

Relationship of Coping Styles with Suicidal Behavior in Hospitalized Asthma and Chronic Obstructive Pulmonary Disease Patients: Substance Abusers versus Non- Substance Abusers

Mitra Safa¹, Fatemeh Ghassem Boroujerdi²,
Firouzeh Talischi³, Mohammad Reza
Masjedi⁴

¹Clinical Tuberculosis and Epidemiology Research Center, National Research Institute of Tuberculosis and Lung Diseases (NRITLD), Shahid Beheshti University of Medical Sciences, Tehran, Iran, ²Chronic Respiratory Diseases Research Center, National Research Institute of Tuberculosis and Lung Diseases (NRITLD), Shahid Beheshti University of Medical Sciences, Tehran, Iran, ³Nursing and Respiratory Health Management Research Center, National Research Institute of Tuberculosis and Lung Diseases (NRITLD), Shahid Beheshti University of Medical Sciences, Tehran, Iran, ⁴Telemedicine Research Center, National Research Institute of Tuberculosis and Lung Diseases (NRITLD), Shahid Beheshti University of Medical Sciences, Tehran, Iran

Received: 3 June 2014

Accepted: 23 July 2014

Correspondence to: Ghassem Boroujerdi F
Address: Chronic Respiratory Diseases Research Center, National Research Institute of Tuberculosis and Lung Diseases (NRITLD), Shahid Beheshti University of Medical Sciences, Tehran, Iran
Email address: anahita86@yahoo.com

Background: Treatment of patients with chronic conditions requiring hospitalization requires patient acceptance and cooperation and adoption of coping strategies. Inappropriate coping strategies such as substance abuse are concerning in the course of treatment. This study sought to explore the association of coping strategies with suicidal behavior in substance abusers and non substance abuser patients with chronic pulmonary diseases namely asthma and chronic obstructive pulmonary disease (COPD).

Materials and Methods: This comparative study was performed on 100 patients with asthma and COPD selected via convenience sampling. Subjects with and without substance abuse were separated into two groups of 50 patients each. Ways of Coping Questionnaire of Lazarus (WOCQ) and Suicide Behavior Questionnaire-Revised (SBQ-R) were completed by them. Five Persian speaking patients rated this questionnaire to be easily understandable in the pre-test stage. Cronbach's alpha was calculated to measure the internal consistency.

Results: The mean (\pm standard deviation) age of participants was 40 (\pm 14) years; 58% of individuals were men; 62% had chosen problem-focused coping. The most abused substances were cigarettes (78%) and opium (42%); 6% of substance abusers had thought about suicide five times or more in the past year; 5% of substance abusers had seriously attempted suicide. Tendency to commit suicide was greater in men, substance abusers and participants who had chosen emotion-focused coping strategies, based on a regression model. Average score of suicide tendency was significantly higher in substance abusers ($B=2.196$, $P=0.007$).

Conclusion: Chronic disease is a crisis and patients need to acquire appropriate coping strategies to deal with it, especially in substance abusers and suicidal patients. Precise recognition of coping strategies in chronic pulmonary patients with substance abuse is necessary via a team cooperation among psychiatrics, psychologists and an internal physician in hospitals because medical treatment alone is not sufficient in such cases.

Key words: Coping, Substance abuse, Pulmonary disease, Suicide

INTRODUCTION

Many patients with chronic physical illness suffer various psychiatric disorders like substance abuse due to difficult circumstances, which certainly exacerbate the

disease and complicate the treatment. Most patients with chronic or incurable disease experience depression, anger, feelings of guilt, suicidal ideations, anxiety, loneliness, sleep and appetite disorders, cognitive and sexual

dysfunction, mental task and speech disturbances, dependence, denial of illness, lack of body control and specially substance abuse (1). As a result, treatment of patients who need hospitalization requires direct confrontation with patients to help them deal with the existing circumstances. This encounter involves cognitive and behavioral attempts to control for external and internal disabling conditions. Patients attempt to eliminate, minimize or tolerate the stress. Their coping behavior involves physical and mental activity (2). People may pick adaptive or maladaptive mechanisms, based on their personality traits and some other factors. Additionally, it has been shown in many studies that efficient or inefficient coping strategies can affect the consequence of chronic organic disease (3). Facing stress has various stages and people go through several stages including initial evaluation and decision making, secondary assessment and taking actions (adaptive or maladaptive). Adaptive encounter helps patients respond more effectively to difficult situations in the course of disease (4). Problem-oriented and emotion-oriented copings are the two main coping styles. Emotion-oriented coping aims to calm down the patients and eliminate the stress. In problem-oriented coping, patients try to eliminate stress or minimize it by performing a targeted task (5). Lack of adequate coping may be seen in suicide victims (6). Inadequate coping may lead to suicide (7) and avoidant coping has a positive correlation with suicide ideation (8). Many people have suicidal ideation without attempting it; only a small percentage of them attempt suicide. Suicide prevalence is 642 per 100,000 population in Iran (9). Researchers have found correlations between life stress and suicide (10). In patients with maladaptive coping strategies, factors like substance abuse may play a mediating role and increase the odds of suicide attempt (9). Chronic respiratory diseases are serious public health problems worldwide; among which, obstructive diseases are the most prevalent. The prevalence of asthma is still high and affects patients of different age and socio-economic status. Despite the advances in diagnostic and therapeutic modalities, several

studies show that asthma has an impact on patients' coping. Asthma is a chronic condition that limits patient's activity and social relations. Thus, coping strategies may impact on asthma symptoms and disease progress and should be taken into account (11). A study showed that in both COPD and cystic fibrosis (CF) patients, higher levels of active coping and lower levels of disengagement were associated with better psychological quality of life (QOL) (12). Researchers have shown that many individuals with physical conditions turn to substance abuse as an adaptive mechanism to tolerate the disease symptoms (13). Timely detection and use of problem-solving coping strategies may help reduce the psychological distress experienced during acute hospitalizations for COPD (14). Many chronic disease patients also abuse narcotics for pain relief (15). Thus, it is important to evaluate the coping mechanisms adopted by patients suffering from a chronic condition; many studies have shown substance abuse to be a coping strategy in such patients (16). Substance abuse is the second risk factor for suicide after psychiatric disorders (17). Both chronic and acute substance abuses are associated with suicide; because when combined with depression, substance abuse increases the risk of suicide (18). Suicidal behavior refers to actions for harming or killing oneself (19). Lung diseases are associated with a two-thirds increase in risk of suicide. Cancer and asthma are correlated with more than a 4-fold increase in risk of suicide. There are many factors that can lead to suicide in various diseases. Asthma and other lung diseases are chronic life threatening conditions (20) with symptoms mimicking those of panic disorder; and are risk factors for suicide (21). Studying patients' ways of encountering illness can inform us of the possibility of substance abuse in the future. Therefore, substance abuse, maladaptive coping and suicidal behaviors and thoughts may be possible signs of not coping to chronic illness and may negatively affect the treatment. This issue indicates the importance of studying the mentioned variables in treatment procedure. Considering the gap of information in this regard and presence of a suicide history in many

patients with no detailed information about it, this study aimed to evaluate the aforementioned factors in pulmonary patients in Masih Daneshvari Hospital. This study aimed to investigate the association of coping strategies with suicidal behavior in substance abusers and non substance abuser patients with asthma and COPD.

MATERIALS AND METHODS

This comparative study was conducted on 100 hospitalized patients with chronic pulmonary diseases namely asthma and COPD selected via convenience sampling in Masih Daneshvari Hospital in 2012. They met the admission criteria, were over 18 years old and gave informed consent prior to the study. After providing them with adequate information about the study process and ensuring them about the confidentiality of information, patients were matched in terms of age, educational level, and job variables; then, we divided patients into two groups of substance abusers and non-substance abusers with 50 individuals in each group. The study was approved by the scientific and ethical committee of the hospital. After briefing the patients on how to fill out the questionnaire, the Lazarus WOCQ and SBQ-R were completed by both groups of patients. The logistic regression model was used for evaluation of the relationship of coping and demographic variables with substance abuse. Also, linear regression was used to assess the associations between suicide, coping, demographic variables and substance abuse.

Instruments used: In this study, in addition to demographic information of patients, the Lazarus WOCQ, the Addiction Severity Index (ASI) and the SBQ-R were used. The WOCQ was introduced by Folkman and Lazarus in 1985 and is used for assessing the coping strategies and has 66 items. The reliability of this questionnaire was evaluated in Iran in a group of 763 students in Tehran, with Cronbach's alpha value of 0.80 (22).

The ASI is used for evaluating the pattern of substance abuse. It is very sensitive for detecting the degree and

pattern of substance dependence and has sensitivity and specificity of 93% and 95%, respectively. The Cronbach's alpha value for it in various studies in Iran has been reported to be 0.85 (23).

The SBQ-R is a self-report questionnaire developed by Linnehan in 1981. It evaluates the suicidal thoughts and behaviors. It is designed for adults and the results tend to correlate with other measures, such as the Scale for Suicide Ideation (24). The total score should range from 3 to 18. Its cut off score for adult general population is ≥ 7 , with sensitivity of 93% and specificity of 95%. This value for adult psychiatric inpatients is ≥ 8 , with sensitivity of 95% and specificity of 91% (25). This test was validated in Iran in Masih Daneshvari Hospital on pulmonary patients in 2013 (26).

RESULTS

In this study, the mean age of participants was 40 ± 14 years; 58% of individuals were men; 83% persons had high school education and 64% were married (Table 1); 62% used problem-focused coping, and the remaining (38%) used emotion-focused coping; 6% had reported having suicidal thoughts or seriously deciding to commit suicide (Table 2).

Table 1. Demographic information

		N (%)
Gender	Female	42 (42)
	Male	58 (58)
	Illiterate	4 (4)
Education	High school education	83 (83)
	University education	13 (13)
	Single	28 (28)
Marital status	Married	64 (64)
	Widowed	5 (5)
	Divorced	3(3)
	Housewife	26 (26)
Job	Employee	27 (27)
	Self-employed	32 (32)
	Unemployed	15 (15)

Table 2. Suicide in the past year

	N (%)
Thinking about suicide 5 times or more	6 (6)
Seriously committing suicide	5 (5)
Not thinking about suicide	74 (74)
Never thinking about suicide or attempting it	77 (77)
Never telling anyone they may commit suicide	85 (85)
Telling someone that they want to commit suicide or have made a decision to do it	6 (6)
Will never commit suicide in the future	35 (35)

In the group of substance abusers, 28% smoked opium and 14% took it orally; 78% smoked tobacco (Table 3). In substance abuser group, 84% had history of quitting and among quitting methods, most of them (81%) tried quitting without medications; 6% had history of drug toxicity; 12% had a family member with substance or alcohol dependence. Also, 78% believed that they did not have any problem due to substance abuse in the past 30 days. Altogether, 80% believed that treatment of substance dependence is important. Tendency to suicide was greater in men, substance abusers and patients adopting emotion-focused coping. There was a significant correlation between suicide and substance abuse (B=2.196, P=0.007). Suicide frequency was higher in substance abusers. There was a significant correlation between job and education.

Because of high correlation of age with marital status, the marital status was omitted from the statistical model. The risk of suicide was higher in substance abusers. The mean score of suicide in patients with high school education and illiterate subjects was higher than in patients with academic education. The rate of suicide was higher in

men. Mentioned figures were not significant. Suicide significantly decreased with aging (P= 0.05) (Table 4).

The odds of substance abuse were higher in men. The odds of substance abuse were higher in patients with high school education and illiterate subjects than in patients with academic education. The odds of substance abuse were lower in singles than divorced and the odds of substance abuse were lower in married than divorced subjects (Table 5).

Table 3. Pattern of substance abuse in substance abusers

Substance	Number (%) of users	Pattern of use	Mean age of Initiation (years)
Cannabis	2 (2%) smoking	100% regular	20
Crystal	8 (8%) smoking	75% regular	26
Opium	14 (14%) oral intake 28 (28%) smoking	66% regular	29
Burnt or concentrated opium	2 (2%) oral intake 2 (2%) smoking	50% regular	53
Heroin	4 (4%) smoking	100% regular	15
Tobacco	78 (78%) smoked	71% regular	22
Alcohol	32 (32%) oral intake	18% regular	21
Water pipe	20 (20%) smoking	20% regular	23
Methadone	10 (10%) oral intake	60% regular	45

Table 4. Correlation between marital status and other variables

Model	Unstandardized coefficients		Standardized coefficients		t	Sig.
	B	Std. error	Beta			
(Constant)	7.634	1.678			4.551	.000
School	.280	1.170	.028		.239	.812
Illiterate	.738	2.355	.038		.313	.755
Marital status	1.405	.776	.181		1.809	.074
Age	-.058	.029	-.217		-1.985	.050
Sex	-.062	.765	-.008		-.081	.936

a. Dependent variable: suicide

Table 5. Variables in equation

	Odds ratio (OR)	S.E.	Sig.
Age	.98	.02	.33
Sex / male (1)	.90	.44	.81
Education group (academic)			.33
Education group (1)	1.41	1.50	.81
Education group (2)	2.86	.76	.16
Marital group (divorced)			.22
Marital group (1)	.29	1.00	.13
Marital group (2)	.23	.84	.08

a. Variable(s) entered in step 1: age, sex, education group, marital group.

DISCUSSION

As shown in the results section of this study, most patients had adopted problem-focused coping. There was no significant relationship between coping strategies and demographic variables and substance abuse. In addition, there was no significant relationship between suicide and demographic variables and coping. But there was a significant relationship between suicide and substance abuse. We may conclude that adopting emotion-oriented coping mechanism does not necessarily mean lack of productivity, and there are situations where problems can be resolved easier with this approach. In fact, living conditions allow both approaches in all individuals to better deal with life events. Meanwhile, higher rate of suicide in substance abusers is a key point in treatment of pulmonary patients that must be taken into account. Studies have shown that people who abuse substances at difficult times or when facing disasters, consider substance use as a solution to avoid their problems and not facing them. Also, many individuals who turn to substance abuse during critical times of their life, instead of using social support systems to help them face these issues, try to face them on their own and this in turn can lead to increased physical and emotional burden. As a result, substance abuse can be a learned response, which has been sustained by positive and negative reinforcement. Another consequence of substance abuse is distraction from the difficulties. Many patients with physical disorders who abuse substances, in reality, use maladaptive coping

mechanisms particularly when they lack further adaptive methods to face their problems (27). Results of long-term studies on healthy individuals have shown that extrovert behaviors in childhood (such as aggressiveness) and introvert mechanisms (such as depression), predict substance abuse patterns in adulthood (28). Patients who use substances compared to non-users, use temporary coping mechanisms that are relieving and in return have behavioral and emotional problems such as anxiety, depression, disturbing thoughts, aggression and anti-social behaviors (29). In a study on war veterans, it was shown that emotion-oriented coping mechanisms (such as emotional bursts and cognitive escape) and lesser use of problem-oriented adaptation were followed with increased alcohol intake and its consequences in 2 years. In other words, tendency towards the use of emotion-oriented coping increases the risk of substance abuse when faced with negative emotions and inconsistencies (30). In another study, it was shown that being male and younger, having an independent life and physical or psychiatric disease were risk factors for substance abuse. Various behavioral problems such as aggressiveness, mood swing, sexual exploitation and relationship issues are seen in substance abusers (31). These findings show that more than 90% of complete suicides among adults have been linked with psychotic disorders or substance abuse (18). Suicide risk is higher in functional and lower in organic disorders, and substance abuse disorders rank in-between these two groups (32). Young age, tobacco consumption and chronic organic psychiatric diseases are the suicide risk factors. More than 50% of suicides are associated with alcohol and drug abuse. Evidence shows that 25% of alcoholics and substance abusers attempt suicide (18). In 70% of teen suicides, substance abuse and alcohol are involved. It is advised that all substance abusers and alcoholics be evaluated because of the high risk of suicide in them. A survey shows that 90% of patients who attempted suicide had substance abuse (33). Abusing substances like cocaine is highly correlated with suicide. Suicide occurs more in

permanent cocaine abusers in the state of "abuse reduction" or "withdrawal". In young individuals, abusing multiple substances simultaneously can lead to suicide while alcoholism in the elderly would have a similar consequence (34, 35). In a study on nurses, suicide risk in nurses who smoked 1 to 24 cigarettes daily was double and it was 4 times higher in nurses who smoked 25 or more cigarettes daily compared to never smokers (36, 37). In a survey on 300,000 American male soldiers, a definite relationship existed between suicide and smoking. Suicide rate in soldiers who smoked more than one pack of cigarette daily was double than that in soldiers who had never smoked (38). Female Iranian students with a history of suicide attempt had used emotion-focused coping more than problem-focused strategy (39). In one study, 30 psychiatric patients hospitalized due to suicidal behavior were compared with 30 hospitalized psychiatric patients without suicidal behavior and 32 healthy controls in terms of suicide and coping strategies. The group with higher risk of suicidal behavior showed less use of planning and underestimation of coping strategies. They were not capable of emphasizing the importance of the source of stress or perceive the problem. They also lacked the ability to retain new information for resolving the stress load of life events. Four coping strategies of underestimation, replacement, planning and inversion were negatively associated with suicide risk, while the three strategies of repression, blaming and substitution had positive correlation with suicide risk (40). One study showed that the most common coping mechanisms used when facing periods of dyspnea included positive outlook, coping and self reliance. There was a significantly high correlation between the severity of symptoms of bronchitis and psychiatric symptoms. As a result, psychiatric intervention is required for pulmonary patients to learn adaptation mechanisms and control symptoms during periods of dyspnea (41). In a study on 66 teenagers, it was shown that those who had physical illness, used substances more frequently in unhappy situations and also used emotion-

oriented coping mechanisms (42). The higher the patient perceived imbalance in delegated dyadic coping, the lower the couple's QOL. More negative and less positive dyadic coping were associated with lower QOL and higher psychological distress. Psychotherapeutic interventions to improve dyadic coping may lead to better QOL and less psychological distress among COPD patients and their partners (43). In lung disease patients, avoidance coping, characterized by thoughts and/or actions to minimize the experience of a stressor (44), has been associated with poorer global QOL and work performance (45) as well as higher levels of depression, pain, and psychological distress (46). In contrast, active coping, characterized by active engagement in dealing with stressful events, has been associated with better QOL (44). Based on the results of this study, it can be emphasized that the type of coping mechanism in patients with physical illness including pulmonary disease requires attention because it can be associated with many positive or negative behaviors like suicide. This study demonstrated that the mean score of suicide tendency was significantly higher in substance abusers. Thus, it is hoped that in near future, with a larger study on this topic, more information will be provided so that patients can be equipped with more effective and useful coping strategies that will help them with their illness.

Study limitations and ways to overcome them: Our study population comprised of patients from Masih Daneshvari Hospital only, and future studies must include hospitals from all over the country.

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