Pathology and risk factors in suicidal adolescent

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Many risk factors have been implicated in suicidal behavior. In order to gain some clarity in this web of multiple risk factors, a meaningful organization of the data is needed. In this chapter we will rely on Orbach's (1997) taxonomy of risk factors in order to facilitate in the organization of data related to suicidal behavior in adolescents. In the first part we will focus on psychopathology and risk factors. In the second we will discuss theories, models and pathways to suicidal behavior in adolescents.

Psychopathology

Research on suicidal adolescents suggests that psychopathology is very common within this population. Post mortem studies show that more than 90% of adolescents who commit suicide have at least one major psychiatric disorder; this is especially prominent among older adolescent committers (Gould, Greenberg, Velting & Shaffer, 2003). Furthermore, a leading cause for hospitalization among adolescents, is suicidal behavior. Follow-up studies on former adolescent patients show that 7.1% of the inpatient males committed suicide within a 6 year follow up. (Pelkonen, Marttunen, Pulkkien Koivisto, et al. 1996). Psychiatric disorders are also very common in adolescent suicide attempters.

Affective Disorders. The most common disturbances among suicidal adolescents are affective disorders. It has been estimated that approximately 60% of adolescents who complete suicide and 71% of adolescents who attempt suicide suffer from affective disorders (Brent, Perper, Goldstein, Kalko, Allan, Allman, & Zelenak 1988).

Major depression is the most common affective disorders within the population suicidal adolescents (Ahrens & Linden, 1996). However depression within this population is further divided along gender lines: suicidal adolescent girls are more likely to suffer from depression than suicide adolescent boys (See Gould, Greenberg, Velting, Shaffer, 2003).

Substance Abuse. Substance abuse (drugs and alcohol) has also been identified as related to completed suicide and suicide attempts. Bertolete, Fleischmann, De Leo, and Wasserman (2003) report that 17.6% of adolescents who completed suicide were diagnosed as substance abusers. Suicidal ideation was also found to be substance abuse related (Groleger, Tomori, and Kocmur, 2003).

Regarding the causal relationship behind the etiology that links substance abuse and suicide, Goldberg, Singer, and Garno (2001) believe that psychoactive substances are destabilizers capable of inducing manic or depressive episodes, heightening sensitivity to interpersonal loss,
and reducing coping abilities in response to stress. Substance abuse was additionally hypothesized to reduce inhibition to self-destructive behavior (Tompson, Mazza, Herting, Randell, and Eggert, 2005).

**Schizophrenia.** While schizophrenia is popularly considered a high-risk pathology insofar as suicidal behavior, there remains a great lack of consensus among researchers. Representing one end of the spectrum of opinions on the schizophrenia-suicide link, Gould et al. (2003) report that schizophrenia accounts for few of all youth suicide. However, at the opposite end of this spectrum, Bertolote et al. (2003) review suggests that 44% of youth suicides involve schizophrenic illness.

**Borderline Personality.** Suicidal behavior is relatively common among youngsters with borderline personality disorder (Tanney, 1992). Furthermore, recent evidence indicates that such patients usually complete suicide attempts. Stone (1989) estimates that about 9% of female adolescents diagnosed as borderline personality disorder ultimately commit suicide. Suicidal behavior in this group is usually a manifestation of emotional instability, poor affect regulation, aggression, and impulsivity, which are common in these patients.

**Eating Disorders.** Elevated completed suicide and attempted suicide rates have also been found in youngsters with eating disorders. In fact, the suicide risk posed by eating disorders is comparable to the risk posed by major depression and conduct disorder (Bulik, Sullivan & Joyce, 1999). Kandel, Ravis, and Davies (1991) found that the correlation between eating disorders and suicidal ideation was sustained even after controlling for symptoms of depression.

**Conduct disorders.** Conduct disorders involving antisocial and aggressive behavior, are also significant risk factors for suicidal behavior in youth (Rapp & Woodarski, 1997). Conduct disorders were found to be predictive of attempted suicide in adolescents even after adjusting for all other covariates (Seeley, 2002).

**Posttraumatic Stress and Panic disorders.** Recent studies have found an association between posttraumatic stress and suicidal behaviors among adolescents (Mazza, 2000). However, this association was not sustained after adjusting for co-morbid psychiatric problems (Wundrich, Bronisch & Wittchen, 1998). Similarly, panic attacks are also a repeated trigger of suicidal behaviors in adolescents, even after adjusting for co-morbid psychiatric disorders (see Gould et al., 2003).

**Comorbidity and Gender in Pathology.** When considering the bearing of psychiatric illness on adolescent suicidal behavior, two mediating variables must be accounted for: gender, and comorbidity. Male and female adolescents were found to be affected differently by the
different risk factors (e.g. Andrews & Lewinsohn, 1992). This gender-based differentiation was recently demonstrated by Fennig, Geva, Zalsman, Weitzman, Fennig and Apter (2005), who found that while antisocial behavior and depression are predicting factors for male attempters, type of defense mechanism and destructiveness are predictive for female attempters. Comorbidity is another mediating variable when assessing suicide risk in adolescents with psychiatric disorders. Beautais, Joyce, Mulder, Fergusson (1996) suggest that the odds for suicide by a person who suffers from one psychiatric disorder is 17.4 compared to the odds for a person with no psychiatric diagnosis. The odds for a person who suffers from two diagnosis of psychiatric disorder is 89.7. However, Houston (2004) found no such effect.

**Emotional States**

**Depressed mood.** Depressed mood can appear with or without a diagnosis of major depression. Depressed mood in and of itself is one of the most critical risk factors for suicidal behaviors among young adults. Wetzler, Asnis, Hyman, and Virtue (1996) examined severe attempters, non-severe attempters, suicide ideators, and non-suicidal adolescents. On the one hand, they found that depressed mood distinguished between the three suicidal groups. Yet they also found that depressed mood is fundamentally associated with all forms of suicidality. Similarly, Spirito, Valeri, Boergres, and Donaldson (2003) found that the base-line for depressed mood was the most strongly related factor to future suicidal ideation and attempts. An additional study found that when depressed mood is controlled for, other factors may become non-significant (Wichstrom & Rossow, 2002).

**Hopelessness.** While a strong association has been established between hopelessness and suicide in adults (Beck, Steer, Kovacs, and Garrison, 1985), such an association is less incisive in adolescents. Multiple studies report a strong association between hopelessness and suicidal behavior in adolescents (e.g Horesh, Orbach, Gothelf, Efrati & Apter, 2003; Tompson, Mazza, et al., 2005). Yet, a most recent study of Turkish adolescents found that hopelessness did not predict suicide risk within their sample (Sayar & Bozkir, 2004). This seeming contradiction can be resolved considering the recent findings of Eposito, Spirito, Boergers, & Donaldson, (2003) indicating that hopelessness may be more critical for multiple suicide attempters than for single suicide attempters.

There is also some lack of clarity regarding the role of hopelessness in male versus female suicide attempters. One study found that hopelessness added significantly to the prediction of suicide risk scores in female juvenile detainees but did not add to the prediction of suicide risk.
scores in males (Sanislow, Grilo, Fehon, Axelrod, and McGlashan, 2003). In a study of suicidal survivors of sexual abuse, hopelessness was more strongly related to suicidal behavior in male survivors of sexual abuse, while depressive symptoms were more critical to suicidal behavior in female survivors (Bergen, Martin, Richardson, Allison, and Roeger 2003). Some studies found that hopelessness increases suicide risk in youngsters who internalize anger but not in those who externalize anger, and that hopelessness plays a more significant role for older adolescents than for younger ones (Barbe, Williamson, Bridge, Birmaher, Dahl, Axelson, 2005). Some studies, such as that of Goldston, Daniel, Reboussin, Reboussin, Frazier & Harris (2001), report that when depression is controlled for hopelessness no longer has an effect on suicidality.

**Anxiety.** Excessive anxiety, especially trait anxiety, is an emotional characteristic of suicidal adolescents (Fennig et al 2005). De Wilde, Kienhorst, Diekstra, and Walters (1993) found that both hospitalized and non-hospitalized adolescent attempters experienced significantly more state and trait anxiety compared to non attempters. Later, Goldston, Sergent,-Daniel, Reboussin, Reboussin, Frazier, and Kelley (1999) distinguished trait anxiety, and not state anxiety, as associated with suicidal behavior in adolescents.

**Anger, Hostility and Irritability.** Suicidal adolescents, seem to experience more anger, more hostility, and more irritability than their non-suicidal counterparts (Penn, Esposito, Schaeffer, Fritz, and Spirito, 2003). With regard to anger, some studies show that internalized anger is more critical to suicidal behavior than externalized anger (Cautin, Overholser, and Goetz, 2001). Whereas other studies point to externalized anger as the more critical of the two types as far as suicidal behavior is concerned (Zlotnick, Walfsdorf, Johnson, and Spirito, 2004).

**Shame, Guilt, and Loneliness.** Feelings that are related to interpersonal relationships were also found to be associated with adolescent suicidal behavior. Savarimuthu (2002) analyzed audio-taped suicide notes of suicidal adolescents, following the path of expressed social emotions moment by moment. The investigators demonstrated that shame can be a devastating experience to the self, one which can ultimately leads to suicidal behavior. (See also Loraas, 1997).

Guilt feelings were found to be characteristic of suicidal young adults (Haliburn, 2000). Suicidal youngsters experience far more inappropriate guilt than non-suicidal youngsters (Catalina-Zamora and Mardomingo-Sanz, 2000).

Suicidal adolescents report a strong sense of loneliness (Batigun, 2005). Guertin, Lloyd-Richardson, Spirito, Donaldson, and Boergers (2001) found that sense of loneliness increases the odds of self-mutilation among suicidal adolescents by almost 6 fold.
Mental pain. Shneidman (1993) introduced the concept of unbearable mental pain, or as he terms it "psychache," (see also Orbach, Mikulincer, Sirota and Gilboa-Schechtman, 2003) as the immediate reason for suicidal behavior. Shneidman's concept, psychache, refers to a generalized emotional state that is different from any specific negative emotion. In recent studies, mental pain appears as a distinguished characteristic of the emotional state of suicidal adolescents (Orbach and Iohan, 2005). Evren, Ogel, Tamar, and Cakmak (2001) found that 66.7% of a given suicidal sample self-reported the reason underlying their suicidal attempt was "to get away from boredom and pain" (see also Haliburn 2000).

Emotional Instability Some suicidal adolescents are characterized by no specific emotional state of anxiety, anger, hopelessness, but rather by rapid shifts in temperament. Such rapid shifts are related to difficulties in emotional regulations, and were found to be implicated in suicidal behavior by some researchers (e.g., Miller, Wyman, Huppert, Glassman, and Rathus, 2000).

Personality traits

Personality traits in and of themselves do not cause suicide. The same trait can be adaptive or non-adaptive depending on the situational demands. However, when some traits interacts with other risk factors it may increase the risk of suicide by intensifying the suicidal crisis.

Impulsivity, Aggression, and Negativism. Impulsivity, aggression, and the tendency to act out in face of frustration and interpersonal conflict are some of the most frequent personality traits found in suicidal adolescents (Fennig et al., 2005; Horesh et al., 2003). Eliason (2001) has found that impulsivity was the best discriminator between attempters and non-attempter and that among impulsive individuals there is a very short span time between the suicidal thought and the attempt, thus exhibiting a difficulty controlling anger.

Suicidal adolescents are often described as negativistic and as rejecting outside help for their emotional problems (Deane Wilson & Ciarrochi, 2001; Orbach, 1997).

Ambitiousness. However counterintuitive, the traits of ambitiousness and perfectionism may contribute to self-destructive behavior. An ambitious youngster who cannot compromise between high aspirations and the limitations of reality may chose to escape reality by taking his/her own life. Such a youngster may perceives compromise or failure as less bearable than death.

Perfectionism is particularly critical in the development of hopelessness, although this is attenuated after controlling for depressive cognition (Donaldson, Spirito, and Farnett, 2000).
Yet, socially prescribed perfectionism was found to predict the wish to die as a primary factor for the suicide attempt among adolescents (Boerges, Spirito, and Donaldson, 1998).

**Low Self-esteem.** Low self-esteem and a negative self-concept are significantly related to adolescent suicidal behavior (Martin, Richardson, Bergen, Roeger, and Allison, 2005). Low self-esteem was able to distinguish young suicide ideators from suicide attempters (Merwin & Ellis, 2004).

**Identity Confusion** Identity confusion, a lack of self-cohesiveness and self-integration, low self-complexity, lack of differentiation between self and parents, and discrepancies between actual self, normative self, and ideal self represent structural aspects of personality that are related to adolescent suicidal behavior. These structural aspects of personality hamper the ability to regulate and cope, thereby increasing self-negativity and suicidal risk (Orbach, Mikulincer, Stein, and Cohen, 1998; Brunstein-Klomek, Orbach, Meged, and Zalsman, 2005)

**Deficits**

**Self-regulation.** Self-regulation is conceptualized as the ability to control a range of internal systems that include affect regulation, modulation of anger, inhibition of self-destructive behavior, minimization of negative ruminations, and self-soothing. It has been repeatedly found that suicidal youngsters encounter difficulties in regulation of negative emotions, negative cognitions, and impulsive behaviors (e.g. Esposito et al., 2003; Zlotnick, Donaldson, Spirito, and Pearlstein, 1997). Negative attributional style is also a self-regulation deficit that influences suicidal behavior. Negative attributional style includes: attributing positive outcomes to external forces or change and negative outcomes to the self (Schwartz, Kaslow, seely & Lewinsohn., 2000, Rotheram-Borus, 1988), negative self appraisal, and negative appraisal of one's own degree of controllability of stressful events.

Fritsch, Donaldson, Spirito, and Plummer (2000) found that suicidal adolescents, as compared to non-suicidal adolescents, use more forceful and less conforming regulation strategies. Piquet & Wagner (2003) have categorized the cognitive and regulative patterns of suicidal youngsters into two systems and subsequently into four sub-types of coping strategies, yielding: approach-effortful (e.g. seeking advice and support), avoidance-effortful (e.g. "band-aid" solution), approach-automatic (e.g. blaming others), and avoidance-automatic (e.g. alcohol and drug abuse, self-destructive thoughts). It was found that, relative to the comparison group, the adolescent suicide attempters made fewer approach-effortful and avoidance automatic coping responses, which are considered the more adaptive coping strategies of the four.
**Cognitive Deficits.** Problem solving deficits are a distinct cognitive characteristic of suicidal youngsters, expressed in their tendency to produce more problematic alternatives and fewer effective alternatives in interpersonal problem solving tasks. Meta-cognitively, suicidal adolescents exhibit more pessimistic appraisal of their ability to solve problems. In addition, their problem solving abilities are compromised by their inability to produce specific autobiographic memories (see review by Specker & Hawton, 2005). Suicidal adolescents are also inclined to hone in on problematic aspects of a stressful situation, yet, at the same time they resort more to wishful thinking strategies when confronted with a problem (Goldston et al. 2001). In problem situations, suicidal adolescents prefer drastic solutions and dependence on others (Orbach, Bar-Joseph, and Dror, 1990). A history of repetitive failures seems to condition suicidal youngsters to perceive problems as inherently unsolvable (Orbach, Mikulincer, Blumenson, Mester, and Stein, 1999) and as out of their control (Wilson , Stelzer, Bergman, and Kral, 1995).

Suicidal youth also have a cognitive style of an automatic production of negative thoughts (Nock & Kazdin, 2002). Events and situations are automatically evaluated negatively (Kienhorst ,de Wild , Diekstra and Wolters., 1992). Negative attributions are assigned to one's self, to others, and to the future (Rudd, 2000).

**Stressors**

**Life events.** A variety of life events have been found to be related to suicidal behavior, including bereavement, breakdown of close relationships, interpersonal conflicts, financial difficulties, legal setbacks, or disciplinary problems (Fergusson, Woodward, and Howood, 2000). Different life events have a different impact at different ages. Pertaining to interpersonal conflicts, parent-child conflicts constitute a greater risk factor for early adolescence, whereas romantic difficulties constitute a greater suicide risk factor during later adolescence (Groholt, Ekeberg, Wichstrom, and Haldorsen, 1998).

Beyond the general pool of life events, certain specific life events have consistently been found to influence the presence of suicidal behavior in young adults. Sexual abuse and physical abuse, for example, were found strongly associated with suicidal behavior. Sexual abuse is statistically predictive of suicidal behavior even after controlling for depression, hopelessness, and family dysfunction. Girls who report distress about their experience of sexual abuse have a three-fold increased risk of suicidal thoughts and plans compared to non-abused girls. Similarly, male adolescents who are highly distressed about their experience of sexual abuse have a ten-fold increased risk for suicide attempts compared to non-abused adolescent males.
However, the relationship between sexual abuse and attempted suicide also varies along gender lines: sexually abused males face a significantly higher risk of suicide (55%) than sexually abused adolescent females (29%) (Martin, Bergen, Richardson, Roeger, and Allison, 2004). Similar findings were found with regard to physical abuse (Johnson, Cohen, Kasen, Smailes, and Brook, 2001).

**Interpersonal Stressors** Interpersonal stressors within the family context have also been implicated in youth suicidal behavior. These stressors include conflicts, rejections, harsh demands and expectations, faulty communication, scapegoating, family dysfunction, negative attachment, and lower parental responsiveness (Cetin, 2001, Orbach, 1989, Wagner, Silverman, and Martin, 2003). However, there is some evidence that family effects might be mediated by adolescent’s psychopathology (Wagner et al., 2003).

**Losses** Losses that are early, recent, or multiple are empirically associated with suicidal behavior. Losses can take on the form of death, separation, or parental divorce (Liu & Tein, 2005). In a recent study, Orbach and Iohan (2005) studied experiences of loss among psychiatric suicide attempters, non-attempters, and controls. The types of losses studied included the loss of a close person (e.g. parent), material loss (e.g. loss of a job), mental loss (e.g. loss of faith), and physical losses (e.g. loss of good health). Compared to the non-attempters and the control group, the suicidal group reported more mental loss, physical losses, and loss of close person. Number of losses was found to be significantly related to suicidal behavior. The relationship between type of loss and number of loss and suicidal behavior were sustained even after controlling for depression.

**Failure.** Failure, especially academic failure, constitutes a critical life stressor, involved in suicidal behavior among youngsters. Poor academic performance (compared to above average) is associated with a five-fold increased likelihood of a suicide attempt and has long-term predictive value of suicidality (Richardson, Bergen, Martin, Roeger, and Allison, 2005).

**An Accumulation of Negative Life Events and Stressors.** Liu and Tein (2005) found that an accumulation of negative life events, regardless of the type of event, is a critical factor in suicidal behavior. They report that 4-6 events have an odd ratio of 1.40; 7-9 events have an odd ratio of 2.02, and 9 and up events have an odd ratio of 3.73 (see also Roberts, Roberts, and Chen, 1998).

**Facilitators and inhibitors of suicidal behavior**

Facilitators and inhibitors (protective) factors can increase or decrease the probability of acting out suicidal impulses. These factors are not considered direct causes for suicide, rather
they determine whether the suicidal person will act on the already existing suicidal tendencies, ideation, or wishes.

**Facilitators**

**Attitudes Towards Death and the Body.** Attraction to death and distorted beliefs about death (e.g. perceiving death as an improved state of life, Orbach, 1994), bodily dissociation (numbness, detachment, high sensation threshold) and negative attitudes toward the body (Orbach, Mikulincer, King, Cohen, & Stein, 1997; Orbach, Gilboa- Schechtman, Sheffer, Meged, Har-Even and Stein, 2006) have been identified as facilitators of suicidal behavior. In accordance with these findings, attraction to death and bodily dissociation make it easier for the suicidal youngster to choose death and to carry out an aggressive act against his/her own body.

**Vicarious Exposure to Suicide.** Other facilitators include exposure to the suicidal acts of others, specifically when the possibility of vicariousness is more tangible. One obvious example is being made aware of the suicide of a friend (Stack, 1996) or of a close relative (Gallo and Pfeffer, 2003). However, a less apparent, yet not less potent form of vicarious exposure to suicide via media reports of a suicidal act committed by an individual. The magnitude of suicide committed as a result of media facilitation increases in proportion to the amount, duration, and prominence of media coverage on suicide. Suicide coverage may increase suicidal behavior in several ways. Repeated exposure of a given suicidal act may promote identification with the attempter as well as with the method of attempt. Repetitive reporting of suicidal acts may also portray suicide as normative behavior. Yet, on the other hand, presenting suicide as a feature story has been hypothesized to promote the idealization of suicide and to elicit the wish to receive attention (Orbach, 1997).

**Availability of Means.** Availability of means is an important facilitator of suicidal behavior especially in impulsive suicides (Hawton, Townsend, Deeks, Appleby, Gunnell, and Bennewith, 2001). The presence of firearms within the home is a critical risk factor for suicide in adolescents (Brent et al., 1988; Grossman, Muller, Riedy, Dowd, Villaveces, Prodzinski et al., 2005).

**Social Norms**

Social norms in and of themselves can facilitate suicide. In Domino and Takahashi's (1991) taxonomy study, Japanese medical students scored higher than their American counterparts on the Right to Die Scale. Differences in the scores were found related to suicide rates in the two countries.
Inhibitors

Social Support, Connectedness, and Activeness. Social support can serve as strong protective factors against suicide. Peer and family support were found to reduce various risk behaviors in youngsters who were sexually abused (Perkins & Kenneth, 2004). Similarly, a sense of connectedness to parents or peer groups, as well as a sense of belonging to a positive school climate was found to be strong protective factor against emotional distress and suicidal behavior (Perkins & Kenneth, 2004). Extra-curricular activities such as engaging in sports also contribute to suicide prevention in adolescents (Perkins & Jones, 2004; Tomori & Zalar, 2000).

Religiosity. The concept of religiosity as a protective factor was first introduced by Durkheim (1951). The protective value of religion lies in that it offers cohesiveness and integration (Durkheim, 1951), social support and sense of belongingness (Pescosoloido & Georgiana, 1989), commitment to a few core life saving beliefs (Stack, 1992), rules and customs (Greening & Stoppelbein, 2002) and moral obligations (Kyle, 2004).

Subsequently, Greening and Stoppelbein, (2002) studied intrinsic and extrinsic religiosity and orthodoxy and their relationship to suicidality, depression, and hopelessness among a very large population of white Christian adolescents. In this study, orthodoxy emerged as a strong protective factor against suicidality (see also Hilton, Fellingham, and Lyon, 2000, Gould et al., 2003).

Family Cohesion. Family cohesion in the form of mutual involvement, shared interests, and emotional support is another protective factor. This was found to be true in a longitudinal study of middle school students (Mckeown, Garrison, Cuffe, Waller, Jackson, and Addy, 1998). One way that family cohesion can serve as a protective factor is that it seems to imbue its members with a sense of responsibility to family, as well as to close ones in general (Kyle, 2004). Family cohesion was also found to mitigate suicidal behavior, depression, and life stress (Rubenstein, Halyon, Kasten, Rubin, & Stechler, 1998).

Self-Cohesion. Sense of self-cohesion and a strong sense of identity have been found to protect against suicidal behavior especially under stressful conditions. Katzir (2005) evaluated sense of self-cohesion and identity in 18 year olds prior to enlisting in the army, and did a follow-up on them throughout their military service. He found that young soldiers who were characterized by a strong sense of self-cohesion and identity were more resilient and less suicidal even under very stressful conditions compared to their counterparts.
Theoretical Perspectives on Suicidal Behavior in Adolescents

The Diathesis-Stress-Hopelessness Hypothesis. One of the most widely accepted theories regarding the relationship between problem-solving deficits and suicidal behavior is the Stress-Diathesis-Hopelessness hypothesis (SDH) developed by Schotte and Clum (1987). According to Schotte and Clum, individuals with difficulties in divergent thinking are unable to develop efficient solutions while under stress. As a result of their inability to conceive of a rational solution, their efforts are often reduced to purely psychological reactions of helplessness and hopelessness, leading individuals to view suicide as the only solution.

Several authors have recently suggested to elaborate the SDH hypothesis so that it considers not only the leverage of the cognitive deficits in problem-solving, but also the equally important role of the under-evaluation of one's own ability to problem-solve. Dixon, Happner and Rudd, (1994) Rudd et al. (1994), and Yang and Clum (1996) have found that under-evaluation of one's own ability to resolve problems, rather than ones actual ability or performance, is the critical factor in the SDH process. This is also consistent with assertion that even highly intelligent individuals, who have the cognitive abilities to create solutions, may encounter problem-solving difficulties due to their lack of confidence (Shure, 1997)

Family dynamics as an explanation for suicidal behavior in adolescents

Familial rejection. Clinical observers of suicidal youngsters (Sabbath, 1969) report that often these youngsters had experienced strong rejection by their parents from very early on in life. Sabbath (1969) gives examples of commonplace phrases employed by the parents of suicidal adolescents, which actually convey quite deadly message. One mother, for example, was in the habit of telling her 15 year old daughter to "drop dead." Another example is of a father who would often convey the following message to his daughter: "If you've got one rotten apple in the barrel you've got to get rid of it." (See also Orbach 1988)

The irresolvable problem. Orbach (1986, 1988, 1989) suggests that suicidal tendencies in youth are directly linked to familial situations and demands that pressure the child or adolescent to solve irresolvable problems. Some typical irresolvable problems include problems that are irresolvable by the very nature of the problem (e.g., to excel beyond one's capability), a family problem that is disguised as a problem of the child (e.g. one parent exacerbating the child's problem and using it as leverage to keep the other parent within the family unit), limiting alternatives for solutions, and creating a new problem whenever the old one is resolved. In a recent empirical test of this theory (Orbach et al., 1999), four experiential elements of facing irresolvable problems have emerged: the feeling that the demands are
unattainable (realistically so); the sense of an inextricable commitment to parental happiness; sensing that the situation heeds that the young adult be problematic; and giving up individuality for the sake of the parents.

The symbiotic family Richman (1978) found that suicidal adolescents were often the product of a family characterized by symbiosis without empathy. Symbiosis without empathy is a forced strangling bond without any expression of love and warmth. The parents demand total loyalty, yet are distant and estranged. As a result of these paradoxical conditions, the symbiotic family develops a massive generalized identity, with little distinction among the different members, and each family member is often ironically left with a feeling of isolation and loss of self. Another result of the family's extreme drive for unity is that intimate relationships outside the home become a complete taboo. Ultimately, the youngster is forced to choose between a complete break with the outside world or a complete separation from the family. Therefore, when an adolescent from a symbiotic family experiences failure outside the family unit suicide often becomes a symbolic route for reunification and total fusion with the family. Thus, suicide in such youngsters is both an escape from as well as a reunion with the family.

The Propensity for Suicidal Behavior- A Biological Predisposition for Suicide

This theory suggests that there is a basic difference between suicidal and non-suicidal individuals in terms of an early propensity for suicidal behavior. One version of this theory was suggested by Mann, Waternaux, Haas, & Malone (1999), and it was expanded by Wasserman (2001). According to the propensity theory the suicidal propensity (stress-diathesis) is rooted in genetic, biological, and biochemical deficits (e.g. genetic inheritance, low serotonin activity). This propensity, which can be intensified by early and prolonged stress (e.g. mental illness, long standing relationship problems) creates a readiness to respond to life difficulties with hopelessness, suicidal ideation, and with the planning suicide attacks. The suicidal propensity also involves a tendency to act out impulsively and aggressively. The propensity becomes active when it interacts with self regulation deficits and current stressful life triggers such as acute psychiatric illness, loss, and separation or narcissistic injury.

Self Reported Reasons for Suicidal Behavior. Boergers et al (1998) studied male and female adolescents in a general hospital emergency room in terms of their self-reported reasons for their suicide attempt. The most frequently reported reason given for the suicide attempt was that they simply wanted to die, followed by the desire to be relieved from a terrible state of mind, to escape from an impossible situation, and to make people understand how desperate they feel. The rest of the reasons provided were of a more manipulative nature (e.g. to
influence someone, to find out whether someone loved you. These findings were also confirmed by Haliburn (2000).

**Theoretical and empirical models of suicidal behavior**

In order to understand the relationships and interactions between the many factors involved in suicidal behavior of adolescents in a more coherent way, several theoretical models have been introduced (e.g. Orbach, 2001; Beautrais, 2003; Rudd, 2000; Sandin, Chorot, Santed, Valiente, and Joiner 1998; Yang & Clum, 1996).

The various risk factors can be categorized into several main categories. Our review suggests the following categorization: biological factors, morbidity factors, background factors (e.g. age, gender), stressors and triggers, mediating and moderating factors such as cognitive deficits, emotional deficits (e.g. depressive mood), personality aspects (e.g. impulsivity), and facilitators and inhibitors (a.k.a. protective factors).

Different models may use different systems of categorization. For example in some models depression is conceptualized as a mediating factor (e.g. Thompson et al., 2005) while in others, depression is conceived of as a more independent morbidity factor (e.g. Wasserman, 2001). Some of the factors can appear in more than one category. For example, in Beautaris's (2003) model, life stress can appear first as an independent factor and later as a mediating factor.

While some theoretical models make use of many of the factors found to be involved in suicidal behavior, others make use of very few. Most of the theoretical models suggested emphasize interactional rather than linear models. The general trend of interaction that emerges within the various models is described as a flow from biological factors to morbidity factors, background factors, mediating factors, moderators, and finally facilitators and inhibitors.

What follows are three examples of empirical examinations of theoretical models of suicidal behavior in adolescents. Lewinsohn, Rohde, and Seeley (1996) examined the contribution of several independent variables on suicidal behavior in adolescents (thoughts about death, death wishes, suicidal ideation, suicide planning, less serious suicide attempts, more suicide attempts, multiple suicide attempts). The independent variables included psychopathology (depression, anxiety, disruptive behavior, and substance abuse), physical illness (number of sick days, number of doctors visits, physical symptoms), background/personal history factors (parental divorce/separation, death of a parent, teenage mother, moving away from home, suicide attempt by friend, death of a relative, poor social support, conflict with parents, daily hassles), interpersonal problems (involvement in arguments or fights,
breakup with a friend, emotional over-dependency, and emotional estrangement); mediating variables (negative cognitions attribution style, self esteem and coping skills). Lewinsohn et al. (1996) found that each factor (psychopathology, physical illness environment, and interpersonal) constituted a distinguished pathway to suicide with the first three showing a direct influence on suicidal behavior. At the same time, however, all four categories were also found to have an indirect contribution mediated by the faulty cognitions.

Orbach and Iohan (2005) found a different configuration of interaction. They studied personality characteristics (negative emotional regulation, tolerance for mental pain, gender dependency, perfectionism, and self-criticism), environmental stress (perceived stress, number of various types of loss), negative experiential aspects (mental pain), and depressive symptoms. Personality variables such as negative emotional regulation, self-criticism and perfectionism had a direct impact on suicidal behavior (ideation, tendencies and attempts). These variables as well as a tendency for dependence, were found to have an additional indirect impact as well, mediated first by perceived pressure and number of losses and then by mental pain and depressive symptoms. In contrast to Lewinson et al.'s (1996) model, Orbach and Iohan's model separated between personality aspects (e.g. perfectionism) and more subjective aspects (e.g. mental pain). However, similar to the Lewinson et al. (1996) model, multiple interactions were found among the independent and mediating factors.

Rather than following the interactional flow of different factors, Roberts et al. (1998) examined the accumulative impact of different contributing factors. Among other factors, they studied lifetime suicide attempts, age, gender, socio-economic status, depression, loneliness, life stress, fatalism, pessimism, and self-esteem. They computed the odd ratios of each variable for suicidal behavior and found depression, lifetime suicide attempts, and life stress to have the highest odds ratios respectively. They also found that the odd ratios for having one of the six factors examined was 3.48, and for six factors the odd ratios increased to 67. Other empirical models have discovered different factor structures and interactions for male and female adolescents (e.g. Lewinson, Rohde, Seeley, and Baldwin, 2001).

**Pathways to suicide**

Achenbach (1991) has distinguished between externalizing pathologies and internalizing pathologies in youth. Externalizing pathologies include such symptoms as delinquent behavior, aggressive behavior, impulsivity, oppositional behavior, and hyperactivity. Internalizing pathologies include withdrawal, somatic complaints, anxiety, depression, inhibition, and self-demandingness. These two types of pathologies can be linked to different pathways of suicidal
behavior in adolescents independent of negative life events. Similar findings were reported by Vermerien, Ruchkin, Leckman, Deboutte, and Schwab-Stone, (2002)

Orbach (1997) has also distinguished between different pathways to suicide in general positing three clusters of suicidal behavior. The depressive perfectionist cluster (a.k.a. the internalizing cluster) is hypothesized to be mediated by severe negative emotions. The aggressive impulsive cluster (a.k.a. externalizing cluster) is hypothesized to be mediated by deficits in impulse control. The disintegrating cluster characterized by panic, severe anxiety and psychiatric pathology is hypothesized to be mediated by a severe loss of control.

As Wagner and Hustead (April, 2002) perceive it, the pathways to youth suicidal behavior are paved upon child-family relationships. One such pathway is the child driven pathway wherein the suicidal behavior is primarily enabled by the child’s problems. This pathway is characterized by parents who are supportive and competent, yet the child develops insecure or disrupted attachments towards the parents. Furthermore, the child's relationship with and treatment of his/her parents is distinctively negative and aggressive. This pathway involved children with high psychopathology to parents with low psychopathology. The child has a short history of suicidal behavior. His/her suicidal attempts, however, are highly lethal, are driven by an attempt to escape pain, and do not implicate the family. The second pathway is the parent-driven pathway wherein the child's suicidal behavior is primarily enabled by the parents. This pathway involves parents who are poorly competent, and who are insecure in their attachment to the suicidal child. Their treatment of and relationship with the suicidal child is marked by aggression and negativity. In this pathway the parents are highly psychopathological and the said child is low in psychopathology. The child has a long history of suicidal behavior, yet his/her attempts are low in lethality. The attempts are described as interpersonal and communication-based, and the family is implicated in precipitating the attempt. The third pathway posited by Wagner and Hustead is the reciprocal pathway characterized by: poor parental competence and support, high parental and child psychopathology, mutual parent and child insecure attachments, long history of suicidal behavior, parent and child share mutual perceptions of negative-aggressive relationships, lower lethality of attempts, attempts described as an interpersonal message, family precipitant attempt. The authors report finding strong empirical support for the first and third pathways and somewhat weaker support for the second pathway.

From a different perspective, Blatt (1995) posits personality develops as a consequence of a complex interaction between two fundamental lines: (a) the development of the capacity to establish mature and satisfying interpersonal relationships and (b) the development of a
realistic, positive, and integrated self-definition and identity. An overemphasized interpersonal relatedness may lead to an anaclitic (or dependent) depression, whereas overemphasized individuality and self-definition may result in self-critical (or introjective) depression. Anaclitic depression involves a deep longing to be loved and cared for. The overly individualized person is characterized by self-criticism, feelings of inferiority, and guilt. Each of these imbalances were found to be related to suicidal behavior in different ways (see also Brunstien-Klomek, et.al 2005 and Fehon, Grilo, & Martino 2000; Orbach & Iohn 2005). Both anaclytic depression and introjective depression were found to be implicated in suicidal behavior.

Applying a cognitive approach, Dieserud, Rosamb Ekeberg and Kraft (2001) offer a two path model of suicide attempt for all ages that is somewhat parallel to Blatt's two pathway model. The first pathway begins with low self-esteem, loneliness, and separation or divorce, which advanced to depression, then hopelessness, suicide ideation, and finally suicide attempt. The second pathway begins with a low self-esteem and a low sense of self-efficacy, followed by a negative self-appraisal of one's own problem solving capacity, and poor interpersonal problem-solving skills, and finally leading up to suicide. This model emphasizes the importance of addressing both depression and hopelessness, as well as problem-solving deficits when working with suicide attempters.

**A concluding remark**

There is an abundance of information on suicidal behavior in general and on adolescent suicidal behavior in particular. Unfortunately, the natural conclusion- that we have a good understanding and knowledge of this tragic phenomenon- is not fully accurate. One reason for this counterintuitive reality is that empirical findings have been transmitted through various and non-concurring theories and terminology. It is our belief that the first step to in furthering our knowledge of suicide is to promote a coherent organization of the data for the sake of advancing conceptual clarity. Such attempts can help us to better define our future goals in the study of suicide and eventually lead to an improved effort in the prevention of suicidal behavior in youngsters.
**Reference List**


