SUICIDE RISK AND PROTECTIVE FACTORS

Goal:

Distinguish the various risk and protective factors of suicide, in order to improve identification of those at high risk for suicide.

After completing this activity participants will be able to:

- Identify risk factors for suicide
- Summarize common myths about suicide and suicidal ideation
- Evaluate protective factors associated with suicide

Professional Practice Gaps

Primary care physicians are in a unique position to identify and aid potential suicide victims. As Feldman and Finguerra (2001) note, studies have shown that roughly half of those who complete suicide have visited their physician in the previous month. Identification of factors that may increase an individual's risk for suicide has several benefits (Shea, 1999). Most importantly, it will raise the clinician's awareness, which in turn will improve detection. The identification of specific risk factors may provide the clinician with some guidelines for specific questioning. If a patient comes to a clinic with a long history of alcohol abuse, the clinician, with heightened awareness, can tailor his or her questions to touch on substance abuse and suicidality. In fact, the knowledgeable clinician is equipped to screen all patients for suicide risk.

INTRODUCTION

The nature of suicide is such that there is no exact science to measuring an individual's level of risk. By definition, risk factors are characteristics that occur repeatedly in large samples of people who have committed suicide (Shea 1999). Over time, they are the characteristics that make an individual more susceptible to suicide (Hendin et al. 2001). Risk predictors, on the other hand, are specific characteristics of an individual that indicate suicide risk in the context of that person's life. The interaction between risk factors and risk predictors is a unique, dynamic process that occurs differently in each individual.

When identifying risk factors in terms of individual suicide risk, one must avoid ecological fallacy. Ecological fallacy occurs when you generalize the causal relationships that are observed for a group of people to an individual . As applied to suicide, it would mean that the risk factors for an entire population of suicides are only meaningful to the significance of a given risk factor in an individual's life. Alcohol abuse, for example, is a suicide risk factor, yet it is not necessarily a suicide risk predictor in the lives of alcoholics; rather, its role in relation to other risk and protective factors determines its role in an individual's suicide risk. For this reason, it is important to remember to assess individuals, not just a list of risk factors.

WHY ARE RISK FACTORS IMPORTANT?

An individual may have one or more risk factors yet not be suicidal. So why then are risk factors important? Because some of these factors are at work in nearly all suicide victims, usually in conjunction with a precipitating event. Risk factors rarely, if ever, act independently to cause a suicide; rather, the interaction and combination of factors produce an increased probability of suicide (Jacobs 1999). Kessler and colleagues (1999) found that as the number of risk factors increased so did the number of suicide attempts. Hence, an understanding of these factors may allow us to help those people at highest risk when they are in need.

Primary care physicians are in a unique position to identify and aid potential suicide victims. As Feldman and Finguerra (2001) note, studies have shown that roughly half of those who complete suicide have visited their physician in the previous month. Identification of factors that may increase an individual's risk for suicide has several benefits (Shea 1999). Most importantly, it will raise the clinician's awareness, which in turn will improve detection. The identification of specific risk factors may provide the clinician with some guidelines for specific questioning. If a patient comes to a clinic with a long history of alcohol abuse, the clinician, with heightened awareness, can tailor his or her questions to touch on substance abuse and suicidality. In fact, the knowledgeable clinician is equipped to screen all patients for suicide risk.

FRED'S SUICIDE NOTE

Here is a suicide note found pinned to a young man who hanged himself in his apartment. Can you identify his risk factors?

To anyone who might care,

Please tell my family that I love them and they had nothing to do with this. I know it's wrong to do this, but I can't take it anymore. Before going to the hospital, I thought the world was out to get me, and now they really are. I haven't been able to talk with anyone about how I feel or what I think. There have been many times that I've tried to go through with my death, buying the rope and finding a beam that will support my weight. I just don't want you to suffer anymore.

The doctors at the hospital told me this was called Bipolar Disorder. I call it hell. When I first came home, things were great. I really thought we had gotten things right this time. I was able to work and I even started dating again. Now, I'm not able to think or eat or sleep. I'm just so confused. I just need out of this torture. I hope you all understand. The beer used to help, but not anymore. I'm always running. I can't do anything to make it better. This is the only relief in sight. I just want all the pain to go away.

Goodbye. I love you.

Someone please make it all go away.

GROUPS OF RISK FACTORS

Risk factors for suicide can be classified into 4 basic areas:

- Demographic
- Diagnostic
- Psychological
- Environmental

All of these areas are interrelated and pose a cumulative risk. Demographic factors include age, gender, race, residence, ethnic background, and employment status. Diagnostic factors involve the patient's mental health or medical diagnosis. Psychological factors are the ways in which the person views the world or himself or herself. These include one's cognitive style, coping style, and attitudes. Environmental factors are those that are outside of the individual, such as social support, access to means of self-harm, and precipitating events.

DEMOGRAPHIC FACTORS

Demographic Factors

There are several demographic factors that increase an individual's risk for suicide. These include being male, Caucasian, over 65 years of age, unemployed, and of low socioeconomic status. These factors are enduring -- or at least relatively stable. It is also important to remember that there are several special populations that must be considered aside from the statistics.

Gender

According to the most recent data available from the National Vital Statistics Report, 4.1 men die by suicide for every woman who does, with white males comprising 73% of all US suicides in 2000 (Anderson 2002). In their work on suicidality, Edwards and Holden (2003) also noted significant gender differences. One possible explanation for the disproportionate number of male deaths is that they choose more lethal means, such as shooting or hanging. Females tend to employ means that are less lethal and allow for an increased chance of rescue, such as overdose or cutting, although use of firearms is increasing among suicidal females. The choice of method may be related to the fact that women who survive an attempt are less stigmatized than men. Women are also less stigmatized for proactive help-seeking behavior, so they may seek counseling to alleviate their pain. Women typically have fewer coping resources (economic power, autonomy, and influence over others) and therefore may attempt suicide as a means of communication rather than as a desire to die. Compounding the differences in resources is the style of problem solving used by men and women. Men may use a more analytical problem-solving style, while women may tend to use a more emotionally focused style. Comorbid substance abuse and mental illness, which is more prevalent among men, may also increase men's suicide rates compared to women.

Race/Ethnicity

Among US ethic groups, whites commit 90% of suicides (Anderson 2002). In 2005, 29,527 white Americans died by suicide, with a rate of 12 people per 100,000. Among ethnic minority groups, Native Americans have the highest suicide rate of 11.7 per 100,000 people, while Asian and African Americans have the lowest suicide rates of 5.2 per 100,000 (NCHS 2007).

Age

Data suggest that elderly (over age 65) and young (age 15 to 24) populations are at high risk for suicide. Elderly men comprise one of the highest risk populations for suicide (Pearson et al., 1999). In 2002, individuals over the age of 65 years represented 12% of the population yet constituted 18% of the suicides, which yields a rate of 15.6 suicides per 100,000 (McIntosh 2004). Although many of the characteristics of elderly suicide victims are similar to those of adolescent victims, elders who complete suicide tend to be more socially isolated, rigid in their thinking, and anxious (Conwell and Duberstein 2001). One possible reason for the increased rate of suicide in older adults is that elderly people have fewer observed warning signs, a more complete suicide plan, and increased determination (Conwell et al. 1998).

Suicide was ranked as the third leading cause of death for individuals under the age of 25 (Kochanek et al. 2004). This age group accounted for 15% of the suicides in 2000. Among 10- to 14-year-olds, the rate of suicide increased by 109% between 1980 and 1997. Young people tend to be impulsive and plan less for their suicide attempts, but the lethality of their attempts is increasing as they begin to use guns more frequently. Similar to adults, the ratio of adolescent males to females averages about 4:1.

Sexual Orientation

Sexual orientation has also been linked to an increase in suicide risk, especially in youth. Garofalo and colleagues (1999) found that sexual orientation was a risk factor, especially in adolescent males. In their review of literature, McDaniel and colleagues (2001) found that gay and bisexual men are 14 times more likely to attempt suicide than heterosexual men. Also, this increased risk appears to be more significant for men than women, among both adolescents and adults. In the same study by McDaniel et al., several possible stressors were identified as explanations for the increased suicide risk, including negative discrimination and homophobia from social supports and society in general.

Socioeconomics

Whitley and colleagues (1999) found that individuals living in deprived areas were at increased risk for suicide and other health concerns. In addition, unemployment has been linked to higher rates of suicide (Lester and Yang 2003). Having a lower educational level is also associated with increased suicide attempts, which may be related to rates of suicide among unemployed people (Kessler et al. 1999). One possible explanation for these factors' influence on suicide is poor access to healthcare. This creates a problem because individuals suffer with illnesses longer prior to treatment or may receive inadequate treatment.

DEMOGRAPHIC FACTORS: SUMMARY

The following demographic factors place an individual at higher risk for suicide:

- Gender: male
- Race: white or Native American
- Age: over 65 and under 24
- Sexual orientation: homosexual or bisexual
- Socioeconomics: low income and education levels

DIAGNOSTIC FACTORS

A high percentage of people -- some estimate the number to be 90% -- have a psychiatric illness at the time they commit suicide (Henriksson et al., 1993; Lecrubier, 2001). The most prevalent diagnosis is depression, which one study found as a contributing factor in 70% of suicides (Haw et al. 2001). Haw and colleagues (2001) found that individuals who attempted suicide were more likely than the general population to have a major depressive diagnosis or suffer from substance abuse. Chynoweth and colleagues (1980) identified depression as a contributor in 55% of the suicides in Brisbane, Australia. They also reported that about 50% of the suicide victims they studied had been taking medication for psychiatric disorders prior to death.

In a different study, Oquendo and colleagues (1999) found that depressed patients were receiving inadequate levels of treatment. They recommended improved diagnosis and treatment of depression through education. In an earlier study, Oquendo and colleagues (1997) identified suicide risk factors in depressed patients. These identified risk factors included substance intoxication, recent crises (relational or financial), and contagion (contact with other suicidal individuals). They also noted that individuals who had a history of severe depression with psychosis were at higher risk for suicide than those who did not. Since many severely depressed people are chronically depressed, it is important to differentiate between chronic risk factors and acute stressors in this population. Increased anxiety, insomnia, and hopelessness are acute signs of risk in the chronically depressed (Sherman 2002).

Untreated Bipolar Disorder is another positive risk factor for suicide. In fact, Baldessarini (2003) and Rihmer (2002) have recently argued that bipolar individuals are even more likely than those with major depression to commit suicide, but many truly bipolar patients have been misdiagnosed. Taking lithium, however, significantly reduces the risk to bipolar individuals (Mann, 2002). In a meta-analysis of the effects of lithium on suicide, it was noted that there was a large decrease in the rates of suicide and suicide attempts in bipolar patients who were treated with lithium (Baldessarini et al. 2001). The prevalence of suicide attempts in individuals diagnosed with Bipolar Disorder has been estimated at 25% to 50% over a lifetime (Nierenberg et al. 2001). As in other populations, increased levels of suicidal thoughts, aggression, and substance abuse have been associated with bipolar-diagnosed individuals who have attempted suicide (Oquendo and Mann 2001). An increased number of hospitalizations due to the depressive phase of illness, suicidal ideation during the depressive phase of illness, Cluster B Personality Disorders (Borderline, Antisocial, Histrionic, and Narcissistic personality disorders), and a history of sexual abuse were also found to be risk factors for the individual diagnosed with Bipolar Disorder (Leverich et al. 2003).

Suicide Risk for Psychiatric and Medical Disorders

Data from Baldessarini, 2003; Maris et al., 2000

The comorbidity of mental disorders is also a significant risk factor for suicide. Kessler and colleagues (1999) found that the more disorders a patient has, the higher the risk for a suicide attempt. Lecrubier, in his 2001 study, found that lethality could be predicted based on the number of disorders with which an individual has been diagnosed. Haw and colleagues (2001) also found that suicide attempters were likely to have a personality disorder, especially Borderline Personality Disorder and Antisocial Personality Disorder. Appleby and colleagues (1999) found that a decrease in the level of care mentally ill patients were receiving was associated with increased suicide risk. This underscores the importance of continuing care for an adequate length of time before discontinuing services.

Several medical illnesses have been linked to an increased rate of suicide. Affected individuals are usually older, in more pain, and more depressed (Sanchez 2001; Nordentoft et al. 1993; Maris et al. 2000). Specifically, cancers, HIV/AIDS, autoimmune disorders, asthma, multiple sclerosis, chronic pain, spinal cord injury, epilepsy, Huntington's disease, peptic ulcer, and renal failure increase the risk of suicidal ideation and attempt (Sanchez 2001; Druss and Pincus 2000; Maris et al. 2000; Hughes and Kleespies 2001; Fisher et al. 2001). Druss and Pincus (2000) also found that a greater number of co-occurring illnesses put individuals at higher risk for suicide. They found that 25% of the individuals who had only 1 medical illness reported feeling suicidal, while 35% of those with 2 or more medical illnesses reported such feelings. In fact, 16% of those with 2 medical illnesses had actually attempted suicide. Even statistically controlling for depression, substance abuse, and demographics, individuals with at least 1 medical condition were 1.3 times more likely to report suicidal ideation. The presence of depression in medically ill patients appears to further increase suicide risk. Kishi and colleagues (2001) found that during the phase of acute illness, 80% of the patients with suicidal ideation also had symptoms of depression. Patients whose depressive symptoms decreased were no longer suicidal. Conversely, those who remained depressed also remained suicidal.

DIAGNOSTIC FACTORS: SUMMARY

Diagnoses most closely associated with suicide include the following:

- Depression
- Bipolar Disorder
- Personality disorders
- Substance abuse
- Cancers
- HIV/AIDS
- Neurological disorders

PSYCHOLOGICAL FACTORS

The ways a person thinks, behaves, and views the world have been linked to suicide. These psychological factors influence the individual's reaction to precipitating events. Suicidal individuals typically exhibit several similar psychological characteristics, including cognitive distortions, feelings of helplessness and hopelessness, external locus of control, impulsivity, and psychache or unmet needs (Keilp et al. 2001; Haw et al. 2001; Mann et al. 1999).

Behaviorally, suicidal individuals tend to be more impulsive than nonsuicidal individuals. They are more likely to take greater risks and fail to think through their actions. Busch and colleagues (2003) found that levels of anxiety and agitation play a significant role in the prediction of an acute suicidal crisis. Fawcett and Rosenblate (2000) discussed 3 people who committed suicide after an evaluation in an emergency department. All 3 patients showed evidence of anxiety and/or agitation. The first exhibited an obsession about an unpleasant or dangerous event that was anticipated. The second reported severe agitation after discontinuation of medication. The third patient was presented as a voluntary admission but with no visible signs of anxiety or agitation, yet the patient was contacting family and reporting anxiety and agitation. The important note is that none of the 3 people were

presented as having suicidal ideation. The writers conclude that assessment of anxiety and agitation should be part of suicide risk assessment because, in these cases and in a corroborating study, anxiety was the most prominent symptom these suicide victims exhibited in the final days of life.

The adage that past behavior is the best predictor of future behavior holds true with suicide -- a previous attempt is the best predictor of a future attempt (Hawton et al., 2003; Goldston et al. 2001). Substance abuse further complicates the suicidal individual's behavior by disinhibiting the person, impairing cognitive functioning, and possibly exacerbating mood disturbance (Shea 1999).

Over the past several years, there have been several studies that examined the relationship between suicidal behavior and music. Villani (2001) noted that these studies have found a relationship between suicide and music with dark, morose, and violent content. Villani noted, however, that only a small percentage of those people drawn to violent music stated that the music increased their suicidal or violent thoughts. The majority of the individuals reported that listening to this music actually made them feel happy. One possible explanation for this is related to the fact that the music allows them to externalize their internal issues. Thus, the influence of music should be judged on an individualized basis.

Feelings of helplessness and hopelessness are two of the most dangerous psychological states associated with suicide. Helplessness is manifested as feelings of inadequacy and feeling as if the individual is unable to overcome his or her problem. Hopelessness, on the other hand, is the feeling that nothing can improve the situation. As a result of the individual's cognitive distortions and behavior, he or she feels unable to change the situation or that no positive change is possible. The individual often reports feeling as if he or she has no choices or options. Brown and colleagues (2000) found that hopelessness, depression, and suicidal ideation were significant risk factors in the prediction of suicide. The enduring sense of helplessness that a suicidal individual feels is the result of cognitive distortions and his or her coping style.

COGNITIVE DISTORTIONS

Cognitive distortions, specifically dichotomous thinking, a poor sense of self-efficacy, over-generalization of negative perceptions, and catastrophization, have been linked to suicide (Shea 1999). Dichotomous thinking occurs when the individual is unable to see a variety of options. It is an all-or-nothing view of a problem. Poor self-worth, or feeling as if one is not capable of a task, constitutes poor self-efficacy. Over-generalization and catastrophization are 2 types of cognitive distortions that are closely linked and associated with suicidal thoughts. When individuals over-generalize, they interpret one minor failure or hurdle to the failure or lack of ability of a whole issue or sometimes the whole world. For example, this one step in the solution failed; therefore, the entire idea is worthless.

Catastrophization is a form of over-generalization in which the individual views a minor flaw as a life-changing or life-threatening event. These people make mountains out of molehills, as the saying goes. When a person is suicidal, his or her thought process tends to be very reactionary, and he or she thinks that he or she is not capable of making changes (poor self-efficacy) or finding solutions to the apocalyptic crisis (catastrophization) -- so the only 2 options (dichotomous thinking) are a lifetime of pain and suffering (over-generalization) or suicide. In addition to cognitive distortions, suicidal

individuals often have an external locus of control, so they are dependent on other people or specific events (such as a pay raise) for answers to their problems.

The coping styles that suicidal individuals use also limit their range of perspective, yet they do not realize this. Horesh and colleagues (1996) found that suicidal individuals most frequently use suppression, blame, and substitution. In other words, suicidal individuals usually avoid a given problem, blame others for the problem, or engage in other tension-reducing activities. The research subjects showed poor ability in mapping, which is the ability to obtain information and seek alternative solutions. Minimization, which is the ability to reduce the importance of a problem, was also used less often by suicidal individuals than nonsuicidal individuals. These coping styles can be linked to the previously discussed cognitive distortions. A suicidal individual thinks about a problem, but those thoughts then influence how he or she reacts and copes with the problem, which consequently determines his or her behavior.

PSYCHOLOGICAL FACTORS: SUMMARY

Psychological factors associated with suicide include the following:

- Cognitive distortions
- Poor coping skills
- Dangerous behavioral styles
- Helplessness and hopelessness

ENVIRONMENTAL FACTORS

The final category of risk factors for suicide is environmental factors. These include social support systems, access to lethal means (e.g., guns, poison), and precipitating events.

People who are socially isolated (limited contact with friends, unmarried, no children) are at higher risk for suicide than those who have adequate social support from family and friends. Retirement, disability, and unemployment due to illness have been identified as risk factors for suicide (Qin et al. 2003). Isolation appears to have greater impact on males than females. Qin and colleagues noted a gender difference in their research, suggesting that a lack of spouse, employment, and/or income is more devastating to males than females. This is consistent with age-related data that places older men at higher risk

(Data from McIntosh 2003)

Most suicides can be linked to a precipitating event. This is not to say that any one thing or event is responsible for the individual's death; rather, a significant event was experienced prior to death. These events usually involve loss. The loss could be real, as in the death of a loved one, divorce, or loss of employment, or the function of a perceived loss of a relationship, freedom, or character. Maltsberger and colleagues (2003) found that a precipitating event was most often followed by several other events that applied additional stress to the individual. Due to the differences in individuals, however, the relationship or type of precipitating event is difficult to study empirically. Each individual suicide has a precipitating event that is unique to the person. For example, for one

person a divorce may be a difficult experience but not represent a life-threatening crisis. This may not be the case for another person, who experiences a divorce as a devastating event.

GUNS

Brent (2001) found that the presence of firearms in the home was a risk factor for suicide. According to the McIntosh (2003), a firearm was used in 55% of all United States suicides in 2001, which is more than any other means. Firearm suicide is much more common in the United States, where firearms are readily available, than in most other areas of the world. The first year of gun ownership seems to be the most dangerous. In their review of prevention strategies, Grandin and colleagues (2001) noted that over 35% of females who had committed suicide with a firearm did so within the first year of ownership. In a population-based study, Wintemute and colleagues (1999) found concurrent evidence of the danger related to the early phase of gun ownership. They noted that the second leading cause of death of their study subjects was suicide by firearm. The time of highest risk occurred immediately after acquisition of the gun, and the risk then decreased over time. For gun owners, the risk of suicide is less when guns in the home are kept locked in a safe place and unloaded (Shenassa et al. 2004).

The lethality of a suicide attempt by firearm is alarming. Gotsch and colleagues (2001) noted that individuals who inflicted injury on themselves with a firearm were 4 times more likely to die than suffer nonfatal injury. The location of injury could be partially responsible for the lethality of self-inflicted gunshot wounds. Self-inflicted gunshot wounds are primarily to the head and neck, whereas other types of gunshot wounds (intentional and unintentional) primarily involve the extremities (Gotsch et al. 2001).

RISK FACTORS IN CONTEXT

Now that we have an understanding of the risk factors associated with suicide, we will review a model with which to interpret the roles of these factors. Mann and colleagues (1999) developed one of the recent models for understanding suicide. Their model, known as the stress diathesis model or trigger-threshold model, identifies 2 types of risk factors at work in the suicidal person. The first type of factor, the trigger, is a precipitating event, such as the loss of a loved one, an argument with family, or an acute medical diagnosis. The other factors are classified as the threshold type, and they are the enduring factors or characteristics that increase a person's risk. These include personality disorders, substance abuse, and family history. Mann and colleagues suggest that the individual must experience at least 1 risk factor from each type to attempt or complete suicide. Independently, multiple factors of a single type do not produce suicide; rather, the combination of enduring and acute factors result in suicide.

Shea (1999) describes an additional framework for understanding suicidality. This framework includes not only the risk factors associated with suicide but also individual phenomenology. Each person has unique cognitive, emotional, environmental, and biological experiences that influence his or her reaction to risk factors. Also included are the current environment and the experiences surrounding the individual. As Shea (1999) so directly states, it is not risk factors that cause individuals to commit

suicide; rather, it is the decision by the individuals that suicide is the only viable answer to their unique set of circumstances that results in death.

PROTECTIVE FACTORS

Why don't some individuals with a variety of risk factors experience suicidal ideation, while others commit suicide? In addition to risk factors, researchers have identified protective factors that act to guard against suicide. Borowsky and colleagues (2001) found that risk can be decreased by 70% to 85% in adolescents who had at least 3 protective factors. In general, a sense of connectedness, a positive worldview, and a variety of coping skills act as protective factors. In adolescents, protective factors include connectedness to family, connectedness within school (both to teachers and other students), strong emotional health, and high grades (Borowsky et al. 2001). In adults, marriage and young children in the home, meaningful ways of coping with stress, and an awareness of religious/moral/social opposition have been found to guard against suicide (Oquendo et al. 1997). In fact, personal religious beliefs that oppose suicide are associated with lower levels of tolerance of suicide (Neeleman et al. 1997). In addition, Rubenowitz and colleagues (2001) found that involvement with a hobby or organization decreased the risk for suicide. Even for individuals with levels of depression comparable to those of suicide attempters, a positive worldview decreases hopelessness and thus reduces the risk for suicide (Malone et al. 2000).

While protective factors cannot necessarily be influenced by intermediaries, those factors should be considered when making decisions regarding intervention. Hence, clinicians and other intermediaries should try to elicit the protective factors at work in an individual's life to gain a more complete picture of his or her suicide risk.

MINI CASE BACKGROUND

Paul

Paul is a 66-year-old man with whom you have recently been in contact. Paul is a retired laborer for a local factory. He is in fair health for his age but does show the common problems associated with years of hard labor. Through your interaction with him, you know that he is rather isolated both geographically and socially. He lives on a 5-acre lot in the country with his girlfriend. He also has a couple of friends with whom he occasionally goes out to the bar. Since he retired a year ago, he tells you that he basically sits and watches TV and drinks beer until his girlfriend gets home from work to cook dinner.

From talking with his girlfriend, you learn that he drinks about a 12-pack of beer per day. She claims that he has not been the same since he retired. She says he does not ever want to go out dancing or to the racetrack, which they used to do a couple times per month. He has also talked to her about feeling useless since he is no longer working.

You learn from his daughter that he had a history of mild depression after her mother died 10 years ago. The loss was sudden and unexpected by the family. His daughter also reports that he used to come to her house to spend the night when he had fights with his girlfriend, and this behavior had

become more frequent in the last few months. She is concerned because recently she confronted him about driving while intoxicated, and now he no longer comes to her home.

Paul and his girlfriend are fighting one night when he tells her she would be better off without him. Thinking it is over between them, he then storms out to his truck, races out of the driveway, and stays out all night. He buys a case of beer and goes down to the river, where he stays up all night contemplating his life. The next day as she returns from work, she is relieved to see his truck in the driveway. When she enters the house, she finds him dead, having shot himself in the chest with his hunting rifle.

SUMMARY AND KEY POINTS

While a combination of risk factors may precipitate suicide, they are only potential predictors of suicide. When assessing risk factors, also consider an individual's protective factors, which guard against suicidal behavior. The interaction between risk factors and protective factors gives a better indication of an individual's risk for suicide than risk factors alone.

- Risk factors for suicide can be classified into 4 basic areas:
    - **demographic factors:** Older, white males are at the highest risk for suicide, followed closely by young people.
    - **diagnostic factors:** Individuals who are diagnosed with mental or medical illness represent a higher risk group. The mental illnesses that are at highest risk include depression, Bipolar Disorder, comorbid substance abuse, and personality disorders.
    - **psychological factors:** Individuals who are suicidal exhibit these psychological factors: cognitive distortion, helplessness, hopelessness, impulsivity, and/or external locus of control.
    - **environmental factors:** Environmental influences on suicide risk are social support, access to means, and precipitating events.
- Protective factors for suicide include the following:
    - connectedness
    - a positive worldview
    - coping skills
- Myths about suicide are plentiful and damaging. It is important to remember that suicidal behavior is preventable, treatable, and passing. People who experience suicidal thoughts and feelings need appropriate social and professional support.

RESOURCES AVAILABLE THROUGH THIS MODULE:

- Federal Information on Suicide Prevention
  Federal information on suicide prevention from national websites.
- How to Help a Person Contemplating Suicide
  Points on how to help a person contemplating suicide.
- Local and State Resources
  Local and State resources for the topic of suicide.

REFERENCES USED IN THIS MODULE:

Anderson RN. Deaths: Leading Causes for 2000. *Hyattsville, Md: National Center for Health Statistics, National Vital Statistics Reports 50.* 2002.

Appleby L, Dennehy JA, Thomas CS, Faragher EB, Lewis G. Aftercare and clinical characteristics of people with mental illness who commit suicide: a case-control study. *Lancet.* 1999; 353: 1397-1400.

Baldessarini R. Reducing suicide risk in psychiatric disorders. *Current Psychiatry.* 2003; 2(9): 14-24.

Baldessarini RJ, Tondo L, Hennena J. Treating the suicidal patient with bipolar disorder: reducing suicide risk with lithium. *Ann N Y Acad Sci.* 2001; 932: 24-43.

Borowsky IW, Ireland M, Resnick M. Adolescent suicide attempts: risks and protectors. *Pediatrics.* 2001; 107(3): 485-493.

Brown G, Beck A, Steer R, Grisham J. Risk factors for suicide in psychiatric outpatients: a 20-year prospective study. *J Consult Clin Psychol.* 2000; 68(3): 371-377.

Busch K, Fawcett J, Jacobs D. Clinical correlates of inpatient suicide. *J Clin Psychiatry.* 2003; 64(1): 14-19.

Chynoweth R, Tonge JI, Armstrong J. Suicide in Brisbane -- a retrospective psychosocial study. *Aust N Z J Psychiatry.* 1980; 14: 37-45.

Conwell Y, Duberstein PR, Cox C, Herrmann J, Forbes N, Caine ED. Age differences in behaviors leading to completed suicide. *Am J Geriatr Psychiatry.* 1998; 6: 122-126.

Conwell Y, Duberstein PR. Suicide in elders. *Ann N Y Acad Sci.* 2001; 932: 132-150.

Druss B, Pincus H. Suicidal ideation and suicide attempts in general medical illnesses. *Arch Intern Med.* 2000; 160(10): 1522-1526.

Edwards M, Holden R. Coping, meaning in life, and suicidal manifestations: examining gender differences. *J Clin Psychol.* 2003; 59(10): 1133-1150.

Fawcett J, Rosenblate R. Suicide within 24 hours after assessment in the emergency department: look for and manage anxiety. *Psychiatr Ann.* 2000; 30(4): 228-231.

Feldman J, Finguerra L. Managed crisis care for suicidal patients. *In: Ellison JB, ed. Treatment of Suicidal Patients in Managed Care. Washington, DC: American Psychiatric Press, Inc.* 2001.

Fisher BJ, Haythornthwaite JA, Heinberg LJ, Clark M, Reed J. Suicidal intent in patients with chronic pain. *Pain.* January 2001; 89(2-3): 199-206.

Garofalo R, Wolf RC, Wissow LS, Woods ER, Goodman E. Sexual orientation and risk of suicide attempts among a representative sample of youth. *Arch Pediatr Adolesc Med.* 1999; 153: 487-493.

Goldston D, Daniel SS, Reboussin BA, Reboussin DM, Frazier PH, Harris AE. Cognitive risk factors and suicide attempts among formerly hospitalized adolescents: a prospective naturalistic study. *J Am Acad Child Adolesc Psychiatry.* 2001; 40(1): 91-99.

Gotsch K, Annest J, Mercy J, Ryan G. Surveillance for fatal and nonfatal firearm-related injuries -- United States, 1993-1998. *In: Centers for Disease Control and Prevention. CDC surveillance summaries. April 13, 2001. MMWR Morb Mortal Wkly Rep.* 2001; 50: (SS-2):1-36.

Grandin L, Yan L, Gray S, Jamison K, Sachs G. Suicide prevention: increasing education and awareness. *J Clin Psychiatry.* 2001; 62(suppl 25): 12-16.

Haw C, Hawton K, Houston K, Townsend E. Psychiatric and personality disorders in deliberate self-harm patients. *Br J Psychiatry.* 2001; 178: 48-54.

Hawton K, Zahl D, Weatherall R. Suicide following deliberate self-harm: long-term follow-up of patients who presented to a general hospital. *Br J Psychiatry.* 2003; 182: 537-542.

Hendin H, Maltsberger J, Lipschitz A, Haas A, Kyle J. Recognizing and responding to a suicide crisis. *Ann N Y Acad Sci.* 2001; 932: 169-187.

Henriksson MM, Aro HM, Marttunen MJ, et al. Mental disorders and comorbidity in suicide. *Am J Psychiatry.* 1993; 150: 935-940.

Horesh N, Rolnick T, Iancu I, et al. Coping styles and suicide risk. *Acta Psychiatr Scand.* 1996; 93(6): 489-493.

Hughes D, Kleespies P. Suicide and the medically ill. *Suicide Life Threat Behav.* 2001; 31(suppl): 48-59.

Jacobs DG, ed. The Harvard Medical School Guide to Suicide Assessment and Intervention. *San Francisco, Calif: Jossey-Bass Publishers.* 1999.

Keilp J, Sackeim H, Brodsky B, Oquendo M, Malone K, Mann J. Neuropsychological dysfunction in depressed suicide attempters. *Am J Psychiatry.* 2001; 158(5): 735-741.

Kessler RC, Borges G, Walters EE. Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Arch Gen Psychiatry.* 1999; 56: 617-626.

Kishi Y, Robinson R, Kosier JT. Suicidal ideation among patients with acute life-threatening physical illness. *Psychosomatics.* 2001; 42: 382-390.

Lecrubier Y. The influence of comorbidity on the prevalence of suicidal behaviour. *Eur Psychiatry.* 2001; 16: 395-399.

Lester D, Yang B. Unemployment and suicidal behaviour. *J Epidemiol Community Health.* 2003; 57: 558-559.

Leverich G, Altshuler L, Frye M, et al. Factors associated with suicide attempts in 648 patients with bipolar disorder in the Stanley Foundation Bipolar Network. *J Clin Psychiatry.* 2003; 64(5): 506-515.

Malone KM, Oquendo MA, Haas GL, Ellis SP, Li S, Mann JJ. Protective factors against suicidal acts in major depression: reasons for living. *Am J Psychiatry.* 2000; 157(7): 1084-1088.

Maltsberger J, Hendin H, Haas A, Lipschitz A. Determination of precipitating events in the suicide of psychiatric patients. *Suicide Life Threat Behav.* 2003; 33(2): 111-119.

Mann JJ, Waternaux C, Haas GL, Malone KM. Toward a clinical model of suicidal behavior in psychiatric patients. *Am J Psychiatry.* 1999; 156(2): 181-189.

Mann JJ. A current perspective of suicide and attempted suicide. *Ann Intern Med.* 2002; 136(4): 302-311.

Maris R, Berman A, Silverman M, Goldblatt M. Physical illness and suicide. *In: Comprehensive Textbook of Suicidology. New York, NY: Guilford Press.* 2000.

McDaniel JS, Purcell D, D'Augelli A. The relationship between sexual orientation and risk for suicide: research finding and future directions for research and prevention. *Suicide Life Threat Behav.* 2001; 31(suppl): 84-105.

McIntosh J. U.S.A. Suicide: 2001 Official Final Data. *Washington, DC: American Association of Suicidology.* 2003. Available at: http://www.floridasuicideprevention.org/PDF/2001datapg.pdf Accessed on: 2010-06-15.

National Center for Health Statistics. Health, United States, 2007 with chartbook on trends in the health of Americans. *Hyattsville, Md: National Center for Health Statistics.* 2007.

Neeleman J, Halpern D, Leon D, Lewis G. Tolerance of suicide, religion and suicide rates: an ecological and individual study in 19 western countries. *Psychol Med.* 1997; 27(5): 1165-1171.

Nierenberg A, Gray S, Grandin L. Mood disorders and suicide. *J Clin Psychiatry.* 2001; 62(suppl 25): 27-30.

Nordentoft M, Breum L, Munck L, Nordestgaard A, Hunding A, Bjaeldager P. High mortality by natural and unnatural causes: a 10 year follow up study of patients admitted to a poisoning treatment centre after suicide attempts. *Br Med J.* 1993; 306: 1637-1641.

Oquendo MA, Malone KM, Ellis SP, Sackeim HA, Mann JJ. Inadequacy of antidepressant treatment for patients with major depression who are at risk for suicidal behavior. *Am J Psychiatry.* 1999; 156: 190-194.

Oquendo MA, Malone KM, Mann JJ. Suicide: risk factors and prevention in refractory major depression. *Depress Anxiety.* 1997; 5: 202-211.

Oquendo MA, Mann JJ. Identifying and managing suicide risk in bipolar patients. *J Clin Psychiatry.* 2001; 62(suppl 25): 31-34.

Pearson JL, Caine ED, Lindesay J, Conwell Y, Clark D. Studies of suicide in later life: methodologic considerations and research directions. *Am J Geriatr Psychiatry.* 1999; 7: 203-210.

Qin P, Agerbo E, Mortensen P. Suicide risk in relation to socioeconomic, demographic, psychiatric, and familial factors: a national register-based study of all suicides in Denmark, 1981-1997. *Am J Psychiatry.* 2003; 160: 765-772.

Rihmer Z. Bipolar disorders and suicidal behaviour. *Bipolar Disorder.* 2002; 4(S1): 21.

Sanchez H. Risk factor model for suicide assessment and intervention. *Prof Psych Res Pr.* 2001; 32(4): 351-358.

Shea SC. The Practical Art of Suicide Assessment. *New York, NY: John Wiley.* 1999.

Shenassa ED, Rogers ML, Spalding KL, Roberts MB. Safer storage of firearms at home and risk of suicide: a study of protective factors in a nationally representative sample. *J Epidemiol Community Health.* October 2004; 58(10): 841-848.

Sherman C. Suicide risk: identify short-term factors. *Clinical Psychiatry News.* 2002.

Villani S. Impact of media on children and adolescents: a 10-year review of the research. *J Am Acad Child Adolesc Psychiatry.* 2001; 40(4): 392-401.

Whitley E, Gunnell D, Dorling D, Smith GD. Ecological study of social fragmentation, poverty, and suicide. *Br Med J.* 1999; 319: 1034-1037.

Wintemute G, Parham C, Beaumont J, Wright M, Drake C. Mortality among recent purchasers of handguns. *N Engl J Med.* 1999; 341(21): 1583-1589.