Clinical Manual of Prevention in Mental Health

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In honor of our patients, whose struggles we strive to alleviate; through them, we gain the insights necessary to advance the prevention of mental illnesses and the promotion of mental health.

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Identifying and Understanding Risk Factors and Protective Factors in Clinical Practice

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Historically, psychiatry, psychology, and related disciplines have focused on disease mitigation, deficit reduction, and health restoration, to the relative exclusion of competence promotion and health maintenance. Similarly, early efforts to understand the development of psychopathology emphasized sources of risk and vulnerability for disorders, rather than those of strength and protection. This chapter adds to the growing effort to restore this balance by reviewing the extant literature on risk factors and protective factors in development and psychopathology, with the ultimate aim of informing emerging models of strengths-based, integrative approaches to clinical practice. Our review is not specific to a particular mental health outcome (e.g., depression, anxiety, antisocial behavior) or prevention effort (i.e., primary, second-

ary, or tertiary prevention, or universal, selective, or indicated preventive interventions; see Cowen 2000; Institute of Medicine 1994). Instead, we provide a conceptual introduction to the study of risk and protection, and we conclude with suggestions regarding the applications of these concepts in clinical practice.

Risk Factors: Predicting Maladjustment and Pathology

The field of mental health is plagued by the manifold challenges of uncovering the causes of psychiatric disorders and of predicting low-base-rate phenomena such as individual mental illnesses. Early efforts in this vein focused on the identification of *high-risk individuals*, those for whom the probability of a particular disorder was heightened as a function of identifiable (and quantifiable) risk factors. Research on the offspring of schizophrenic parents exemplifies this model, wherein youth deemed to be at risk due to parental psychopathology were followed across time to identify factors associated with the appearance (or avoidance) of schizophrenia (Garmezy 1974; Sameroff et al. 1987; Watt et al. 1984).

Risk factors are variables that are associated with an increased probability of negative outcomes. These are characteristics of individuals, environments, or communities that directly or indirectly contribute to maladaptation. In addition, the same risk factor may have both direct and indirect effects. Low birth weight, for example, is directly associated with a number of physical health problems, but the effects of low birth weight on psychosocial maladaptation may be indirect, mediated by the effects that such infants' difficulty being soothed may have on parents' behaviors toward their infants. *Vulnerability factors* are similar to risk factors in that, they too, increase the probability of negative outcomes, but the negative influence of vulnerability factors interacts with context, such that their strength is magnified in contexts of risk or adversity (Masten and Garmezy 1985). For example, poor emotion regulation skills may be especially likely to lead to maladaptation in stressful or chaotic environments.

Risk factors have been identified and studied at multiple levels of analysis, including at the individual level, at the family level, and in broader social/cultural context (Table 2–1). Common individual-level risk factors include low IQ, premature birth, high stress reactivity, and low educational attainment (i.e., school dropout). Some of these factors represent inherent vulnerabilities (e.g., genetic polymorphisms) that are not likely targets for intervention due to the difficulties or impossibilities of altering them. However, from an intervention and prevention perspective, it is important to be aware of risk factors, even those that are not likely to respond to intervention. These factors can indicate individuals who are most in need of prevention efforts, or who may require modification of interventions to address their particular vulnerabilities. Other risk factors are reflective of life experiences that may themselves be preventable (e.g., school dropout, unemployment), but engender risk of further maladaptation once they have occurred.

Table 2–1. Examples of risk factors in multiple contexts

Individual-level risk factors
Low educational attainment
Stress reactivity
Cognitive disabilities; below-average intelligence
History of premature birth
Genetic liabilities
Family-level risk factors
Maternal age at birth of child
Loss of caregiver or disruption of care
Maltreatment; poor parenting quality
Single parenthood
Parental substance abuse or psychopathology
Intrafamilial conflict
Sociocultural-level risk factors
Neighborhood violence or disorder
Poverty, unemployment, or homelessness
War, political violence
Discrimination

Family-level factors that are associated with an increased risk of mental health problems are numerous and well documented and include parenting quality (Harnish et al. 1995), family violence and maltreatment (Cicchetti and Lynch 1995; Yates et al. 2003a), and parental mental illness or substance abuse (Field 1998; Luthar et al. 1998), among others. Again, many of these so-called risk factors are also the target of some prevention efforts themselves, such as programs designed to prevent maltreatment or to support the early identification of postpartum depression. Beyond individual and family factors, aspects of the individual's broader social or cultural context may enhance the risk of negative outcomes, including associations with deviant peers (Patterson et al. 2000; Snyder et al. 2005), neighborhood violence or deprivation (Leventhal and Brooks-Gunn 2000; Limber and Nation 1998), and political unrest or war (Pine et al. 2005).

As suggested by the interactions of risk and vulnerability factors, contemporary risk research emphasizes the dynamic nature of risk across time and context. Risk factors rarely occur in isolation, and their meaning may change across the developmental continuum. Although there are some examples of specificity in the relations between risk factors and later psychopathology, such as the experience of early and extensive trauma with dissociative disorders, or high familial expressed emotion and schizophrenia (Butzlaff and Hooley 1998; Goodwin and Sachs 1996), most disorders do not evidence such specificity in causal risk factors. Thus, early efforts to identify individual, disease-specific risk factors were quickly supplanted by cumulative risk models, which incorporate the natural comorbidity of risk and attend to the consistent lack of specificity between specific risk factors and individual negative outcomes. Cumulative risk indices reflect the total number of risk and vulnerability factors affecting the development and functioning of an individual, family, or population (Sameroff 2006; Werner and Smith 1982; Zeanah et al. 1997). These models consistently reveal *risk gradients*, wherein the number of risk factors robustly predicts negative outcomes, including mental health disorders (Appleyard et al. 2005; Rutter 1979; Sameroff and Chandler 1975). These risk gradients reflect the well-recognized nature of risk factors—that they tend to co-occur rather than to exist in isolation—and understanding risk in context is critical to effective interventions. Furthermore, contextualizing patients' problems requires a recognition of the multiple levels at which risk occurs, including the community level and the systems involved (e.g., education, social services), as well as sociocultural variations in the impact of risk factors.

Issues of measurement and definition are central to the accurate and effective specification of risk status. As can be seen in Table 2–1, some risk factors appear readily quantifiable because they are naturally dichotomous (e.g., premature birth, homelessness, death of a parent or other caregiver). Yet even these seemingly straightforward risks may exert differential effects on development depending on their timing, context, and duration. For example, the death of a parent in childhood is readily determined as present or absent, but a more nuanced understanding of risk acknowledges that the impact of this risk factor may vary as a function of the age at which the loss occurred, the nature of the relationship with the deceased caregiver, the quality of the relationship with the remaining caregiver(s), and the surrounding familial and cultural context within which the loss occurred; the importance of considering developmental timing in particular is discussed later in the chapter (in the "Developmental Timing" section). If seemingly dichotomous risks prove nuanced, the challenge is even more striking for risks that can have a range of values (e.g., maternal age at the birth of a child, family income). In these instances, cut points frequently define the threshold for risk. Specifying a cut point may be informed by normative or objective data, such as known levels at which certain factors carry higher risk. Alternatively, cut points may be established based on individual samples, by a median split or a particular percentile rank, which is common practice in research studies. Cut points that are specific to samples are less preferable, due to issues with generalizability to other samples, but are often unavoidable (Obradovic et al., in press).

Despite multiple challenges in the identification and quantification of risk, cumulative risk indices afford multiple advantages in understanding the processes by which risk factors affect development, both by capturing the reality of co-occurring risk factors and by creating a statistically powerful way of measuring risk in natural environments (Bronfenbrenner 1994; Masten and Coatsworth 1998). Just as the accumulation of risk and vulnerability factors increases the likelihood of maladaptation, the elimination or reduction of such factors reduces the probability of negative outcomes. Thus, the identification of risk factors is critical to effective prevention, as knowledge regarding what increases the likelihood of a certain (negative) outcome, such as a mental health disorder, is the first step toward preventing that outcome (Durlak 1998).

Clinicians must attend to risk factors, in terms of both the broad developmental risks described above and the individual risks that may be salient for a given evaluation (e.g., expressed emotion in evaluating schizophrenia, loss or stressful life events in evaluating depression, prior behavior in evaluating suicidality). Yet, as alluded to earlier, contemporary clinical practice needs to advance beyond risk- and deficit-based models of maladaptation to integrate and embrace asset- and competence-based models of adaptation. For clinicians to attend *only* to risk factors is to miss a large part of the story of how psychopathology does, or does not, develop, which is often just as readily explained by the presence of strengths, or protective factors.

Protective Factors: Promoting Positive Development and Health

The study of strength and protection grew out of traditional risk research, in which a significant minority of individuals was observed to attain positive adjustment despite exposure to numerous risks and adverse experiences (Luthar 2006; Werner and Smith 1982). These individuals' developmental trajectories typify *resilience*, the dynamic developmental process wherein the individual is able to utilize resources within and outside of the self to negotiate current challenges adaptively and, by extension, to develop a foundation on which she or he can rely in the face of future challenges (Yates et al. 2003b). The growth of resilience research has fueled interest in understanding and facilitating positive developmental outcomes, in addition to predicting and ameliorating negative outcomes (Yates and Masten 2004a). Factors that are associated with positive development may include *assets*, which are generally positive influences for all individuals (e.g., high intelligence, good parenting quality) and are sometimes referred to as *promotive factors*. *Protective factors*, which are especially important for counteracting the deleterious impact of risk factors (e.g., positive adult role models outside the family, such as mentors), may also be called *compensatory factors* (Masten and Shaffer 2006).

Like risk and vulnerability factors, assets and protective factors operate across multiple contexts and levels of analysis (Table 2–2). Individual capacities such as emotion regulation, humor, and empathy (Eisenberg et al. 1997; Kestenbaum et al. 1989; Masten 1986) are complemented by family cohesion

Table 2–2. Examples of protective factors in multiple contexts

Individual-level protective factors
Cognitive abilities; above-average intelligence
Positive self-perceptions, self-esteem
Sense of humor
Self-regulation skills (impulse control, coping, emotion regulation)
Family-level protective factors
Warm and supportive parenting or family relationships
Mentors or other adult role models
Sociocultural-level protective factors
High-quality educational opportunities
Socioeconomic advantage
Supportive relationships with peers or nonfamilial adults

and social influences such as peer relationships (Chen et al. 2003; Cumsille and Epstein 1994), as well as community-level influences such as school quality and neighborhood resources (Leventhal and Brooks-Gunn 2000; Ozer and Weinstein 2004; Pleibon and Kliewer 2001). Furthermore, a powerful but often overlooked protective factor is a history of prior positive adaptation. Development is cumulative such that current positive adaptation with respect to salient developmental issues will engender later competence (Yates et al. 2003b), and many domains of adaptation show evidence of continuity over time (Burt et al. 2008; Masten et al. 2005). In this way, the strength of protective processes (and also of risk processes) may be magnified across time by virtue of the cumulative nature of development (Sroufe 1979).

Identifying and evaluating assets and protective factors bring challenges that are similar to those already discussed with respect to risk and vulnerability factors. For example, some of the factors identified as assets or protective factors, such as parenting quality or IQ, exist on continua. In some cases, we may conceptualize one end of the continuum as risk and the other as protection, yet the meaning of the various points on the continuum may change with context (e.g., developmental timing, culture). Thus, assets and protective factors are more than mirror images of vulnerability factors and risk factors. Indeed, the very same construct may operate as a vulnerability factor in one context and as a protective factor in another. Determining whether a given

variable operates as a risk factor, a protective factor, or both, can be a conceptual distinction but is often also an empirical question; by investigating how a variable relates to outcomes of interest at both high and low levels, its influence can be better understood (Stouthamer-Loeber et al. 2002). For example, the "action" of SES, as it relates to adjustment outcomes, may only be at low levels (i.e., poverty) or may occur along the entire SES gradient.

Contemporary research has revealed that individual factors (and their developmental impact) transact with developmental contexts (e.g., age, gender, culture) and levels of analysis (e.g., genetic, physiological, relational, cognitive, emotional) (Cicchetti and Curtis 2007). As knowledge and techniques in the fields of genetics and neuroimaging have improved, we have gained a better understanding of risk and protective processes that were previously considered difficult to detect or to change (Hanson and Gottesman 2007; Rutter 2006). For example, genes were once thought to be static and unidirectional markers of risk, as in adoption and twin studies that have shown a higher risk of disorders such as alcoholism among individuals more closely genetically related to someone with that disorder (e.g., Heath et al. 1997).

However, more recent findings from the field of behavioral genetics provide a more nuanced understanding of the dynamic interplay between genes and environment. For example, the work of Suomi (2000) with rhesus monkeys provides evidence of gene-environment interactions in allelic variations of the serotonin (5-hydroxytryptamine) transporter gene (*5-HTT*). Whereas individuals with a short allele *5-HTT* polymorphism were originally thought to be at higher risk of later problems, due to expected inefficiency in serotonergic function, Bennett and colleagues (1998) showed that the impact of the allelic variation was dependent on rearing environment. That is, in contexts of positive rearing by mothers, the polymorphism was associated with *higher* social status and lower aggression, whereas those reared by peers only (in contexts simulating neglectful care) showed *increased* aggression and *lower* social status. Other researchers have confirmed that the meaning of a given factor as compromising or promotive varies as a function of the caregiving milieu; this research has included studies with human populations (Caspi et al. 2002, 2003).

Similar variation may be seen across community and cultural contexts. For example, authoritarian, restrictive parenting has long been viewed as a risk factor in traditional family systems research (Baumrind 1968; Darling and Steinberg 1993). Yet research reveals that restrictive parenting operates as a protective factor in a high-risk setting, although it is negatively related to competence in a low-risk setting (Baldwin et al. 1990). Similarly, data suggest that the optimal level of maternal psychological and behavioral control varies as a function of the level of problem behaviors in the peer groups of African American adolescents (Mason et al. 1996). Extending this pattern to cross-cultural research, deVries's (1984) study of temperament and adaptation among Masai infants in East Africa provides an excellent example of the intersection of context and protection. Contrary to the widely held belief in Western cultures that an "easy" temperament is adaptive, a highly reactive temperament was found to be more successful in eliciting the care needed to foster survival in a sample of Masai infants. Although a comprehensive discussion of interaction effects is beyond the scope of this chapter, it is important to recognize that the influence of a given factor as either protective or vulnerability enhancing is moderated by the context in which it is embedded, and the developmental stage at which it is introduced. Amid these many challenges, the natural question becomes: How can we integrate our knowledge of risk and protective factors into contemporary clinical practice?

Empirical and Clinical Implications

As risk research has emphasized the multiplicative salience of cumulative risks, so too has intervention research begun to recognize the power of cumulative protection for mitigating the negative effects of risk and promoting wellness (Wyman et al. 2000; Yoshikawa 1994). These wellness-promotion models, as well as their risk-reduction counterparts, have clear applicability to clinical practice. Thus, clinicians are encouraged to attend to both presenting complaints and *presenting competencies*—that is, the individual strengths of each patient that are likely to influence the onset and course of a psychiatric disorder. These efforts will provide the clinician with a more comprehensive view of the patient's presenting problem in context, and may offer leverage to enhance positive adaptation and stave off negative outcomes.

However, the leading edge of these efforts rests at the translation point between research and practice, and between efforts to identify discrete predictors of subsequent outcomes and efforts to identify the developmental pro-

cesses that mediate such outcomes. Despite the challenges of translating research into practice, prevention science remains an applied field that is explicitly tied to its basis in theoretical and empirical science (Cicchetti and Hinshaw 2002). From this foundation, several clear applications to the science and practice of prevention and intervention warrant mention.

Cause, Correlate, or Consequence?

Sometimes it may not be clear whether risk factors are correlates (proxies for other experiences) that relate to negative outcomes, or whether they are causal risk factors that actually engender the outcomes of interest (Kraemer et al. 2001). Prevention scientists have encouraged researchers who study risk and protective factors not to settle with mechanistic descriptions of which variables are statistically predictive of outcomes, but to develop more thorough contextual accounts of the factors that are evidently influential or causal (Biglan 2004). As noted above, this is particularly relevant for clinicians, who typically work with patients on an individual basis and can work to understand the specific context of risk and protection for each patient, recognizing that even the most statistically significant of risk factors may operate differently for each person.

It can also be difficult to ascertain whether risk factors represent actual experiences that are detrimental to development, or whether they serve as markers for the underlying or mediating processes by which the factors influence adaptation (Obradovic et al., in press). For example, economic strain in a family is often associated with poor outcomes for children, and thus is a commonly identified risk factor. However, studies that have focused more closely on the processes by which this factor leads to a child's maladaptation have found that the effects are actually mediated by the intervening effect that economic strain has on parental stress, which leads to lower parenting quality, in turn affecting the child's adaptation (Conger et al. 1994). Findings such as these emphasize that, beyond identifying factors associated with the increased likelihood of various outcomes, we must carefully consider the *processes* by which these associations occur.

Process-Oriented Research and Developmental Timing

An emphasis on the processes by which risk and protective factors influence the development of psychopathology has represented a large step forward

from earlier correlational research that simply sought to detect associations among variables. In focusing on process in prevention science, the integration of developmental theory has been of primary importance (Cicchetti and Hinshaw 2002; Institute of Medicine 1994). Understanding developmental norms, understanding the processes by which risk and protective factors lead to developmental outcomes, and consideration of the timing and importance of developmental transitions are all critical in designing and implementing effective prevention programs (Cicchetti and Hinshaw 2002). Methodological advances, such as the implementation of large-scale, longitudinal studies and the availability of newer statistical methods such as multilevel modeling, have increased our understanding of how risk and protective factors work, and that they often work through intervening or indirect mechanisms. For clinicians, the implications of this research indicate that it is not enough to identify risk and protective factors, but to discover *how* these factors are influencing adaptation for a patient. The process by which risk and protective factors operate for each individual can vary, due to interactions with other environmental variables, the developmental stage of the patient, and the patient's history of prior adaptation in basic domains such as relationships, cognitions (i.e., patterns of thinking and sources of bias), and emotions (i.e., positive or negative affectivity and emotion regulation).

An awareness of developmental theories and norms is crucial to the implementation of prevention efforts. Certainly, a central tenet of prevention science holds that intervention and prevention efforts are more likely to be effective when they take place early, prior to the establishment of maladaptive pathways. Thus, developmental timing cannot be ignored in providing clinical services with maximal effectiveness (Farmer and Farmer 2001).

The targets of intervention and prevention efforts also change across development (Yates and Masten 2004b). During infancy and early childhood, clinical prevention efforts are focused largely on primary prevention. These prevention efforts seek to avert developmental pathways toward maladaptation. Areas of intervention in this developmental period may include bolstering parenting skills, improving the child's nutrition, and achieving school readiness. In middle childhood, many prevention efforts are school-based, because this is a primary context for development and functioning during this age period. Because academic achievement and peer relations are both highly salient domains during this age period, prevention strategies often focus on

early identification of peer problems (such as bullying or aggression) or problems that interfere with school performance (such as attention-deficit/hyperactivity disorder or learning disorders). These prevention strategies may be characterized more as secondary prevention, initiated by the early identification of problems. As noted previously, these secondary prevention strategies may be most effective if they capitalize on existing protective factors or other areas of strength in prior development.

By adolescence, peers have become an even more dominant social influence and during this time preventive interventions may frequently focus on preventing delinquency or substance abuse by reducing negative peer influences. In addition, new developmental tasks, such as early romantic relationships and preparation for jobs or higher education, begin in adolescence. Following the transition to adulthood, prevention is more likely to be secondary or tertiary in nature, working to minimize incipient problems or prevent the relapse of psychopathology. However, the transition to parenting is one new context for many adults that may warrant the implementation of primary prevention efforts.

A consideration of developmental timing also draws attention to the windows of opportunity that can occur as particularly effective points for prevention or intervention. Developmental systems theory posits that, during times of change, a system is more unstable as it seeks a new homeostasis (Ford and Lerner 1992; Smith and Thelen 2003). These transitions result in a system that is vulnerable to outside influence, which includes the (presumably positive) influence of clinical interventions. Such transition points may be normative, such as starting school, or specific to individuals already treated for psychopathology, such as discharge from inpatient treatment.

Risk- and Resilience-Informed Intervention

In applying knowledge of risk and protective factors to intervention and clinical practice, several points bear additional emphasis. First, it is important to be cognizant of the differences between distal and proximal risk factors (Cicchetti and Hinshaw 2002). In general, there are more likely to be opportunities for intervention or amelioration when targeting proximal risk factors, which are "nearer" to the individual, such as cognitive/behavioral coping strategies, educational attainment, or emotion regulation skills. However, certain prevention efforts may choose to focus on more distal factors at the level of the social environment, such as the Head Start program (Garces et al. 2002) or the Abecedarian Project (Campbell et al. 2002), which seek to improve educational opportunities for children living in poverty. These projects are designed to yield "more bang for the buck," by targeting many individuals at once. However, as noted above, many distal risk or protective factors work through their indirect influence on intervening factors; careful consideration must therefore be given to the processes by which these factors effect change.

From resilience research, there is also a reminder that prevention efforts should focus not only on reducing negative outcomes but also on promoting competence and positive adaptation (Cicchetti and Hinshaw 2002; Cowen 2000). Adaptation occurs in multiple domains, although clinicians are too often trained to focus on domains in which their patients are not doing well. Identifying areas of strength will not only promote an individual's sense of self-worth but also likely mitigate the impact of risks. In addition, emphasizing wellness-promotion aspects of prevention efforts may be less stigmatizing than identifying at-risk populations for targeted interventions, which may increase the acceptance by communities and consumers that is necessary for program implementation.

Conclusion

Much of this chapter has reviewed the ways that science has informed clinical practice, yet it is important to mention that clinical practice can inform science as well. The complicated nature of human development and functioning in various contexts can be highly individualized, and a great deal about risk and resilience can be learned from case examples (Biglan 2004; Masten et al. 1990). As clinicians learn more about the lives-in-context of the individuals they are treating, they gain information and insight that can be used to refine the scientific findings and theories that were derived from broad samples and generalizable results.

The key points that we wish to emphasize in this chapter, regarding the nature of risk and resilience, unfortunately do not readily condense into quick lists that are easily memorized. Instead, the most enduring, and vexing, truth about the processes of risk and resilience is that they are immensely complicated and questions about how these processes work lack simple answers.

Mechanisms of risk and protection cannot be understood without capturing the context in which these processes unfold. Furthermore, contexts are dynamic and change over time, with the course of development or according to changing circumstances. Thus effective prevention efforts must focus not only on reducing risk factors and promoting protective factors, but on the *processes* by which these factors exert their influence on development and adaptation.

Key Points

- Clinicians must recognize that risk and protective factors exist and operate at multiple levels of analysis, including at the individual level, at the family level, and in broader social/cultural context. Furthermore, the influences and interactions between levels are frequently bidirectional in nature, as well as dynamically changing over time.
- Understanding context is critical to effective interventions—when clinicians learn about patients' presenting complaints, they must be understood in the broader context of risk and protection within which those complaints are embedded. This requires cultural competence and sensitivity to diversity, as well as understanding of the community and the various systems (e.g., social services, specialty medical care, educational systems) in which the patient is involved.
- Clinicians should attend to both presenting complaints *and* presenting competencies. That is, by asking patients and their families about their strengths, clinicians may gain a better, more useful picture of the presenting problem in context, and may open up avenues of change through intervention.
- *Processes* are key; it is critical to identify not only what is going on in patients' lives, but *how* it is going on. The *how* is critical to effective intervention, and these processes are often related to basic adaptive processes (relationships, cognitions, emotions). To the extent that we can restore, protect, or foster these processes, our practice will be improved.

- Consideration of developmental timing is necessary in understanding the context in which risk and protective factors operate. Risk and protective factors, as well as the processes by which they exert their effects, may vary over time. Similarly, the most appropriate targets of intervention and prevention efforts are likely to change across developmental stages.

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3

Prevention of Mood Disorders

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This chapter addresses the prevention of mood disorders, which are disturbances of emotion that affect an individual's life. The term *depression* is an umbrella term that encompasses many different forms of affective or mood disorders. All of them share certain characteristics. However, *unipolar depression* or *major depression* is manifested only by symptoms of depression, whereas *bipolar depression* represents depression in the context of a history of hypomania or mania (National Institute of Mental Health 2007). Unipolar depression can also encompass dysthymic disorder and depressive disorder not otherwise specified. Bipolar disorder is also known as manic-depressive disorder or sometimes bipolar affective disorder (National Institute of Mental Health 2007).

Epidemiology is the study of the distribution of disorders in the population but it also examines the etiology and course of diseases. The distribution of disorders is reported as *incidence* and *prevalence*, the former referring to the rate at which new cases of a disorder arise, and the latter meaning the proportion of