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Evaluating the suicide risk–screening scale used by general nurses on patients with chronic obstructive pulmonary disease and lung cancer: a questionnaire survey

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Objectives. The aim of this study was to evaluate the interview version of the screening of risk for suicide with redefined items for the hospitalised patients.

Background. Patients hospitalised in general hospitals with physical illnesses performed suicidal acts more rapidly after admission.

Design. A two-hour screening skills training course was provided to general nurses caring for hospitalised patients. The patients were rated by trained nurses according to the screening of risk for suicide. Then, patients did self-rating of repulsion of life scale and symptom distress. The participants were 54 trained nurses and 205 patients, 76 of whom had chronic obstructive pulmonary disease and 129 had lung cancer.

Methods. The trained nurses used the screening of risk for suicide to screen patients and compared their results with their trainers within 24 hours for inter-rater consistency, followed by patients' self-rating.

Results. The inter-rater reliability between nurses and their trainers was 0·85. The screening of risk for suicide rated by nurses correlated significantly with repulsion to life and symptom distress rated by patients. There were 26·3% (20) of patients with chronic obstructive pulmonary disease and 14·0% (18) of patients with lung cancer who showed moderate-to-high suicide risk, most of them having poor social support. The nurse's score on patient with chronic obstructive pulmonary disease was higher than patient's self-rating.

Conclusions. The screening of risk for suicide was useful in alerting the general nurses to high-risk patients and the nurse' screening collected more in-depth data than patients' self-rating. It is suggested that this suicide risk–screening training should incorporate into continuing education in general hospital and the use of Screening of Risk for Suicide incorporating into new patient nursing assessment.

Relevance to clinical practice. The two-hour suicide risk–screening training could renew the general nurse skill of risk screening for the hospitalised patients.

Key words: China, nurses, nursing, screening of risk for suicide, suicide attempt, suicide risk–screening training

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Introduction

Patient suicide is a serious issue for health care organisation (Dlugacz *et al.* 2003). Patients with physical illness have two to three times higher risk of completed suicide than those without (Cheng *et al.* 2000, Dhosche *et al.* 2001). The majority of suicide patients suffered from a chronic or terminal illness with the illness being cancer, chronic obstructive pulmonary disease (COPD) or neurological disease. In particular, the following conditions may signal an increased risk of suicide: advanced age, widowed, male gender, painful, terminal, dyspnoea and symptoms poor responsive to treatment (Hung *et al.* 2000, Suominen *et al.* 2002, Fischer *et al.* 2003).

Isometsa *et al.* (1995) reported that up to 78% of suicide cases visited medical health services without mentioning suicidal thoughts. This finding indicated that medical health care professionals should alert and carefully assess patient's suicidal thoughts and manage patients' risk of suicide earlier (McNiel *et al.* 2008). However, general nurses in medical wards did not have enough preparation to do risk assessment for suicide.

The inpatients of general hospitals had less suicide expression, performed suicidal acts more rapidly after admission and used more violent suicidal methods than the psychiatric inpatients did (Cheng *et al.* 2009), such as hanging and jumping from a high place (Suominen *et al.* 2002, Sun *et al.* 2005). Also, depressed Chinese patients may present with many physical complaints, giving the clinical staff a false sense of comfort that suicidal behaviours are unlikely (Chen *et al.* 2002). Furthermore, older adults were likely to endorse somatic items and less likely to endorse cognitive and suicide items (Balsisa & Cully 2008). Heise *et al.* (2010) found that older adults often do not directly or spontaneously report thoughts of suicide. Thus, suicide is especially problematic to assess and manage for older patients in Chinese culture.

An evidence-based research indicated that nurses believed suicide could be prevented if all patients were assessed on the risk of suicide, and suicidal ideation must be regularly reviewed (Midence *et al.* 1996). Nurses play an important role in early assessment and management of suicide, but, they need valid assessment tools and proper managing strategies.

There were different methods of suicide risk assessment, such as self-rated or a structured clinical interview using a rating scale. The suicide risk assessment provided decisions on the type of treatment and early interventions for patients. For example, the high risk of suicidal inpatients who scored high on the clinical scales in general hospital reminded the nurses to motivate strategies of safety environment, intense observation and communication among medical team about patient's suicidal intention (Barre & Evan 2002, Lynch *et al.* 2008, Mcpherson 2005, Sullivan *et al.* 2005).

Although more than 20 suicide risk scales have been developed, few have been widely adopted (Rang & Knott 1997). This is because these scales could not cover all dimensions. Suicide is a complex phenomenon; thus, it is difficult to predict the risk of suicide in patients accurately (Hughes 1995, Cutcliffe & Barker 2004). Several suicide assessment scales from the literature that had good validity and reliability and easily used by nurses in the general ward are the Nurses' Global Assessment of Suicide Risk (NGASR) (Cutcliffe & Barker 2004), the Suicide Assessment Scale (SUAS) (Niméus *et al.* 2000), High-Risk Construct Scale (Cochrane-Brink *et al.* 2000), the Multi-attitude Suicide Tendency Scale (MAST) (Orbach *et al.* 1981) and Assessment of Risk for Suicide (ARS) (Haber 1997).

Cutcliffe and Barker (2004) developed the NGASR tool. It comprises 15 variables including hopelessness, a stressful life event, evidence of persecutory voices, depression, withdrawal, suicide intent, family history of psychiatric problems or suicide, history of psychosis, widow/widower, plan to commit suicide, recent relationship breakdown, suicide attempt, history of socio-economic deprivation, history of alcohol misuse and terminal illness. More weight was allocated to the variables of hopelessness, depression, plan to commit suicide, recent relationship breakdown and suicide attempt; however, the scale did not consider evaluating the methods of suicide, nor rate on the grade of lethality, such as the difference in lethality between hanging and cutting the wrists. In addition, the availability of a support system for patients was also not assessed, as suicide was often an impulsive act, which might be prevented if the support system was available. The scale also did not consider the psychosocial resources for patients.

The authors of SUAS revised the scale in 2006 and developed a five-point (0–4) self-rating scale with a total of 20 items, although it had good reliability and validity, the scale was aimed to be used by psychiatric experts. The expert interview scale took 20–30 minutes to complete. The SUAS is usually applied to assess the risk of suicide for patients with psychiatric disorders (Niméus *et al.* 2006).

The High-Risk Construct Scale was drawn on five psychological constructs including perturbation, cognitive constriction, adamancy, lethality and reasons for living. The scale uses the assessment of suicide risk for emergency patients to determine admitted; however, the assessment of these abstract psychological axes with limited interaction was often constrained to the subjective bias and skills of the interviewer, which lead to loss of objectivity (Cochrane-Brink *et al.* 2000).

The MAST is a self-rating scale and consists of four domains including attraction to life (AL), repulsion to life, attraction to death (AD) and repulsion to death (Orbach *et al.* 1981). The repulsion of life subscale deal with suicide tendency and is an important predictive factor of self-destruction (Osman *et al.* 2000). However, patients rated themselves as less suicidal than did the clinician (Joiner *et al.* 1999).

Haber (1997) introduced a ARS that consists of 10 items including suicidal ideation, prior suicide attempts, suicide plan, lethality of plan, current morbid thoughts (e.g. preoccupation with death, reunion fantasies), no harm contract, current alcohol and/or drug use, behavioural symptoms (anxiety, hopelessness, helplessness, anger/rage, guilt/shame, impulsivity, isolation), support systems and coping mechanisms. The scale includes the assessment of management of available resources for patients and had specific descriptions for each point, which is an easy to assess scale (1–3 points). The scoring key: 10–13 indicating no precautions, 14–19 indicating moderate risk precautions and 20 or above indicating high-risk precautions. The scale provides a useful assessment of suicide risk for clinical nurses.

This study modified the ARS (Haber 1997) and, based on two decades of experiences in a general hospital in Taiwan, the researchers revised the scoring methods by specific behaviours and clinical performance of patients and reoriented it to the screening tool. 'No suicide risk' was changed to '0' from '1' in the original scale; therefore, the risk score was changed from a 1–3 scale to a 0–2 scale. Guns were removed from the methods of suicide because they are strictly controlled by the security department in Taiwan. Specific methods of jumping were added including jumping from a high place, jumping from a vehicle and jumping into the sea; also, poisoning by solid or liquid was added. The key scores were replaced with 0–2 indicating no precautions, 3–8 indicating moderate risk precautions and 9 or above indicating high-risk precautions. The screening scale took 8–10 minutes, providing a useful suicide risk screening and resources for early prevention.

Patients hospitalised in general hospitals with physical illnesses such as COPD and lung cancer often suffered from symptoms of coughing, chest tightness, dyspnoea, fatigue, insomnia and restlessness, resulting in loss, uncertainly, anxiety and depression. Hung *et al.* (2000) noted that these patients might have a higher risk of suicide.

In the literature, less attention was given to the suicide risk assessment for patients who suffered from severe physical illness in general hospitals. Also, rarely, nurses in general wards had received training for suicide assessment or management (Holdsworth *et al.* 2001). The major concerns might be the complex phenomenon of suicide assessment, and nurses in general wards have a large workload; it is hard to perform such a complex assessment. Thus, screening the risk factors of suicide is one step before assessment. It is important to have a suicide-screening scale that had defined rating items and specific descriptions and to use therapeutic communication skills to detect patients' actual suicide risks. Thus, the aim of this study was to develop a clinical screening scale for the nurses of general hospitals that can help them to detect suicide risk of patients.

Methods

Sample

Subjects for this study were invited in 2008 from a medical centre with 2900 beds in Taipei, Taiwan. The study was approved by Institute Review Board of this medical centre (97-10-10A). To be included in the study, subjects had to be capable of attending, understanding and responding to interview and questionnaire items. A two-hour training course including therapeutic didactic and role play was provided to the general nurses; fifty-four passed the consistency review and began to screen patients independently. These nurses interviewed their patients using the screening of risk for suicide (SRS). There were 232 patients with COPD or lung cancer who gave informed consent, and 205 patients completed the SRS, the multi-attitude suicide tendency and symptom distress (SD) scale.

Measures

Screening of risk for suicide

The research team reviewed the literature and redefined items of the SRS. The original SRS was developed by Haber (1997) for assessing patients with mood disorder. The SRS was an interview rating scale consisting of 10 items following a Likert format (0–2) and took nurses approximately 8–10 minutes to complete. These 10 items included suicidal ideation, prior suicide attempts, suicide plan, lethality of plan, negative thoughts, no self-harm contract, current alcohol and/or drug abuse, behavioural symptoms, support systems and coping strategy. Each item was scored 0–2 representing low, moderate and high risk. The SRS was reviewed for validity by five psychiatric experts with Master's or Doctor's degrees. The Cronbach' α of SRS in present study was 0·79. This scale was used for the screening 48 hours after the patient was hospitalised in this study. Plawecki and Amrhein (2010) indicated that to assess the patient accurately and completely, some level

of trust and rapport must first be created. Without gaining the patient's trust and confidence, nurses may be unable to complete an accurate assessment. Therefore, the nurses needed 48 hours to observe patient's behavioural symptoms and build a rapport with patients to get in-depth communication. Also, the explanation of the informed consent took time.

Suicide Tendency Scale

The repulsion of life subscale of the MAST was used to evaluate suicide tendency. This scale was originally designed by Orbach *et al.* (1981) by combining Beck and Freud's theory to divide the psychological conditions of those who commit suicide into four domains including AL, repulsion to life (RL), AD and repulsion to death (RD); Osman *et al.* (2000) further verified the reliability and validity. They discovered that RL was an important predicting factor for suicide ideation because it reflected the painful mental and physical experiences of the individual case and served as a driving force for the individual case towards self-destruction. There were seven questions in this subscale to be answered on a five-point Likert scale where 1 represented complete disagreement and 5 represented complete agreement. A higher score indicated the repulsion to life be higher. The Cronbach' α was 0·86 for the present study.

Symptom distress

This study used the SD scale developed by McCorkle and Young (1978) for patients with lung cancer. It was revised by Lai (1998) to include 25 symptoms appropriate to every cancer disease. The SDs consisted of 25 items including cough, chest tightness, fatigue, lack of strength/weakness, difficulty opening the mouth, poor appetite, insomnia, agitation, deconcentration, numbness, pain, thirst, defecation, to emit urine, nausea, vomiting, appearance change, abdominal distention, fever, oral or gullet pain/ulcer, quiver/unstable body temperature, pyrosis, bleeding and hearing disorder. The scores for each item range from 0–10 with 0 indicating no symptom and 10 indicating very serious and unbearable symptoms. The score increases as the symptoms worsen. This scale has been applied widely in Taiwan in cancer patients with good reliability and validity.

Procedure

This study provided general nurses with a two-hour training course (didactic and role play), using the SRS, by a senior psychiatric head nurse. After that the trained general nurses used the SRS to screen patient' suicide risk and compared their results with the psychiatric head nurse's results within 24 hours for inter-rater consistency. There were three criteria for passing consistency, including a score difference of < 2, selecting same suicide risk level and lethality of plan. A total of 55 general nurses received the two-hour training course for using SRS. Their average work experience was 4·16 (SD 4·56) years with 65·45% had bachelor degree. Forty-seven of 55 nurses (85·5%) passed the consistency review the first time and began to assess patients independently. Seven nurses who did not pass in the first round discussed their results with the psychiatric head nurse and passed in the second round. Thus, the pass rate of consistency review increased to 0·98. One nurse who did not pass decided to give up and withdraw from this study. Only after passing could patients screened by the trained general nurse be included in this study.

For each patient, the research project was explained, and the patient signed the informed consent. The rating scales were used for the screening 48 hours after the patient was hospitalised. The trained nurses interviewed the patient by using the SRS, then the patient was given the self-report MAST and SD questionnaire.

A total of 232 patients participated in this study. Among them, 10 patients could not be screened because of early discharge, two patients had their illness changed, five patients refused because of poor emotion during the interview, and 10 patients were excluded because the nurses did not pass the rating consistency. There were a total of 205 patients with a complete set of data collection.

Results

Demographic data

In total, there were 205 patients, including 76 with COPD and 129 with lung cancer. Most (98·7%) of the patients with COPD were men, with an average age of 79·5 (SD 7·2) years (52·0–92·6 years). Fifty-six (73·7%) of the patients with COPD were married, 36 (47·4%) had religious beliefs and 33 (43·4%) had a smoking history. Most (91·5%) of the patients with lung cancer were men, with an average age of 70·0 (SD 12·2) years (43·4–93·2 years). One hundred nine (84·5%) of the patients with lung cancer were married, 88 (68·2%) had religious belief and 86 (66·7%) had a smoking history (Table 1).

Suicide risk screening

Twenty (26·3%) patients with COPD showed moderate-to-high suicide risk screened by suicide risk screen scores.

Table 1 Demographic characteristics of participants $n = 205$

Variables	Chronic obstructive pulmonary disease ($n = 76$) *n* (%)	Lung cancer ($n = 129$) *n* (%)
Age (Mean ± SD)	79·5 ± 7·2	70·0 ± 12·2
Gender		
Male	75 (98·7)	118 (91·5)
Female	1 (1·3)	11 (8·5)
Marital status		
Married	56 (73·7)	109 (84·5)
Single/divorce/ widow	20 (26·3)	20 (15·5)
Religion		
Yes	36 (47·4)	88 (68·2)
No	40 (52·6)	41 (31·8)
Smoking		
Yes	33 (43·4)	86 (66·7)
No	38 (50·0)	42 (32·6)
Missing	5 (6·6)	1 (0·8)

Eight (10·5%) patients had a plan with actual method and eight (10·5%) had high lethality of plan. In terms of negative thoughts, 20 (26·3%) patients with COPD had intermittent to constant occurrence (Table 2). There were 18 (14·0%) patients with lung cancer who showed moderate-to-high suicide risk. Two (1·6%) had a suicide plan but no method and two (1·6%) had a plan of high lethality. Twenty-three (17·8%) patients displayed intermittent to constant negative thoughts (Table 2).

Those 20 (26·3%) and 18 (14·0%) patients at the risk of COPD and lung cancer were analysed. The results showed a significant difference of total scoring suicide risk between patients with COPD and lung cancer ($\chi^2 = 4{\cdot}84$, $p < 0{\cdot}05$) (Table 2). The study also revealed significant differences for prior suicide attempts, suicide plan and lethality of plan between patients with COPD and lung cancer ($\chi^2 = 7{\cdot}859$, $p < 0{\cdot}05$; $\chi^2 = 8{\cdot}304$, $p < 0{\cdot}01$; $\chi^2 = 8{\cdot}304$, $p < 0{\cdot}01$), respectively (Table 2). The patients with COPD had a higher percentage than the patients with lung cancer in prior suicide attempts, suicide plan and lethality of plan. When the social support and coping strategy were analysed in the cases with both diagnosis of moderate-to-high suicide risk, it showed more than 55% of them had low social support and more than 70% had insufficient coping strategy (Table 3).

Suicide tendency

The repulsion of life scale was used to evaluate the suicide tendency and was an important predicting factor for suicide risk. The average score of the patients with COPD in suicide

Table 3 Supporting and coping between patients with chronic obstructive pulmonary disease (COPD) and lung cancer of suicide risk ($n = 38$)

Items	COPD ($n = 20$) Low (%)	COPD ($n = 20$) Moderate to high (%)	Lung cancer ($n = 18$) Low (%)	Lung cancer ($n = 18$) Moderate to high (%)	χ^2
Support system	9 (45·0)	11 (55·0)	6 (33·3)	12 (66·7)	0·540
Coping strategy	6 (30·0)	14 (70·0)	5 (27·8)	13 (72·2)	0·023

Table 2 Suicide risk between patients with chronic obstructive pulmonary disease (COPD) and lung cancer ($n = 205$)

Items	COPD ($n = 76$) Low (%)	COPD ($n = 76$) Moderate to high (%)	Lung cancer ($n = 129$) Low (%)	Lung cancer ($n = 129$) Moderate to high (%)	χ^2
Suicidal thoughts	58 (76·3)	18 (23·7)	111 (86·0)	18 (14·0)	3·128
Prior suicide attempts	67 (88·2)	9 (11·8)	126 (97·7)	3 (2·3)	7·859*
Suicide plan	68 (89·5)	8 (10·5)	127 (98·4)	2 (1·6)	8·304**
Lethality of plan	68 (89·5)	8 (10·5)	127 (98·4)	2 (1·6)	8·304**
Negative thoughts	56 (73·7)	20 (26·3)	106 (82·2)	23 (17·8)	2·078
No harm contract	72 (94·7)	4 (5·2)	129 (100)	0 (0·0)	NA
Alcohol/drug abuse	74 (97·4)	2 (2·6)	127 (98·4)	2 (1·6)	0·292
Behavioural symptoms	63 (82·9)	13 (17·1)	111 (86·0)	18 (14·0)	0·370
Support system	52 (68·4)	24 (31·6)	105 (81·4)	24 (18·6)	4·489*
Coping strategy	58 (76·3)	18 (23·7)	109 (84·5)	20 (15·5)	2·119
Total scoring risk	56 (73·7)	20 (26·3)	111 (86·0)	18 (14·0)	4·840*

*$p < 0{\cdot}05$, **$p < 0{\cdot}01$.
Good social support and coping strategy had low score.

tendency was 2·6 (SD 0·4) while that of the patients with lung cancer was 2·5 (SD 0·3). The repulsion of life score of COPD did not differ from lung cancer by self-rating. Those self-rating scores and the results of suicide risk screened by the nurses showed a significant correlation ($r = 0{\cdot}217$, $p < 0{\cdot}01$) (Table 4), indicating that suicide could be screened by the nurses when the patient showed repulsion to life.

Symptom distress

The average severity of symptoms as rated by SD with COPD patients was 26·17 (median 21·5, range 2–73), and the patients with lung cancer had an average of 24·31 (median 21, range 1–92). The common symptoms for both diseases were shortness of breath and insomnia; other major distress symptoms of patients with COPD were defecation, thirst and chest tightness. However, patients with lung cancer had other major distress symptoms of pain, cough and abdominal distention (Table 5). The study founded significant correlation between the severity of symptoms and suicide risk ($r = 0{\cdot}181$, $p < 0{\cdot}01$; Table 4).

Table 4 Correlation between suicidal risk factors for patients with chronic obstructive pulmonary disease and lung cancer ($n = 205$)

Variables	Suicide risk	Repulsion of life	Severity of symptoms
Suicide risk	–	0·217**	0·181**
Repulsion of life	0·217**	–	0·87**
Severity of symptoms	0·181**	0·87**	–

**$p < 0{\cdot}01$.

Table 5 Major severity of symptoms in patients with chronic obstructive pulmonary disease (COPD) and lung cancer ($n = 205$)

Variables	COPD ($n = 76$)	Lung cancer ($n = 129$)
Shortness of breath	4·56	$3{\cdot}59^{3}$
Defecation	4·46	$3{\cdot}19^{7}$
Insomnia	3·59	$4{\cdot}11^{1}$
Thirsty	3·48	$3{\cdot}13^{8}$
Chest tightness	3·32	$2{\cdot}82^{11}$
Abdominal distention	3·11	$3{\cdot}39^{5}$
Fatigue	2·97	$3{\cdot}36^{6}$
Lack strength/weakness	2·84	$3{\cdot}13^{8}$
Cough	2·79	$3{\cdot}51^{4}$
Poor appetite	2·72	$3{\cdot}13^{8}$
Pain	2·43	$3{\cdot}96^{2}$

Superscript numbers in the column, 'Lung cancer' represent the ordinal sequence of the symptom score.

Analysis of the correlations of suicide risk, suicide tendency and symptom distress

The Pearson's correlation was used to evaluate the correlations between suicide risk, suicide tendency and symptom distresses. The results showed that as the severity of distress increased, the life attitude leaned towards repulsion of life and suicide risk became higher ($r = 0{\cdot}217$, $r = 0{\cdot}181$, $p < 0{\cdot}01$; Table 4).

Discussion

The SRS was modified to redefine the scores of each item. Revised scoring had clear description of each item to make the rating less dependent on experts. In addition to expert validity of the interview scale, the score of self-rated repulsion of life was compared with the score of SRS. The interview scale of the SRS total score correlated significantly with total scores of the repulsion of life, thus showing good concurrent validity.

Patients under suicide risk might reveal some information about suicide during verbal or non-verbal communication. The suicide risk–screening training offered general nurses the opportunity to evaluate the suicide risk of the patient during the nurse–patient interaction. This nurse–patient interaction was taught in the nurses' school education, but seldom used in the general clinical situation. The two-hour in-service training with clearly described screening items reminded the general nurse of their school experiences and reoriented them to observe patients' verbal and non-verbal communication.

Nevertheless, the workload in Taiwanese hospitals is very heavy. Each nurse took care of eight to nine acute patients in day shift and 14 patients at night. Nurses needed to take time to listen to or communicate with patients. The practice of communication skills was pivotal for the general nurses to master the nurse–patient interaction efficiently. One nurse felt she could not find time to handle the communication skills and refused to participate in the second round. One more psychiatric expert discussion help seven nurses (12·7%) master the use of SRS.

To start a conversation on suicidal ideation was hard for the Taiwanese staff nurses. Previous research showed that medical nursing staff were afraid of facing patients with suicide risk and rarely discussed the suicidal thoughts with them (Sun *et al.* 2005). This study suggests that the training programme using the interview scale of the SRS was one of the methods to discuss the suicidal thoughts with patients at risk.

For the patients with moderate and high suicide risk, most of their social support was poor. This is an important finding.

Robins and Fiske (2009) found that social support associated with low suicidal ideation. Social support was a good resource for alleviating suicidal ideation. Without this resource, suicidal ideation might be progressed. Vanderhorst and Mclaren (2005) did a study on a community older adult and found that fewer social resources were associated with higher levels of suicidal ideation. The part of social support in screening patient's suicide risk was a prominent but neglecting part in most suicide risk assessment scale. The purpose of screening social support is to evaluate numbers of patient's family (or friends) who can offer help. This item was very specific for nurses to use; thus, the SRS could be incoporated into nursing assessment routinely for newly admitted general patients.

Over 70% of the subjects used partial constructive or destructive coping method for the patients with moderate and high suicide risk. Lakeman and FitzGerald (2008) conducted a review on people who live with or get over being suicidal and had an in-depth understanding of these people. Suicide might be a failure and a means of coping. Thus, the authors encouraged nurses to be identified as people who can turn suicidal people's lives around.

Suicide risk assessment training increased self-confidence in risk assessment skill (McNiel *et al.* 2008). It is suggested that this suicide risk–screening training should be incorporate into continuing education in general hospital. Kaplan *et al.* (2001) even proposed a national effort to alter the knowledge and skill levels of clinicians in the area of geriatric mental health. As frontline clinicians, nurses take care of older patients with COPD and lung cancer, and it is urgent to incorporate this suicide risk–screening training into continuing education in general hospital. Then, the suicide risk screen could be included in the routine nursing assessment of the newly admitted patients for early detection of suicide risk.

There were 26·3% (20) patients with COPD and 14·0% (18) of the patients with lung cancer who showed moderate-to-high suicide risk. However, there was no difference when patients with lung cancer and COPD assessed repulsion with life by self-rating. The SRS used by nurses with patient with COPD had a higher score on suicide risk than patient's self-rating. It might be that COPD patient with prior suicide attempts, suicide plan and lethality of plan did not report in self-rating, but could be found in an in-depth nurse–patient interaction initiated by nurses. Joiner *et al.* (1999) reported that patients rated themselves as less suicidal than clinicians did. Pokorny (1983) described that suicide attempters readily report their intentions and people who committed suicide often conceal their thoughts and plans, which might be one reason. Thus, it was very important for the general nurses having training of using SRS to screen the under-covered suicidal plans. The five patients who refused to participate in this study because of low emotion needed special attention and were referred to psychiatric consultation immediately.

These high-risk inpatients reminded the nurses about strategies for a safe environment, intense observation and communication among the medical team about patient's suicidal intention (Barre & Evan 2002, Lynch *et al.* 2008, Mcpherson 2005, Sullivan *et al.* 2005). Also, the communication needs to involve the care-givers and different levels of care as patients move from inpatient to outpatient treatment (Dlugacz *et al.* 2003). Furthermore, it is better to have a case manager from hospital-based suicide prevention centre to monitor the high-risk patients under short length of stay circumstances. Thus, nurses in the frontline did the first-level screening with the preparation of suicide risk–screening training, then a multiple-team approach could provide resources to complement the nursing strategies in dealing with the multiple facet of suicide phenomenon.

Patients with COPD were 9·5 years older than patients with lung cancer. The average severity of symptoms of patients with COPD was also a little higher than the patients with lung cancer in this study. Because COPD was a long-term chronic disease, the patient's conditions usually deteriorated gradually. The scores for risk for suicide in patients with COPD were higher than those in patients with lung cancer. It was probably because the progressive duration of patients with lung cancer was not as long as those of patients with COPD; thus, the quality of life of patients with COPD in physical, psychological and social aspects was impacted by this chronic progressive disease.

Schneider and Shenassa (2008) proposed that cancer patients with suicide ideation were more likely be 70 years or older and had overall poor health. Macdonald (2010) mentioned that chronic illness and pain were the factors that cause an older person to consider suicide. It was shown in our study that the average age of patients with lung cancer was 70 (SD 12·2) years; their severity of symptoms was highly correlated with repulsion with life and correlated with suicide risk.

Patients with severe symptom distresses had a higher suicide risk, and those with a poor support system might view suicide as a means of escape from suffering. Suicide might also result from an associated poor prognosis, concerns of debility or loss of dignity, or the fear of posing a burden to loved ones (Juulink *et al.* 2004). Shortness of breath and insomnia were the main symptoms found in both patients with COPD and patients with lung cancer. Sleep was also affected because of shortness of breath, cough and decreased daytime activities. Patients with lung cancer also experienced serious painful symptoms in this study. Akechi *et al.* (2001) reported that patients with lung cancer often suffered from

under treatment of cancer pain, loss of control and hopelessness leading to suicide ideation. Therefore, the abilities of the nurses to evaluate patient's shortness of breath, insomnia and pain and interventions to alleviate these symptoms should be taken seriously.

Conclusion

Screening the risk of suicide was extremely difficult and complex when applied to the patient. The description of each item in the suicide risk screening tool was refined with clear definition in this study. The nurses being competent in nurse–patient interaction was important. We designed a two-hour screening skills training for the general nurses caring for patients with COPD and lung cancer, which facilitated the general nurses to evaluate the hints of suicide. For the patients with moderate and high suicide risk, most of their social support was poor. The role of social support in screening patient's suicide risk was a prominent but neglecting part in most suicide risk assessment scale.

The results revealed that the nurses' screening using the SRS with patient with COPD had a higher average score of suicide risk than the patients' self-rating. Symptom distress could affect the mood of patients either with COPD or lung cancer. This finding suggested that SD in patients with COPD and lung cancer were highly related to suicide risk. Thus, it is important for nurses to alleviate the patients' suffering from short of breath, insomnia and cancer pain.

This SRS scale had been expanded for use by general nurses in a standardised interviewed format. It might be most useful in alerting general nurses to high-risk patients early in screening or indicating the need for psychiatric referral or suicide case manager in general hospital settings. However, the use of SRS by eight nurses did not reach the expert consistency in the first round indicated that monitoring the use of the SRS is necessary. Nurses using the SRS were monitored only twice, which was a limitation of this study. A large sample study focusing on the improvement of the skills of nurses to relieve symptoms and screen the risk of suicide is suggested in the future.

Relevance to clinical practice

The two-hour suicide risk–screening training could renew the general nurse skill of risk screening for the hospitalised patients.

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Contributions

Study design: SL; data collection: FM, JL, SL; data analysis: SK, FM, MB and manuscript preparation: SL.

Conflict of interest

There is not any conflict of interest.

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