Children and Youth Services Review 34 (2012) 2295–2303

Contents lists available at SciVerse ScienceDirect

Children and Youth Services Review

journal homepage: www.elsevier.com/locate/childyouth

Resilience in children and youth: A review

Staci M. Zolkoski [a], Lyndal M. Bullock [b,*]

[a] University of North Texas, 1150 Union Circle #311335, Denton, TX 76203, United States
[b] Special Education, University of North Texas, 1150 Union Circle #311335, Denton, TX 76203, United States

ARTICLE INFO

Article history:
Received 12 June 2012
Received in revised form 27 August 2012
Accepted 29 August 2012
Available online 5 September 2012

Keywords:
Resilience
Risk factors
Protective factors

ABSTRACT

Many children are reared in less than ideal family conditions (e.g., poverty, violence, substance abuse, family dissonance, family or personal illnesses). Situations such as these may inhibit the normal intellectual, social, and emotional development of children and youth, thus interfering with them reaching their full potential as adults. Conversely, many children encounter such adversities and fair well in spite of the challenges and may be considered to be resilient. This paper offers a review of the literature dating back to the 1970s to the present. In addition, several monumental longitudinal studies dating back to the 1950s are included. The paper reviews the (a) definition of resilience, (b) origins and recent advances in researching resilience, (c) protective factors, (d) models of resilience, (e) issues when researching resilience, (f) measures of resilience, and (g) resilience-based interventions.

1. Introduction

In this modern, complex society, it has become common to identify certain children as *at-risk* of failing to succeed because of the hardships in their young lives (Rak & Patterson, 1996). Poverty, violence, substance abuse, family dissonance, and illness represent a few potential vulnerabilities. According to Rak and Patterson, researchers are concerned that at risk children stand only slight chances of attaining their full potential as adults. Furthermore, there are worries that at risk individuals will become dysfunctional to the point of being incapable of supporting themselves or establishing rewarding relationships with others. However, many children who encounter stress and adversity in life fair well despite their exposure to severe challenges (Alvord & Grados, 2005; Brooks, 2006; Masten, 2007, 2011; Masten, Best, & Garmezy, 1991; Masten & Coatsworth, 1998; Rak & Patterson, 1996; Werner, 1986). Children who succeed in spite of adversity have been identified as *resilient*; possessing certain strengths and benefiting from protective factors that help them overcome adverse conditions and thrive.

It is essential to understand what environmental factors place children and youth at-risk as well as what protective factors may be nurtured to improve and support resilience in children (Alvord & Grados, 2005). This paper offers a review of the literature on resilience beginning in the 1970s to the present. Much of the literature from the 1970s is based on monumental longitudinal studies dating back to the 1950s. The paper begins by reviewing risk factors including biological and environmental influences. Resilience is defined and the origins and recent advances of resilience are delineated. Protective factors are then discussed, specifically, individual characteristics, family conditions, environmental supports, and other factors associated with what we deem as resilience. In addition, we highlight models of resilience, issues for consideration when researching resilience, and measures of resilience. Finally, individual, family, and social environment resilience-based interventions are examined.

2. Risk factors

In the medical field, the concept of risk has long been common; however, the acceptance of the concept began to emerge in the 1970s in the behavioral sciences (Jens & Gordon, 1991). Over the past three decades, signs of trouble (e.g., rates of divorce, teenage pregnancy, poverty) have materialized for child development in the United States (Masten & Coatsworth, 1998) causing much attention to the status of children regarding school success, behavior, and physical and mental health.

Children and youth face multiple risk factors on the path to adulthood (Brooks, 2006). Risk factors are not black boxes to fit children where they can be neatly labeled and safely stored away (Werner, 1986). They are *probability* statements, the likelihood of a gamble whose levels of risk change depending on the time and place. The predictive validity of early risk indicators varies with (a) the time of assessments, (b) the developmental systems assessed, and (c) individual variations in the responses of children to the changing context of their caregiving environments.

2.1. Biological factors

Congenital defects and low birth weight are primary among biological factors (Rak & Patterson, 1996). Both are more likely to occur when low-income mothers neglect to obtain suitable nutrition and

* Corresponding author. Tel.: +1 940 565 3583.
E-mail addresses: Staci.zolkoski@unt.edu (S.M. Zolkoski), Lyndal.bullock@unt.edu (L.M. Bullock).

0190-7409/$ – see front matter © 2012 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.childyouth.2012.08.009

medical care during pregnancy. Children of drug-addicted mothers may be born with serious physical and emotional problems that are environmental in origin.

2.2. Environmental factors

Children born healthy may become at-risk due to (a) poverty, (b) education level of parents, and (c) family conflict (Brooks, 2006; Luthar, 1991; Masten, 2011; Rak & Patterson, 1996). Negative life experiences (e.g., maltreatment, violence, abuse, neglect) are predictors of poor life outcomes (Brooks, 2006; Luthar, 1991; Masten, 2011; Rak & Patterson, 1996). Minority status (Luthar, 1991; Masten, 2011) and racial discrimination (Brooks, 2006) are also predictive of poor outcomes for children and youth. For example, children of African and Hispanic descent are often disproportionately disadvantaged due to living in severely distressed neighborhoods with reduced accessibility to social supports, community services, employment opportunities, and high-quality schools.

Risks for general or specific problems in development often co-occur (Masten, 2001). Accumulation of these risks at one point in time or over time is inherently related to poor outcomes (Brooks, 2006; Masten, 2001) including substance use (Brooks, 2006; Resnick, 2000), violent behavior (Fergus & Zimmerman, 2005; Resnick, 2000), poor academic achievement, school dropout (Brooks, 2006), teenage pregnancy, juvenile crime, mental health disorders, and emotional distress (Resnick, 2000). The extent of problems such as these demands solutions promoting positive development in children and youth to address underlying problems (Brooks, 2006). Risk typically implies the potential for negative outcomes (Rak & Patterson, 1996); fortunately, according to Resnick (2000), there is evidence in the seminal works of the 1970s on child and adolescent resilience, that negative outcomes may be circumvented.

3. Resilience defined

According to Alvord and Grados (2005), numerous definitions of resilience require conditions of an identified risk or challenge followed by some defined measure of positive outcome. However, debate remains concerning what constitutes resilient behavior and how to best measure successful adaptation to hardship. Resilience is not an one-dimensional, dichotomous attribute that an individual has or does not have. It has been suggested that a resilient individual must show positive outcomes across multiple aspects of life over a period of time (Cicchetti & Rogosch, 1997). Moreover, resilience indicates the possession of several skills, in varying degrees, that help a person cope (Alvord & Grados, 2005). The common thread is that people have been able to lead more successful lives than expected despite being at greater risk than average for serious problems (Brooks, 2006).

For the scope of this paper, resilience refers to achieving positive outcomes despite challenging or threatening circumstances (Brooks, 2006; Masten, 2001; Masten et al., 1991), coping successfully with traumatic experiences, and avoiding negative paths linked with risks (Garmezy, Masten, & Tellegen, 1984; Luthar, Cicchetti, & Becker, 2000; Werner, 1992). An essential requirement of resilience is the presence of risk and protective factors helping to promote positive outcomes or reduce negative outcomes (Fergus & Zimmerman, 2005). Resilience theory is focused on strengths as opposed to deficits; rather it focuses on understanding healthy development and good outcomes in spite of exposure to risks (Masten, 2001).

According to Masten and Coatsworth (1998), resilience is an inferential and contextual construct necessitating two key kinds of judgments. First, there must be a significant threat to an individual's development. Secondly, there must be current or past dangers judged to have the potential to disrupt normal development. In other words, risk must be discernible. Oftentimes, risks are actually based predictors of adverse outcomes drawn from evidence that this condition is statistically linked to a higher probability of upcoming *bad* outcomes (Kraemer et al., 1997).

Everyone is born with an innate capacity for resilience. Resilient children work well, play well, love well, and expects well (Bernard, 1993, p. 44). Generally speaking, resilient children have five attributes: (a) social competence, (b) problem-solving skills, (c) critical consciousness, (d) autonomy (Bernard, 1993, 1995), and (e) sense of purpose (Bernard, 1995). Social competence includes qualities such as empathy, caring, flexibility, communication skills, and a sense of humor (Bernard, 1993, 1995). Children who have social competence establish positive relationships with adults and peers helping them bond with their family, school, and community. Problem-solving skills incorporate the ability to think abstractly giving children the ability to generate alternate solutions for cognitive and social problems. Planning and resourcefulness in seeking help from others are two important problem-solving skills. Critical consciousness involves having an insightful awareness of structures of cruelty (e.g., be it from an alcoholic parent) and generating strategies in overcoming them. Autonomy is a person having a sense of his or her own identity, capability to act independently, and ability to exert some control over the environment. Finally, a sense of purpose, according to Bernard (1995), involves having goals, educational aspirations, and a belief in a bright future.

4. Origins of resilience

Historically, the origins of resilience have deep roots in the field of medicine; however, research on resilience in the behavioral sciences began to emerge around 1970 (Cicchetti, 2006; Cicchetti & Curtis, 2006; Masten, 2007, 2011; Masten & Obradovic, 2006). According to Masten (2011), pioneering scientists contended that critical aspects of human function and development, crucial for understanding and promoting prevention of, resistance to, or recovery from psychopathology, had been profoundly neglected. Four decades of resilience research followed as scientists took to the challenge of this phenomenon (Masten, 2007). There have been three waves of research on resilience in development. The first wave of research came from scientists wanting to understand and prevent the development of psychopathology (Masten, 2011; Masten & Obradovic, 2006). These pioneer researchers acknowledged the importance of children who seemed to progress well under risky conditions (Masten & Obradovic, 2006). The second wave of resilience research concentrated on detecting the processes and regulatory systems that accounted for protective factors associated with resilience (Masten & Obradovic, 2006). The third wave arose due to a sense of urgency for the welfare of children growing up with adversities focusing on promoting resilience through prevention, intervention, and policy.

In large part, the science of resilience, according to Masten (2007), was molded by the visions, collaborations, and influences of pioneering scientists and their students; embarking on a continued mission to understand, prevent, and treat mental health problems as well as the consequences of major threats to development (e.g., premature birth, trauma). Some of the pioneering scientists include (a) Manfred Bleuler, (b) Lois Murphy, (c) Irving Gottesman, (d) Michael Rutter, (e) Norman Garmezy, and (f) Emmy Werner. These scientists recognized the significance of trajectories characterized by surprisingly positive adjustment or recovery after hardship in the lives of those they studied.

4.1. Manfred Bleuler

According to Watt, Anthony, Wynne, and Rolf (1984), Manfred Bleuler's longitudinal studies of schizophrenics and their families began numerous years before other risk research programs. In his monumental volume published in German in 1972 and translated into English in 1978, Bleuler reported his research methods and findings. Through his clinical observations, Bleuler found not only expected results but also remarkable evidence of strength, courage, and health in the midst of adversity. Bleuler (1984) delineates a paradoxical case

study of a 14-year old girl, Vreni, who raised her four siblings and cared for her alcoholic, irresponsible, emotional, mentally, and physically ill father (p. 540) in the absence of her mother, who was hospitalized with mental illness. Later, Vreni reported having a happy marriage, two healthy children, and a contented life.

4.2. Lois Murphy

From the beginning, early thinking on resilience, risk, and vulnerability incorporated neurobiological levels of consideration (Masten, 2007). Lois Murphy conducted a longitudinal study with 32 infants with an interest in examining the development of the children (Murphy, 1962; Murphy & Moriatry, 1976). Specifically, Murphy and colleagues were apprehensive of changes to coping patterns within the environment contributing to mastery of external pressures. They also examined patterns of coping with internal stress arising from sensitivities, challenges in *vegetative functioning*, and other weaknesses.

4.3. Irving Gottesman

Irving Gottesman supported a developmental view on mental illness. Using studies of twins, biological and foster families of schizophrenics, as well as his diathesis–stress theory, Gottesman set out to determine the etiology of schizophrenia (Gottesman, 1974; Gottesman & Shields, 1972). He suggested genetic and psychosocial levels of vulnerability, risk, and protection, combined over the course of development, effect pathways of individual phenotypic development toward or away from disorder. However, according to Masten (2007), these ideas were ahead of the technology available at the time to test specific hypotheses at the level of neurobiological, genes, or brain function processes.

4.4. Michael Rutter

Beginning in 1964, Michael Rutter conducted a series of epidemiological studies of educational, psychiatric, and physical disorders in children called the Isle of Wight Studies (Rutter, 1976, 1979). The children experienced parental marital conflict, low socioeconomic status, large family size, parental delinquency, maternal psychiatric disorder, or placement in government care. Rutter found that a single stressor did not have a significant impact on the children; however, a combination of two or more stressors weakened the likelihood of positive outcomes, and additional stressors increased the influence of all other existing stressors. Rutter concluded that limiting or eliminating stressors significantly increased the probability of positive outcomes for children.

4.5. Norman Garmezy

About 200 children from urban environments in the United States were studied by Garmezy et al. (1984). Children sampled had congenital heart defects or other physical disabilities. They primarily used social competence as the dependent variables including academic success, classroom behavior, and interpersonal competence. Based on their results, the authors present a three-model approach to stress resistance: compensatory, challenge, and protective factor models.

4.6. Emmy Werner

Werner conducted research on resiliency using longitudinal methods to study the outcomes of risk factors throughout the years. The Werner (1971) followed participants from birth to 32 years of age, making the study particularly valuable. Werner studied 660 children in Kauai, Hawaii beginning with the children's births in 1955. Of those, more than 200 were found to experience numerous risks due to perinatal problems, socioeconomic status, family instability, minimal educational stimulation, and poor emotional support within the family. Competence in adult life roles was examined in a follow-up studied at 32 years of age (Werner, 1993). Werner's four-decade-long study of high-risk infants living in poverty has assisted in laying the foundation for what is known today about resilience (Alvord & Grados, 2005).

The contributions of the aforegoing researchers offer interesting indications to *hot spots* for assimilating research across levels of analysis and also drawbacks to avoid in the enthusiasm of the fourth wave of resilience research (Masten & Obradovic, 2006).

5. Recent advances

According to Curtis and Cicchetti (2003), theoretical treatments of resilience have concentrated almost entirely on psychosocial levels of analysis to develop explanatory models. The developing research in the area of resilience incorporates numerous areas (Alvord & Grados, 2005). Some investigations have included children from various cultures. For example, Hart, Hofmann, Edelstein, and Keller (1997) set out to replicate findings in another culture, and Grotberg (1995) launched an international resilience project. Other studies (e.g., Curtis & Cicchetti, 2003; Rutter, 2002) have examined the influences of biological processes.

Rutter and the English and Romanian Adoptees study team (1998) examined the extent of developmental deficit and catch-up following adoption after severe global early deprivation of 111 Romanian children who came to the United Kingdom before the age of two years. At the time of adoption, most of the children showed significant gross physical and cognitive delays in development. However, when assessed at age four, many of the children showed substantial physical and cognitive catch-up.

Werner and Smith (2001) conducted a follow-up Kauai study which discovered that individuals, who as adolescents had problems, were able to change the course of their lives in dramatic ways by making sensible choices and taking advantage of opportunities. For example, as adults, some of those studied (a) continued their education, (b) learned new skills, (c) joined the military, (d) relocated to end relationships with peers who were deviant, and (e) chose healthy life partners.

Longitudinal studies have examined the outcome of individuals with learning disabilities and attention-deficit/hyperactivity disorder (ADHD) in order to determine factors that contribute to their resilience (Gerber, Ginsberg, & Reiff, 1992; Spekman, Goldberg, & Herman, 1992; Werner & Smith, 2001). Studies found that resilient learning disabled youth (a) look for personal control over their lives, (b) are willing to seek out and accept support, (c) set goals, (d) possess a strong will to succeed, and (e) demonstrate high levels of persistence. Miller (2002) found that one of the most noticeable differences between resilient and non-resilient students was that those who are resilient demonstrated an ability to identify success experiences, were able to identify their strengths, and showed strong self-determination to succeed. In a long-term prospective follow-up of young adults diagnosed with ADHD as children, Hechtman (1991) found that the existence of an influential person in their lives, who believed in them, such as a teacher or parent, was most significant. Murray (2003) believes efforts are being implemented to better understand risk and resilience in the high incident disability categories.

According to Masten (2001), the study of resilience in development has highlighted many negative assumptions and deficit-focused models about children growing up under adversity. She contends that resilience is made of ordinary rather than extraordinary processes which offer a positive outlook on human development and adaptation. Specifically, all individuals should possess the mechanisms required for positive outcomes. She believes that if systems are complete, a child should develop appropriately even if challenged. Nonetheless, if a child's basic adaptational systems are compromised, before or following a challenge, the risk for difficulties in development increases. Additionally, other studies of resilience (e.g., Garmezy et al., 1984; Rutter, 1979, 1986)

have identified protective factors in the histories of those appearing to have safeguarded the negative impact of the identified risks (Rak & Patterson, 1996).

Primarily, research has focused on at-risk children and youth who were exposed to significant and severe life adversities such as extreme poverty or parental mental illnesses (Ong, Bergeman, & Boker, 2009). By comparison, the study of resilience in adulthood and later life remains largely unstudied. Ong and colleagues found that resilience is a common phenomenon occurring from the corresponding arrangement of basic human adaptive processes.

According to Masten (2007), the next wave of research on resilience has the possibility to bring past theory and data gathered from decades of past work into the future through blending studies across numerous levels of analysis. Much work will be necessary to comprehend protective influences across cellular and behavioral levels. However, it is essential for researchers to remember that there are additional systems involved in resilience beyond the individual and immediate environment.

6. Protective factors

According to Rutter (1979), … any children do not succumb to deprivation, and it is important that we determine why this is so and what it is that protects them from hazards they face (p. 70). Garmezy et al. (1984) and Rutter (1986) stressed the crucial need to understand the impact of life experiences on children. Furthermore, it is essential to understand why those experiences provoke such a range of responses in different individuals.

Resilience is inhibited by risk factors and promoted by protective factors (Alvord & Grados, 2005; Benzies & Mychasiuk, 2009; Fergus & Zimmerman, 2005; Martinez-Torteya, Bogat, von Eye, & Levendosky, 2009; Masten et al., 1991; Rak & Patterson, 1996; Walsh, 2003). Protective factors alter responses to adverse events so that potential negative outcomes can be avoided. On the other hand, risk factors are circumstances that increase the probability of poor outcomes. Protective and risk factors are not stationary units; they change in relation to context leading to different outcomes (Walsh, 2003). According to Benzies and Mychasiuk (2009), resilience is optimized when protective factors are strengthened at all interactive levels of the socio-ecological model (i.e., individual, family, and community).

6.1. Individual characteristics

The results of numerous longitudinal studies have provided perspectives on the critical developmental personality factors that distinguish resilient children from those who become overcome by risk factors (e.g., Garmezy et al., 1984, Murphy & Moriatry, 1976; Rutter, 1985, 1986; Werner, 1984, 2000; Werner & Smith, 1982). According to Werner (1984), resilient children have temperamental characteristics that provoke positive responses from family members and strangers. Murphy and Moriatry (1976) noted that resilient preschool children had a pronounced autonomy and a strong social orientation. Other characteristics include (a) a close bond with a caregiver during the first year of life, (b) sociability combined with a strong sense of independence, (c) an optimistic view of their experiences in life even amongst suffering, and (d) an active engagement in act of *required helpfulness* (Werner, 1984). Moreover, a child's intelligence, connections and attachments (Alvord & Grados, 2005), coping skills, temperament, health, gender (Benzies & Mychasiuk, 2009), and internal motivation (Masten, 2001) contribute to resilience.

6.1.1. Self-regulation

Self-regulation is one of the most fundamental protective factors (Alvord & Grados, 2005; Benzies & Mychasiuk, 2009; Masten & Coatsworth, 1998). Researchers have identified an easy-going temperament and good self-regulation as being protective factors in resilience (e.g., Buckner, Mezzacappa, & Beardslee, 2003; Eisenberg et al., 2003; Werner, 1993). Rydell, Berlin, and Bohlin (2003) conducted a longitudinal study of five year olds and found that low regulation of positive emotions and exuberance predicted externalizing problem behavior and low levels of pro-social behavior. On the other hand, positive emotions and exuberance were associated with high levels of pro-social behavior.

Resilient individuals are confident in their ability to overcome hurdles (Werner, 1993). Werner and Smith (2001) found that those who are resilient make use of opportunities and resources around them. Hardships are viewed as learning experiences. Resilient people are able to take positive action in their lives (e.g., seeking mentors, pursuing educational opportunities, participating in extracurricular activities). Teaching children to help others is an effective way to encourage responsibility, empathy, and self-esteem (Werner, 1993).

6.1.2. Self-concept

Other than individual, family, and community support, research has shown self-concept to play a role in resilience (e.g., Beardslee & Podorefsky, 1988; Bolig & Weddle, 1998; Jens & Gordon, 1991; Marton, Golombek, Stein, & Korenblum, 1988; Rutter, 1986; Werner, 1984, 1986). Marton et al. (1988) found that positive self-esteem was related to having a sense of self and a sense of significant attachment figures. Other researchers found that for some at-risk children, stressful events served to strengthen them against harm and challenge rather than exacerbate their vulnerability (Bolig & Weddle, 1998; Jens & Gordon, 1991; Rutter, 1986; Werner, 1986). It seems that victory over hardship heightens a sense of self-concept rather than challenging the ability to cope. Werner (1984) found that a central component in the lives of children who are resilient is having feelings of confidence or faith that things will work out.

6.2. Family conditions

A noteworthy longitudinal study, beginning in 1959, identified the authoritative parenting style as being associated with optimal competence in children and adolescents (Baumrind, 1989). According to Baumrind (1991), associate authoritative parents have been identified as being responsive and demanding. Responsive parents are supportive, warm, and loving while also providing a cognitively stimulating environment. Moreover, they are demanding in the sense they are firm, rational, and consistent, but not overbearing or controlling over their children. Eisenberg et al. (2003) found that children's social competence and adjustment is related to maternal expression of positive emotion. Other family protective factors of resilience include (a) family structure, (b) intimate-partner relationships, (c) family cohesion, (d) supportive parent–child interactions, (e) stimulating environments, (f) social support, and (g) a stable and adequate income (Benzies & Mychasiuk, 2009).

6.3. Community supports

It has been found that role models outside the family can be potential buffers for children at-risk (Beardslee & Podorefsky, 1988; Bolig & Weddle, 1988; Garmezy et al., 1984; Masten, 2001; Werner, 1984, 1986, 2000). Role models outside the family may include teachers, school counselors, after-school program supervisors, coaches, community center workers, clergy, mental health workers, and good neighbors.

Environments and social structures are important elements of an effective community (Alvord & Grados, 2005). Community protective factors include (a) early prevention and intervention programs, (b) safety in neighborhoods, (c) relevant support services, (d) recreational facilities and programs, (e) accessibility to adequate health services, (f) economic opportunities for families and (g) religious and spiritual organizations (Alvord & Grados, 2005; Benzies & Mychasiuk, 2009).

6.4. Other factors

Alvord and Grados (2005) believe that protective factors that successfully help children adapt and cope with the difficulties of life must be viewed in the context of their individual cultures and developmental stages. The International Resilience Project (Grotberg, 1995) showed that faith functions as a stronger protective factor in some cultures than in others. Furthermore, children's developmental and cognitive levels, as well as internal and biological vulnerabilities, affect their ability to use different protective factors. Benzies and Mychasiuk (2009) determined that belief systems as well as increased education, skills, and training increase resilience.

7. Models of resilience

Models of resilience have been identified to explain how individual and environmental factors function to reduce or offset the adverse effects of risk factors (Fergus & Zimmerman, 2005; Garmezy et al., 1984; Rutter, 1985; Zimmerman & Arunkumar, 1994). Garmezy et al. (1984) proposed three models to describe the impact of stress and personal attributes on the quality of adaptation: (a) compensatory model, (b) challenge model, and (c) protective factor model. Researchers have defined other types of protective factor models including the (a) protective–stabilizing model, (b) protective–reactive model (Luthar et al., 2000), and (c) protective–protective model (Brook, Whiteman, Gordon & Cohen, 1986, 1989).

7.1. Compensatory model

According to Garmezy et al. (1984), a compensatory factor neutralizes exposure to risk. There is no interaction with a risk factor; instead, it has a direct and independent influence on the outcome (Fergus & Zimmerman, 2005; Zimmerman & Arunkumar, 1994). For example, youth living in poverty are more likely to commit violent behavior than youth not living in poverty, but adults monitoring the behavior may help balance the negative effects of poverty (Fergus & Zimmerman, 2005). The direct effect of a compensating variable would predict less delinquency, psychopathology, or drug use (Zimmerman & Arunkumar, 1994).

7.2. Challenge model

In the challenge model, a stressor (i.e., risk) is treated as a possible enhancer of competence, given that the amount of stress is not extreme (Garmezy et al., 1984). According to Zimmerman and Arunkumar (1994), too little stress is not sufficiently challenging, but high levels leave the individual helpless resulting in potential maladaptive behavior. However, moderate levels of stress provide the individual with a challenge that, when overcome, strengthens competence. Yates, Egelang, and Sroufe (2003) describe this model as an ongoing developmental process where children learn to mobilize resources as they are exposed to hardship. Youth become more prepared to face increasing risk as they successfully overcome low levels of risk (Fergus & Zimmerman, 2005). With continued exposure to adversity as youth age and mature, their capacity to thrive despite risks increases. This type of model requires longitudinal data (Fergus & Zimmerman, 2005; Zimmerman & Arunkumar, 1994).

7.3. Protective factor model

In the protective factor model, also known as the immunity-versus-vulnerability model, Garmezy et al. (1984) explain that there is a conditional relationship between stress and personal attributes with respect to adaptation. Personal attributes can dampen or amplify the impact of stress as a variable. Specifically, protective factors can interact with risk factors in reducing the probability of a negative outcome. For example, for youth with high levels of parental support, the relationship between poverty and violent behavior is reduced (Fergus & Zimmerman, 2005).

7.4. Protective–stabilizing model

The protective–stabilizing model refers to occurrences when a protective factor assists in neutralizing the effects of risk (Luthar et al., 2000). Therefore, when the protective factor is absent, higher levels of risk are linked with higher levels of a negative outcome. However, when the protective factor is present, there is no relationship between the risk and outcome. For example, youth who have inadequate parental support (risk factor) and do not have an adult mentor (protective factor) may exhibit delinquent behaviors (outcome); however, youth with a non-parental adult mentor may not (Fergus & Zimmerman, 2005).

7.5. Protective–reactive model

According to Luthar et al. (2000), although the protective factor does not completely remove the association between a risk and an outcome, the correlation can be weakened. In this model, the connection between the risk and outcome is stronger when the protective factor is not present. For example, Fergus and Zimmerman (2005) explain that youth who abuse drugs may be more likely to engage in sexual risk behavior. However, this relationship may be more diminished among those exposed to comprehensive sexual education in their schools than among youth not receiving this education.

7.6. Protective–protective model

In the protective–protective model, Brook et al. (1986, 1989) propose that a protective factor can increase the effects of another protective factor in creating an outcome. For example, parental support may amplify the positive effect of academic proficiency in generating more positive academic outcomes than for either factor alone (Fergus & Zimmerman, 2005). Conversely, because resilience requires the presence of risk, this model may not be considered as a resilience-based model.

8. Issues when researching resilience

According to Fergus and Zimmerman (2005), there are several issues related to research in resilience causing confusion within the field and igniting criticism of resilience theory. There are varying definitions of resilience and central terminology, which slow the development of the field (Luthar et al., 2000). The authors recommend developing a common language to bring the field to the next level. Although some researchers believe resilience is a trait, resilience is not a quality of an adolescent that is present in every situation (Fergus & Zimmerman, 2005). It is, however, defined by the risk, protective factor, outcome, context, and population. Luthar et al. (2000) recommend always using the term *resilience* as opposed to *resiliency* when referring to the process of competence despite hardship.

Fergus and Zimmerman (2005) highlight the fact that resilience may be context or content specific; meaning, an adolescent may be resilient when faced with one type of risk yet overcome by a different type of risk. Researchers have found that varying assets may be correlated with different risk and outcome combinations (Crosnoe, Erickson, & Dornbusch, 2002; Gutman, Sameroff, & Eccles, 2002) which makes it challenging when trying to identify universal protective factors. Furthermore, concern has been raised that asset lists may be construed to function in the same fashion for all groups, contexts, or outcomes (Fergus & Zimmerman, 2005).

Cicchetti and Rogosch (2002) found that the process of resilience may differ for various groups of adolescents. For example, resilience for youth may differ depending on (a) where they live (i.e., urban,

suburban, and rural), (b) their socioeconomic status, (c) gender, (d) immigration status (i.e., immigrant or nonimmigrant), (e) early and late adolescence (Fergus & Zimmerman, 2005), or (f) parental control (e.g., democratic decision-making; Gutman et al., 2002; Sameroff, Gutman, & Peck, 2003). Understanding that the process of resilience is unique for differing groups of adolescents is important for researchers and practitioners wanting to make comparisons across various populations being studied (Fergus & Zimmerman, 2005).

Fergus and Zimmerman (2005) cite several issues with resilience theory. Resilience requires the presence of a risk factor. Moreover, challenges facing youth can range from short-term severe stressors to long-term enduring stressors, or to shocking stressful events. Experiences with the same adversarial event or condition may vary across adolescents. Additionally, research on resilience is somewhat limited in that it generally includes single risk or protective factors, whereas, most youth are exposed to multiple risks and assets and may have access to multiple resources. A final component that Fergus and Zimmerman believe is often overlooked in examining explanations for how resources interact with risk exposures to produce specific outcomes.

9. Measuring resilience

There are numerous ways of assessing resilience. Checklists, scales, and interviews have been developed to assess resilience, risk and protective factors (e.g., Baruth & Carroll, 2002; Vance, Fernandez, & Biber, 1998), or competence in one or more domains (e.g., Ewart, Jorgensen, Suchday, Chen, & Matthews, 2002). However, Naglieri and LeBuffle (2005) recommend only using standardized approaches for measuring resilience.

9.1. Measuring family functioning

The *McMaster Family Assessment Device* is a questionnaire designed to evaluate family functioning across seven scales: (a) problem solving, (b) communication, (c) roles, (d) affective responsiveness, (e) affective involvement, (f) behavior control, and (g) general functioning (Fredman & Sherman, 1987; Tedeschi & Kilmer, 2005). This scale offers a global screen of family functioning. The *Family Environment Scale* assesses perceptions across relationship, personal growth, and system maintenance dimensions. The use of these scales can facilitate discussions regarding the family and its different characteristics of functioning, initiate the course of change by providing information about family environment, and inform specific interventions to encourage family development by recognizing strengths and areas in need of consideration within a given family (Tedeschi & Kilmer).

9.2. Measures for children

A nationally standardized rating scale designed to evaluate protective factors related to resilience in children, aged 2 through 5, is the *Devereux Early Childhood Assessment* (*DECA*; Naglieri & LeBuffle, 2005). The *DECA* items are organized into two dimensions: protective factors and behavioral concerns. One of the key goals of the assessment is to assist in determining if children have developed acceptable skills in three areas (i.e., initiative, self-control, and attachment) which are associated with resilience. A child may be at-risk if he/she received a comparatively low score in these three strength-based, within-child protective factors. Early identification of children at-risk allows strategies to be implemented at school and home to help develop these protective factors which may increase the odds that the child will be able to successfully adapt to risk and adversity in the future.

The *DECA* was developed to be used with all children as one part of a mental health promotion program. On the other hand, the *Devereux Early Childhood Assessment Clinical Form* (*DECA-C*) is a clinical assessment designed to assess factors associated with resilience and the nature and severity of a preschooler's behavioral, emotional, or social problems (Naglieri & LeBuffle, 2005). Although derived from the *DECA*, the *DECA-C* is an extension of that rating scale. *DECA* was developed to be used as part of a primary prevention program, whereas, the *DECA-C* is intended to be used at the targeted level as part of an assessment of a child's emotional/behavioral health. Additionally, it is intended to be used to develop intervention plans to meet a child's individual needs. Crucial information is gathered when assessing protective factors and behavioral concerns including (a) an examination of the child from positive and concern standpoints, (b) an understanding of how protective factors impact the child's behavior, and (c) data for intervention planning.

9.3. Measures for adolescents

Ahern, Kiehl, Sole, and Byers (2006) determined that for adolescents, the most appropriate instrument to study resilience is the *Resilience Scale* (*RS*). The *RS* is a 25-item scale with two factors: (a) personal competence and (b) acceptance of self and life (Wagnild & Young, 1993) both of which are associated with resilience. Originally, this scale was tested with adult participants; however, studies have validated that it is successful with all ages and ethnic groups (e.g., Ahern et al., 2006; Luthans, Avolio, Avey, & Norman, 2007; Neill & Dias, 2001; Wagnild, 2009).

9.4. Why assess resilience?

According to Tedeschi and Kilmer (2005), fundamental strategic changes within clinical functions may define the key action of resilience assessment. Clinicians continue investigating core functional domains including home, school, and friends for children and youth. However, in addition to recognizing difficulties to be addressed, potential protective factors must also be identified. These targeted factors may be used to enhance existing capabilities, encourage healthy adjustment trajectories, and nurture resilient adaptation. The shift in assessment strategy may require a growth in focus. Services, whether they are formal (e.g., mental health therapy, attachment-oriented therapy) or informal (e.g., Big Brothers/Big Sisters, faith-based youth groups), must be organized and well integrated. Luthar and Cicchetti (2000) advise against resilience-based intervention approaches that are overgeneralized. As an alternative, a multidimensional approach to intervention is encouraged, greatly increasing the likelihood of positive adjustment. Multiple potential risk and protective factors should be targeted as opposed to one or two in isolation (Luthar & Cicchetti; Masten & Coatsworth, 1998).

10. Resilience-based interventions

Without intervention, youth facing significant adversities have a greater likelihood of encountering problems as they navigate their developmental paths (Luthar & Cicchetti, 2000). A key idea is that interventions need to focus on developing assets and resources for those exposed to risk rather than concentrating on risk amelioration (Fergus & Zimmerman, 2005; Luthar & Cicchetti; Yates et al., 2003). In the past, practitioners focused on documenting predisposing, enabling, and reinforcing factors associated with youth's behavior targeted for change (Fergus & Zimmerman). Typically, deficits are highlighted that predispose, enable, and reinforce negative behaviors; however, a resilience approach emphasizes assets and resources as the center for change. Interventions cutting across behaviors may be the most effective due to the multidimensional nature of resilience. Furthermore, intervention strategies must be tailored to the student's developmental level (Noam & Hermann, 2002). Individual-level, family-level, and social environment interventions are highlighted in Table 1.

Table 1
Interventions.

Individual-level	Family-level	Social environment
Developed pre-crisis	Primary support for youth	Supportive peers
Social skills	Parent–child attachment	Positive teacher influences
Self-efficacy	Warmth	Opportunities for success
Academic skills	Family cohesion	Academic achievement
Extracurricular activities	Care within family	
	Close adult relationship	

10.1. Individual-level intervention

According to Olsson, Bond, Burns, Vella-Brodrick, and Sawyer (2003), intervention at the individual level will focus on developing personal coping skills and resources before encountering real life adversity. Typically, coping skills and resources are built into response-to-crisis within one-on-one treatment. Fergus and Zimmerman (2005) believe internal assets essential to develop include (a) social skills for connecting to peers, (b) self-efficacy for health-promoting behavior, (c) academic skills, and (d) involvement in extracurricular and community activities. It is equally important to identify what resources should be the target of the intervention and determine how to convey these resources to youth (Olsson et al., 2003). Finding assets and resources that have been found to promote healthy outcomes in an individual's specific population is crucial.

The *Life Skills Training Program* (Botvin & Griffin, 2002) is a school-based substance abuse and violence prevention program focusing on enhancing social and personal competence skills. *Resourceful Adolescent Program* (*RAP*; Shochet, Holland, & Whitefield, 1997) is an intervention designed to improve adolescents' skills and social resources through (a) supporting participants' strengths, (b) skill building for controlling stress, (c) developing social support networks, and (d) conducting interpersonal relationships with others (Shochet et al., 2001).

10.2. Family-level intervention

The family is a primary social support for youth (Olsson et al., 2003). Positive parent–child attachment is important as is parental warmth, encouragement and assistance, cohesion and care within the family, and a close relationship with a caring adult (Fergus & Zimmerman, 2005; Olsson et al.). Intervention at the family-level may take on a preventative or crisis-care focus.

There are several family-centered interventions that may help develop and enhance assets and resources. The *RAP* program includes sessions for participants' parents with a focus similar to that of the adolescent sessions (Shochet et al., 2001). The Multidimensional Family Prevention project assists youth and their parents develop new skills to enhance communication with each other and in general (Hogue, Liddle, Becker, & Johnson-Leckrone, 2002). Flint Fathers and Sons is a program designed to strengthen father-son relationships among African American participants (Caldwell et al., 2004). Other family-focused interventions include (a) preparing for the drug free years (Spoth, Reyes, Redmond, & Shin, 1999); (b) Iowa strengthening families (Spoth et al., 1999), now revised and called the Strengthening Families Program: For Parents and Youth 10–14 (Spoth, Randall, Shin, & Redmond, 2005); and Familias Unidas (Coatsworth, Pantin, & Szapocznik, 2002; Pantin et al., 2003).

10.3. Social environment intervention

Two social environments identified include the school environment and the broader social environment (Olsson et al., 2003). Children spend much of their day at school making this setting an important one in promoting resilience in young people (Noam & Hermann, 2002; Olsson et al.). Experiences involving supportive peers, positive teacher influences, and opportunities for success, academic or otherwise, have been positively linked to resilience in adolescents (Olsson et al.). Responsive Advocacy for Life and Learning in Youth (RALLY) is a research-based intervention addressing academic success and emotional well-being of adolescents in schools (Noam & Hermann, 2002). The focus of RALLY is pulling in services to the classroom and school in order to extend prevention and intervention into the child's everyday experiences. The broader social environment such as the neighborhood, region, or county plays a role in psychosocial development (Olsson et al.). Non-punitive social structures and supportive communities play an important role in promoting resilience.

11. Conclusion

Assets and resources that assist children and youth overcome adverse effects of risks differ according to the population studied, context, and outcome (Fergus & Zimmerman, 2005). However, several common themes appear. Parental factors such as support, monitoring, and communication skills are crucial resources for youth. Although individuals with self-confidence and social skills are slightly prone to being resilient irrespective of the risk or outcome, it is essential that resilience-based intervention approaches give close attention to the unique characteristics of the population of interest. Research on resilience has the potential to guide the development of effective interventions for diverse at-risk populations (Luthar & Cicchetti, 2000). Resilience theory offers researchers and practitioners a conceptual model to understand how children and youth overcome adversity and how this knowledge can be used to improve strengths and build positive characteristics of their lives.

References

Ahern, N. R., Kiehl, E. M., Sole, M. L., & Byers, J. (2006). A review of instruments measuring resilience. *Issues in Comprehensive Pediatric Nursing*, *29*, 103–125, http://dx.doi.org/10.1080/01460860600677643.

Alvord, M. K., & Grados, J. J. (2005). Enhancing resilience in children: A proactive approach. *Professional Psychology: Research and Practice*, *36*(3), 238–245, http://dx.doi.org/10.1037/0735-7028.36.3.238.

Baruth, K. E., & Carroll, J. J. (2002). A formal assessment of resilience: The Baruth protective factors inventory. *Journal of Individual Psychology*, *58*(3), 235–244.

Baumrind, D. (1989). Rearing competent children. In W. Damon (Ed.), *Child development today and tomorrow* (pp. 349–378). San Francisco, CA: Jossey-Bass.

Baumrind, D. (1991). Effective parenting during the early adolescent transition. In P. A. Cowan, & M. Hetherington (Eds.), *Family transition* (pp. 111–163). Hillsdale, NJ: Erlbaum.

Beardslee, M. D., & Podorefsky, M. A. (1988). Resilient adolescents whose parents have serious affective and other psychiatric disorders: Importance of self-understanding and relationships. *The American Journal of Psychiatry*, *145*(1), 63–69.

Benzies, K., & Mychasiuk, R. (2009). Fostering family resiliency: A review of the key protective factors. *Child & Family Social Work*, *14*, 103–114, http://dx.doi.org/10.1111/j.1365-2206.2008.00568x.

Bernard, B. (1993). Fostering resiliency in kids. *Educational Leadership*, *51*(3), 44–48.

Bernard, B. (1995). *Fostering resilience in children.* Retrieved from ERIC database. (ED386327).

Bleuler, M. (1984). Different forms of childhood stress and patterns of adult psychiatric outcome. In N. F. Watt, E. J. Anthony, L. C. Wynne, & J. E. Rolf (Eds.), *Children at risk for schizophrenia* (pp. 537–542). Cambridge: Cambridge University Press.

Bolig, R., & Weddle, K. D. (1998). Resiliency and hospitalization of children. *Children's Health Care*, *16*(4), 255–260.

Botvin, G. J., & Griffin, K. W. (2002). Life skills training as a primary prevention approach for adolescent drug abuse and other problem behaviors. *International Journal of Emergency Mental Health*, *4*(1), 41–47.

Brook, J. S., Whiteman, M., Gordon, A. S., & Cohen, P. (1986). Dynamics of childhood and adolescent personality traits and adolescent drug use. *Developmental Psychology*, *22*(3), 403–414.

Brook, J. S., Whiteman, M., Gordon, A. S., & Cohen, P. (1989). Changes in drug involvement: A longitudinal study of childhood and adolescent determinants. *Psychological Reports*, *65*, 707–726.

Brooks, J. E. (2006). Strengthening resilience in children and youths: Maximizing opportunities in the schools. *Children and Schools*, *28*(2), 69–76.

Buckner, J. C., Mezzacappa, E., & Beardslee, W. R. (2003). Characteristics of resilient youths living in poverty: The role of self-regulatory processes. *Development and Psychopathology*, *15*, 139–162.

Caldwell, C. H., Wright, J. C., Zimmerman, M. A., Walsemann, K. M., Williams, D., & Isichei, P. A. (2004). Enhancing adolescent health behaviors through strengthening non-resident father–son relationships: A model for intervention with African-American families. *Health Education Research*, *19*(6), 644–656.

Cicchetti, D. (2006). In D. Cicchetti, & D. Cohen (Eds.), *Developmental and psychopathology (2nd ed.). Developmental psychopathology: Theory and method*, *Vol. 1*. (pp. 1–23) Hoboken NJ: Wiley.

Cicchetti, D., & Curtis, W. J. (2006). In D. Ciccheti, & D. Cohen (Eds.), *The developing brain and neural plasticity: Implications for normality, psychopathology, and resilience (2nd ed.). Developmental psychopathology: Developmental neurosciences*, *Vol. 2*. (pp. 710–741) New York: Wiley.

Cicchetti, D., & Rogosch, F. A. (1997). The role of self-organization in the promotion of resilience in maltreated children. *Development and Psychopathology*, *9*, 797–815.

Cicchetti, D., & Rogosch, F. A. (2002). A developmental psychopathology perspective on adolescence. *Journal of Consulting and Clinical Psychology*, *70*(1), 6–20.

Coatsworth, J. D., Pantin, H., & Szapocznik, J. (2002). Familias unidas: A family-centered ecodevelopmental intervention to reduce risk for problem behavior among Hispanic adolescents. *Clinical Child and Family Psychology Review*, *5*(2), 113–132.

Crosnoe, R., Erickson, K. G., & Dornbusch, S. M. (2002). Protective functions of family relationships and school factors on the deviant behavior of adolescent boys and girls: Reducing the impact of risky friendships. *Youth & Society*, *33*(4), 515–533.

Curtis, W. J., & Cicchetti, D. (2003). Moving research on resilience into the 21st century: Theoretical and methodological considerations in examining the biological contributors to resilience. *Development and Psychopathology*, *15*, 773–810.

Eisenberg, N., Valiente, C., Morris, A. S., Fabes, R. A., Cumberland, A., Reiser, M., et al. (2003). Longitudinal relations among parental emotional expressivity, children's regulation, and quality of socioemotional functioning. *Developmental Psychology*, *39*(1), 3–19.

Ewart, C. K., Jorgensen, R. S., Suchday, S., Chen, E., & Matthews, K. A. (2002). Measuring stress resilience and coping in vulnerable youth: The social competence interview. *Psychological Assessment*, *14*(3), 339–352.

Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health*, *26*, 399–419, http://dx.doi.org/10.1146/annurev.publichealth.26.021304.144357.

Fredman, N., & Sherman, R. (1987). *Handbook of measurements for marriage & family therapy*. New York, NY: Brunner/Mazel.

Garmezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. *Child Development*, *55*, 97–111.

Gerber, P. J., Ginsberg, R., & Reiff, H. B. (1992). Identifying alterable patterns in employment success for highly successful adults with learning disabilities. *Journal of Learning Disabilities*, *25*(8), 475–487.

Gottesman, I. I. (1974). Developmental genetics and ontogenetic psychology: Overdue détente and propositions from a matchmaker. In A. D. Pick (Ed.), *Minnesota Symposium on Child Psychology*, *Vol. 8*. (pp. 55–80)Minneapolis, MN: University of Minnesota Press.

Gottesman, I. I., & Shields, A. (1972). *Schizophrenia and genetics: A twin study vantage point*. New York: Academic Press.

Grotberg, E. H. (1995). A guide to promoting resilience in children: Strengthening the human spirit. Retrieved from. , http://resilnet.uiuc.edu/library/grotb95b.html

Gutman, L. M., Sameroff, A. J., & Eccles, J. S. (2002). The academic achievement of African American students during early adolescence: An examination of multiple risk, promotive, and protective factors. *American Journal of Community Psychology*, *30*(3), 367–399.

Hart, D., Hofmann, V., Edelstein, W., & Keller, M. (1997). The relation of childhood personality types to adolescent behavior and development: A longitudinal study of Icelandic children. *Developmental Psychology*, *33*(2), 195–205.

Hechtman, L. (1991). Developmental neurobiological and psychosocial aspects of hyperactivity, impulsivity, and attention. In M. Lewis (Ed.), *Child and adolescent psychiatry: A comprehensive textbook* (pp. 318–331). Baltimore, MD: Williams & Wilkins.

Hogue, A., Liddle, H. A., Becker, D., & Johnson-Leckrone, J. (2002). Family-based prevention counseling for high-risk young adolescents: Immediate outcomes. *Journal of Community Psychology*, *30*(1), 1–22.

Jens, K. G., & Gordon, B. N. (1991). Understanding risk: Implications for tracking high-risk infants and making early service delivery decision. *International Journal of Disability, Development and Education*, *38*(3), 211–224.

Kraemer, H. C., Kazdin, A. E., Offord, D. R., Kessler, R. C., Jensen, P. S., & Kupfer, D. J. (1997). Coming to terms with the terms of risk. *Archives of General Psychiatry*, *54*, 337–343.

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, *60*, 541–572.

Luthar, S. S. (1991). Vulnerability and resilience: A study of high-risk adolescents. *Child Development*, *62*, 600–616.

Luthar, S. S., & Cicchetti, D. (2000). The construct of resilience: Implications for interventions and social policies. *Development and Psychopathology*, *12*, 857–885.

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, *71*(3), 543–562.

Martinez-Torteya, C., Bogat, G. A., von Eye, A., & Levendosky, A. A. (2009). Resilience among children exposed to domestic violence: The role of risk and protective factors. *Child Development*, *80*(2), 562–577.

Marton, P., Golombek, H., Stein, B., & Korenblum, M. (1988). The relation of personality functions and adaptive skills to self-esteem in early adolescence. *Journal of Youth and Adolescence*, *17*(5), 393–401.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*(3), 227–238.

Masten, A. S. (2007). Resilience in developing systems: Progress and promise as the fourth wave rises. *Development and Psychopathology*, *19*, 921–930, http://dx.doi.org/10.1017/S0954579407000442.

Masten, A. S. (2011). Resilience in children threatened by extreme adversity: Framework for research, practice, and translational synergy. *Development and Psychopathology*, *23*, 493–506, http://dx.doi.org/10.1017/S0954579411000198.

Masten, A. S., Best, K. M., & Garmezy, N. (1991). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology*, *2*, 425–444.

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist*, *53*(2), 205–220.

Masten, A. S., & Obradovic, J. (2006). Competence and resilience in development. *Annals of the New York Academy of Sciences*, *1094*, 13–27, http://dx.doi.org/10.1196/annals.1376.003.

Miller, M. (2002). Resilience elements in students with learning disabilities. *Journal of Clinical Psychology*, *58*(3), 291–298.

Murphy, L. B. (1962). *The widening world of childhood: Paths toward mastery*. New York, NY: Basic Books.

Murphy, L. B., & Moriatry, A. E. (1976). *Vulnerability, coping, and growth: From infancy to adolescence*. New Haven, CT: Yale University Press.

Murray, C. (2003). Risk factors, protective factors, vulnerability, and resilience: A framework for understanding and supporting the adult transitions of youth with high-incidence disabilities. *Remedial and Special Education*, *24*(1), 16–26.

Naglieri, J. A., & LeBuffle, P. A. (2005). Measuring resilience in children. In S. Goldstein, & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 107–121). New York, NY: Springer.

Neill, J. T., & Dias, K. L. (2001). Adventure education and resilience: The double-edged sword. *Journal of Adventure Education and Outdoor Learning*, *1*(2), 35–42.

Noam, G. G., & Hermann, C. A. (2002). Where education and mental health meet: Developmental prevention and early intervention in schools. *Development and Psychopathology*, *14*, 861–875.

Olsson, C. A., Bond, L., Burns, J. M., Vella-Brodrick, D. A., & Sawyer, S. M. (2003). Adolescent resilience: A concept analysis. *Journal of Adolescence*, *26*, 1–11.

Ong, A. D., Bergeman, C. S., & Boker, S. M. (2009). Resilience comes of age: Defining features in adulthood. *Journal of Personality*, *77*(6), 1777–1804, http://dx.doi.org/10.1111/j.1467-6494.2009.00600.x.

Pantin, H., Coatsworth, J. D., Feaster, D. J., Newman, F. L., Briones, E., Prado, G., et al. (2003). Familias unidas: The efficacy of an intervention to promote parental investment in Hispanic immigrant families. *Prevention Science*, *4*(3), 189–201.

Rak, C. F., & Patterson, L. E. (1996). Promoting resilience in at-risk children. *Journal of Counseling and Development*, *74*, 368–373.

Resnick, M. D. (2000). Protective factors, resiliency, and healthy development. *Adolescent Medicine: State of the Art Reviews*, *11*(1), 157–164.

Rutter, M. (1976). Research report: Isle of Wight studies. *Psychological Medicine*, *6*, 313–332.

Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent, & J. E. Rolf (Eds.), *Primary prevention of psychopathology: Social competence in children*, *Vol. 3*. (pp. 49–74)Hanover, NH: University Press of England.

Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorders. *The British Journal of Psychiatry*, *147*, 598–611.

Rutter, M. (1986). Meyerian psychobiology, personality, development, and the role of life experiences. *The American Journal of Psychiatry*, *143*, 1077–1087.

Rutter, M. (2002). The interplay of nature, nurture, and developmental influences: The challenge ahead for mental health. *Archives of General Psychiatry*, *59*, 996–1000.

Rutter, M., & The English and Romanian Adoptees study team (1998). Developmental catch-up, and deficit, following adoption after severe global early privation. *Journal of Child Psychology and Psychiatry*, *39*(4), 465–476.

Rydell, A. M., Berlin, L., & Bohlin, G. (2003). Emotionality, emotion regulation, and adaptation among 5- to 8-year-old children. *Emotions*, *3*(1), 30–47.

Sameroff, A., Gutman, L. M., & Peck, S. C. (2003). Adaptation among youth facing multiple risks: Prospective research findings. In S. S. Luther (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 213–243). New York, NY: Cambridge University Press.

Shochet, I. M., Dadds, M. R., Holland, D., Whitefield, K., Harnett, P. H., & Osgarby, S. M. (2001). The efficacy of a universal school-based program to prevent adolescent depression. *Journal of Clinical Child Psychology*, *30*(3), 303–315.

Shochet, I. M., Holland, D., & Whitefield, K. (1997). *Resourceful adolescent program: Group leader's manual*. Brisbane, Australia: Griffith University.

Spekman, N. J., Goldberg, R. J., & Herman, K. L. (1992). Learning disabled children grow up: A search for factors related to success in the young adult years. *Learning Disabilities Research and Practice*, *7*(3), 161–170.

Spoth, R., Randall, K., Shin, C., & Redmond, C. (2005). Randomized study of combined universal family and school preventive interventions: Patterns of long-term effects on initiation, regular use, and weekly drunkenness. *Psychology of Addictive Behaviors*, *19*(4), 372–381.

Spoth, R., Reyes, M. L., Redmond, C., & Shin, C. (1999). Assessing a public health approach to delay onset and progression of adolescent substance use: Latent transition and log-linear analyses of longitudinal family preventative intervention outcomes. *Journal of Counseling and Clinical Psychology*, *67*(5), 619–630.

Tedeschi, R. G., & Kilmer, R. P. (2005). Assessing strengths, resilience, and growth to guide clinical interventions. *Professional Psychology: Research and Practice*, *36*(3), 230–237.

Vance, J. E., Fernandez, G., & Biber, M. (1998). Educational progress in a population of youth with aggression and emotional disturbance: The role of risk and protective factors. *Journal of Emotional and Behavioral Disorders*, *6*(4), 214–221.

Wagnild, G. M. (2009). A review of the resilience scale. *Journal of Nursing Measurement*, *17*(2), 105–113.

Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement*, *1*, 165–178.

Walsh, F. (2003). Family resilience: A framework for clinical practice. *Family Process*, *42*(1), 1–18.

Watt, N. F., Anthony, E. J., Wynne, L. C., & Rolf, J. E. (Eds.). (1984). *Children at risk for schizophrenia: A longitudinal perspective*. Cambridge: Cambridge University Press.
Werner, E. E. (1971). *The children of Kauai: A longitudinal study from the prenatal period to age ten.* Honolulu, HI: University of Hawaii Press.
Werner, E. E. (1984). Resilient children. *Young Children*, *40*, 68–72.
Werner, E. E. (1986). The concept of risk from a developmental perspective. *Advances in Special Education*, *5*, 1–23.
Werner, E. E. (1992). The children of Kauai: Resiliency and recovery in adolescence and adulthood. *Journal of Adolescent Health*, *13*, 262–268.
Werner, E. E. (1993). Risk, resilience, and recovery: Perspectives from the Kauai longitudinal study. *Development and Psychopathology*, *5*, 503–515.
Werner, E. E. (2000). Protective factors and individual resilience. In J. Shonkoff, & S. Meisels (Eds.), *Handbook of early childhood intervention* (pp. 115–132). (2nd ed.). New York, NY: Cambridge University Press.
Werner, E. E., & Smith, R. S. (1982). *Vulnerable but not invincible: A longitudinal study of resilient children and youth.* New York, NY: McGraw Hill.
Werner, E. E., & Smith, R. S. (2001). *Journeys from childhood to midlife.* Ithaca, NY: Cornell University Press.
Yates, T. M., Egelang, B. L., & Sroufe, A. (2003). Rethinking resilience: A developmental process perspective. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 243–266). New York, NY: Cambridge University Press.
Zimmerman, M. A., & Arunkumar, R. (1994). Resiliency research: Implications for schools and policy. *Social Policy Report: Society for Research in Development*, *8*(4), 1–20.

Staci M. Zolkoski is a doctoral candidate in the leadership program, specializing in the area of emotional/behavioral disorders, at the University of North Texas. Prior to beginning full-time doctoral studies, she taught inclusion-based general education in Title I elementary schools.

Lyndal M. Bullock is a Regents Professor in Special Education at the University of North Texas where he coordinates the graduate leadership program in emotional/behavioral disorder. Over the years, he has contributed significantly to the literature and leadership in professional education associations.