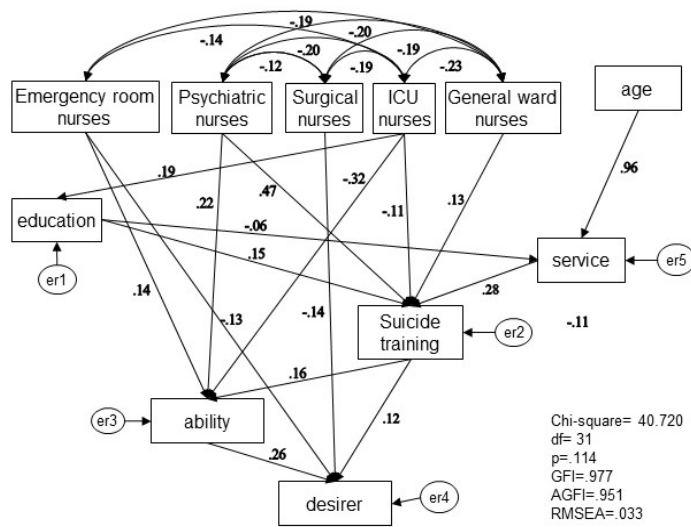| Suicide Knowledge Needs			
Variable	**β**	**t**	**p**
Suicidal training	0.139	2.318	.021
clinical executive ability	0.223	3.718	.000
Suicidal Training: including individuals without suicidal training, individuals with suicidal training, individuals with suicidal training more than 8 hours. **Dependent variable:** suicide knowledge needs.			

Clinical Executive Ability			
Variable	**β**	**t**	**p**
Suicidal training	0.322	5.755	.000
Department nurses	0.141	2.513	.013
Department Nurses: including ICU, ER, medical, surgical, psychiatric, general ward department nurses, and others. Dependent variable: clinical executive ability			

Table 2: Linear regression analysis for factors related to clinical executive ability and suicide knowledge needs for nurses from different departments.

Using structural equation modelling (SEM) analysis, the parsimonious model presented a p value greater than 0.05 (p = 0.114); both of the p values of the Goodness-of-fit Index (GFI = 0.977) and Adjusted Goodness-of-fit Index (AGFI = 0.951) were greater than 0.9, and the Root Mean Square Error of Approximation (RMSEA = 0.033) was less than 0.8. Hence, the null model corresponded to the conceptual construct. These results showed emergency room nurses, psychiatric nurses, surgical nurses, ICU nurses, and general ward nurses have significant differences in this model. Being an emergency room nurse, psychiatric nurse, or ICU nurse had a direct positive effect on their ability to deal with suicidal patients ($\beta_{emergency}$=0.14, p=0.005; $\beta_{psychiatric}$=0.22, p<0.001); by contrast, being an ICU nurse had a direct negative effects on that ability (β_{ICU}=-0.32, p<0.001). However, being an emergency room nurse or surgical nurse had a direct negative effect on desire (acknowledging the need to improve their knowledge of suicidal patients' needs) ($\beta_{emergency}$=-0.13, p=0.023; $\beta_{surgical}$=-0.14 p=0.010). Only psychiatric nurses and general ward nurses had continuously received suicide prevention training ($\beta_{psychiatric}$=0.47, p<0.001; $\beta_{general\ ward}$=0.13 p=0.011), with ICU nurses having never received any such training (β_{ICU}=-0.11 p=0.033). Additionally, psychiatric nurses and general ward nurses tended to have a better ability to deal with and knowledge of needs of suicidal patients through suicide prevention training. Interestingly, all emergency room nurses, psychiatric nurses, and ICU nurses were found to increase their knowledge on suicide prevention through their clinical executive experience. In addition, being older and having a higher level of education tended to have an indirect positive effect on knowledge of suicidal patients' needs and clinical executive ability through suicide prevention training. The results are shown in Figure 1.

Figure 1: The parsimonious model of suicide ability and knowledge needs in different nurses departments through suicide prevention training. **GIF:** Goodness-of-Fit Index; AGFI: Adjusted Goodness-of-Fit Index; **BSRS:** BSRS score; mental health problems; **Desirer:** suicide knowledge needs.

Discussion

In various countries, patients at risk of suicide are present in most healthcare units. Additionally, suicidal behavior is common among hospitalized inpatients in both general medical and psychiatric units. Suicidal behavior is acknowledged as an unnatural event that can be avoidable and preventable [1,5,10]. Hence, suicide prevention is an important imperative among healthcare professionals such as physicians and nurses in hospitals [19]. Since the suicide prevention center was established in Taiwan [40], several professors have also committed to offering suicide prevention training to nurses [28,29,41]. Thus, this preliminary study was to understand the current state of suicide knowledge needs and clinical ability in different nurse departments of a general hospital in Taiwan.

The nurses in the present study included nurses from the ICU, emergency room, medical department, surgical department, and psychiatric department, and so on in a general hospital in Southern Taiwan. However, only emergency room nurses, psychiatric nurses, surgical nurses, and medical nurses presented significant differences. Nurses in the emergency room, psychiatric, surgical, and medical units represent the biggest opportunities to treat self-harming and suicidal patients compared to nurses from other departments in general hospitals. They may have more experiences of intervening in suicide behaviours than others, even though they receive insufficient training of suicide prevention. That is why these nurses presented more significant differences than others did in this study.

Moreover, emergency room nurses and surgical nurses tend to be better skilled but have less knowledge of suicidal patients' needs than others. Thus, they think suicide prevention training is not needed in the beginning because of their high competence. However, all emergency room, psychiatric, surgical, and medical nurses see their knowledge of suicidal patients' needs increase through clinical executive experience. They also find that if they can receive suicide prevention training, their knowledge around suicide and their ability to deal with suicidal patients can be improved, and they can thus provide better and more appropriate treatment to suicidal patients. Consistent with the literature, nurses can improve their clinical executive competence and confidence through suicide prevention training [15,17,47].

Only psychiatric nurses were found to have received suicide prevention training in the current study. The results found that psychiatric nurses tend to be better skilled and have better knowledge of suicidal patients' needs through suicide prevention training. Someone believed that training healthcare professionals to identify and treat suicidal behaviour might help to reduce suicide rates [17]. Dealing with patients who have attempted suicide or self-harmed and with bereaved families can put a lot of pressure on clinical nurses and even be a life-threatening experience. Lung and colleagues mentioned that different professional workers experience different effects on their mental health in the face of life-threatening and daily life pressures [48]. The contributing factors included different culture values, early maternal attachment, and neuroticism. Hence, it can also be explained why different professional nurses have different coping mechanisms and needs while facing life-threatening pressures.

To achieve the goal of reducing suicide rates, training on suicide prevention has to be developed and implemented in every department of general hospitals, and long-term follow-up is necessary. This study found that that effective suicide prevention training could improve competence and knowledge of suicidal patients' needs.

In addition, negative emotions and feelings were always present among healthcare professionals when they cared for suicidal patients [49-51]. In the present study, both emergency room nurses and psychiatric nurses tended to experience a larger number of mental health problems than others. That is, emergency room and psychiatric unit nurses seem to suffer from higher levels of distress when they care for suicidal patients. Hence, it is important to provide these nurses with sufficient resources and support. Suicide prevention training also may consider teaching them how to adapt to emotional stress while dealing with suicidal patients.

The Clinical Competence of Suicide Intervention-28 items measure used in this study showed 0.96-1.0 of content validity with 0.632 of retest reliability, and 0.81-0.93 of Cronbach's

alpha co-efficient of reliability [42]. However, its internal and external validity have not been tested in any previous studies, which is a limitation. In the present study, factor analysis was confirmed using a structural equation model; however, a retest study in the same institution to verify the construction validity of Clinical Competence of Suicide Intervention-28 items need to be considered in further studies. Furthermore, using this questionnaire in different institutions to verify its appropriateness also needs to be consider.

Suicide prevention can depend on the ability of nurses to create accurate treatment and intervention plans. The development of such an educational program can help general nurses to develop the appropriate attitude and acquire the right knowledge and competence in suicide prevention and intervention. Additionally, effective intervention can result in low costs for national suicide prevention programs [17,24]. Nurses play a crucial role in suicide prevention, whether in general hospitals or in psychiatric units. Moreover, sufficient knowledge and ability and appropriate assessment capabilities [16,23,24,52] are important to identify those at risk of suicide and to prevent suicide behaviour.

In conclusion, the effectiveness of suicide prevention education and training in improving knowledge, modifying attitudes, and increasing competence of nurses is necessary in both general hospitals and psychiatric units. However, this pilot study was on nurses only from a single hospital, and this could be a limitation. In addition, the lack of appropriate reliability and validity assessment for Taiwanese population and insufficient education training seem as the limitation in the present study. This study is a preliminary study for providing the basic data to understand the status of suicide prevention education in nurses in Taiwan. In further studies, a larger sample size and the effectiveness of suicide prevention education programs for nurses need to be considered.

Ethical Approval

This study protocol was approved by the Institutional Review Board (IRB102-63) of Kaohsiung Armed Forces General Hospital.

Acknowledgements

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