Chapter Eight

Early Intervention, Trauma, Resilience and Health

Brief Symposium

Resilience and Children's Mental Health

Chair and Discussant
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Symposium Introduction

Lodi Lipien & Robert Friedman

In recent years, the field of children's mental health has shifted attention from programs that focus on children's deficits to services and research that promote children's strengths. For example, since 1992, the Comprehensive Community Mental Health Services Program for Children and Their Families has supported the development of service systems that address the needs of children and families through a strength-based approach. This new approach, also referred to as an asset or wellness model, has evolved to include the construct of resilience. Resilience implies that individuals can adapt successfully and function competently in spite of significant hardships, such as mental illness (Masten & Coatsworth, 1998). In 2003, the President's New Freedom Commission on Mental Health emphasized resilience as a goal for children: "…care must focus on increasing consumers' ability to successfully cope with life's challenges, on facilitating recovery and on building resilience, not just on managing symptoms" (p. 5). Research on the construct of resilience suggests that positive individual traits, such as optimism, and positive external factors, such as strong community connections, enhance the ability of individuals to "bounce back" from adversity. The presentations in this symposium describe ongoing efforts to measure resilience in youth and promote resilience at the federal and state levels.

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The SAMHSA Approach to Building Resilience

Nancy J. Davis

Introduction

It is entirely fitting that resilience is a key focus of a Systems of Care conference, for some form of a system of care is essential to fostering resilience in anyone. Resilience is not an immutable trait of an individual; it is not a pull-yourself-up-by-your-bootstraps phenomenon. In any person, resilience varies over time, from one situation to another, and from one domain to another. And almost always, resilient adaptation to adversity comes about as a result of an individual's personal competences and characteristics interacting with helpful people and other resources in the environment.

These environmental resources often include caring adults, pro-social friends, good schools, competent and affordable health care, safe neighborhoods, a stable and supportive workplace, and the like. Certainly, individual traits such as good problem-solving skills, a pro-active coping style, and the capacity to understand different points of view are also extremely useful. But individual traits alone are rarely sufficient for resilient adaptation to adversity. It is the interaction between individual traits and environmental resources that promotes resilience and healthy development.

Issues in Resiliency Research

Current Issue #1: The Entanglement of Key Constructs

To understand the concept of resilience, one also needs to understand the concepts of promotion and prevention, and how all three of these are entangled. [This entanglement is addressed at length in an article titled: *The promotion of mental health and prevention of mental and behavioral disorders: Surely the time is right* (Davis, 2002).]

At the Federal Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Mental Health Services, the term *prevention* is used to refer not only to prevention before the onset of a disorder, but also to prevention of comorbidity, relapse, and disability. The agency "does" prevention primarily by promoting mental health and building resilience—that is, by supporting programs that enhance protective factors and build assets and competencies in individuals, families, and communities. The mission of the agency is to "Build Resilience and Foster Recovery."

Prevention and Resilience. Most developers of prevention programs do not describe their programs as "programs to foster resilience." One who does, however, puts it this way:

> *Luckily, although not specifically designed to increase resilience, most prevention programs logically or intuitively focus on increasing protective mechanisms. Many of these protective mechanisms are synonymous with resilience mechanisms. Hence, increasing research findings about resilience building processes should better inform prevention program design and increase program effectiveness* (Kumpfer, 1999).

Current Issue #2: Defining Resilience

Resilience is a very complex construct that defies simple definition. However, a frequently used definition is "manifested competence in the context of significant challenges to adaptation or development" (Masten & Coatsworth, 1998, p. 206). This definition requires that researchers must make two major judgments:

1. There has been a significant threat to the individual. This threat is usually either high-risk status or exposure to severe adversity or trauma.
2. The quality of adaptation or development is good. That is, the child is behaving in a competent manner.

This definition actually leaves a lot more for researchers to define. What is meant by "competence?" By "high-risk status?" By severe adversity?" Who decides whether the "quality of adaptation is good?"

Current Issue #3: How Does Resilience Happen?

Historically, much of the research on resilience has focused on showing that resilience has occurred, and on identifying protective factors that correlate with resilient adaptation to adversity. Now, researchers are turning to the "how" of resilience and studying the processes by which protective factors prevent negative outcomes or promote positive outcomes (Luthar, 2003).

SAMHSA's Resilience-Building Activities

SAMHSA's resilience-building activities include both prevention and treatment activities. Three such activities are as follows:

National Registry of Effective Programs and Practices (NREPP)

One significant SAMHSA activity that is a de facto resilience-building activity is the National Registry of Effective Programs and Practices (NREPP). SAMHSA's Center for Substance Abuse Prevention developed NREPP in 1998 to identify and evaluate evidence-based programs for substance abuse prevention. About 1½ years ago, SAMHSA began working to adapt the NREPP criteria for programs in substance abuse and mental health treatment, co-occurring disorders, and promotion and prevention in mental health.

It is widely accepted that risk and protective factors for substance abuse prevention are common to many mental and behavioral disorders. In 2003, SAMHSA/CMHS commissioned a literature review on 29 of 45 NREPP model programs. The review found that, in fact, many programs decrease risk factors, increase protective factors, or do both for a variety of mental disorders. Nine programs do so for three of the most common and costly mental disorders: depression, anxiety, and conduct disorders.

Grant Programs

SAMHSA provides funding for a number of grant programs, many of which may be thought of as "resilience-building." Three such programs that used the concept of resilience from the beginning are as follows:

Safe Schools/Healthy Students Interdepartmental Grant Program (SS/HS). SS/HS is a collaborative effort of the Federal Departments of Education, Justice, and Health and Human Services. Its overarching goal is to foster resilience and prevent youth violence. Since FY 1999, grants of $1 to $3 million per year for up to three years have been awarded to 166 local education agencies (LEAs) in rural, tribal, suburban, and urban areas.

Youth Violence Prevention Grant Program (YVPP). YVPP provides grants for collaborations to prevent youth violence, substance abuse, suicide, and other mental and behavioral problems and to implement services to enhance pro-social development and positive mental health in youth. Since 1999, YVPP has awarded 163 grants for approximately $150,000 per year for two years. The last solicitation for this program yielded almost 600 applications. Funding was available for 24 awards.

Prevention & Early Intervention Grant Program (P&EI). The P&EI program provides funds to develop prevention and early intervention services for children 0-18 in mental health and other settings such as schools and day care centers. This is one of the ultimate resilience-building programs because about half of the grantees are working with infants and pre-school children and their parents, promoting protective processes and preventing the risk factors for childhood conduct disorders and adolescent substance abuse, delinquency, and youth violence. Begun in 2001, this program has awarded grants of approximately $400,000 per year for up to three years to 23 grantees.

The SAMHSA Strategic Prevention Framework

To help guide SAMHSA's promotion and prevention activities, the agency has developed a Strategic Prevention Framework grounded in the public health approach. It is based on six key principles and is a five-step process that builds assets, promotes healthy development, and reduces maladaptive behaviors. It insists upon accountability, capacity, and effectiveness at the Federal, state, and local levels. The Framework may be found at www.samhsa.gov.

Closing

The concept of resilience is an optimistic notion and one around which people often rally. However, noted resilience researcher, Dr. Ann Masten provides a word of caution (Masten, 1996):

> *The great danger I see in the idea of resilience is in expecting children to overcome deprivation and danger on their own…There is no magic here; resilient children have been protected by the actions of adults, by good nurturing, by their assets, and by opportunities to succeed. We cannot stand by as the infrastructure for child development collapses in this nation, expecting miracles.*

Surely strengthening "the infrastructure for child development" through comprehensive systems of care is one of the very effective ways that adults can promote resilience, not only in their children, but in themselves as well.

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Promoting Resilience for Children in Local Mental Health Systems

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Introduction

Promoting resilience for children with serious emotional disabilities (SED) is one of the next major challenges in children's mental health and one that the state of Ohio is in the first stages of meeting. Resilience is a term frequently cited in the prevention and early intervention literature that refers to "a pattern of [successful] adaptation or development in the context of significant adversity or risk" (Masten, 2002, p. 3). Masten (2001) believes that resilience is the result of "ordinary human adaptive processes" which are available to all youth (p. 234). Building on this belief, resilience is hypothesized to be equally available to youth with serious emotional disturbance, and is therefore, viewed as an expectation rather than an exception for these youth.

Youth with SED experience additional challenges in their lives, which place them at further risk for negative outcomes, including school failure, substance abuse, and juvenile justice involvement. It is proposed that increasing resilience with these youth will not only reduce these negative outcomes, but will also serve to enhance their attainment of positive outcomes. Many questions, however, exist in terms of how to best approach building resilience with this unique population of youth. For example, youth with SED often need assistance and supports to achieve resilient-based outcomes. Determining the right mix of services and supports that facilitate resilience with this population is an important area for consideration.

Incorporating resilience into local systems of care for youth with SED and their families is a logical next step for the field of children's mental health. This paper will discuss proposed components of a resilient mental health system for youth with SED, the relationship of resilience to evidence-based practice, and suggested service adaptations that can be utilized in facilitating resilience for youth with SED.

Key Elements of Resilience

First, it is important to identify the key elements of resilience most commonly cited in the literature. The key elements of resilience include (Friedman, 2003, as adapted by Hernandez and Shepler, 2003):

1. Connections to individuals, families, and institutions
    a. Positive and supportive relationships and environments
2. Competencies (SAT)
    a. Skills
    b. Abilities
    c. Talents
3. Contributions: service orientation; valued by others
4. Positive view of self and future: self-efficacy; hope and optimism
5. High expectations, standards, and monitoring: community, family, and individual

Based in part on these elements of resilience the following are proposed components of a resilience-based mental health system.

Proposed Components for a Resilience-Based Mental Health System

1. Access to a complete continuum of care including formal and informal services and supports, anchored in evidenced-based services, and in common elements of resilience;
2. Designed to foster resilience at multiple levels: youth, family, and community;
3. Addresses both prevention and intervention across developmental ages and stages;
4. Family- and youth-driven at all levels (including policy);
5. Services are tailored to the unique cultural, racial, spiritual, and ethnic differences of the families they serve;
6. Communities take an active role in the management, monitoring, and protection of each youth's safety, behaviors, and well-being;
7. "Communities…commit to a process of extreme persistence [and creativity] in the delivery of services and supports" (VanDenBerg, 2002, p.8) affording each youth every opportunity to reside and receive services in the least restrictive, most normative setting;
8. Cross-system collaboration and support at all levels;
9. Elements of resilience are integrated into practice;
10. Services are hope- and strength-based, with a balanced focus on asset building and risk reduction;
11. Opportunities for contributions, connections, and positive involvement are created;
12. Environments that encourage high expectations and standards for its youth are promoted;
13. Positive learning environments that enhance abilities, skills, and talents are offered and available; and
14. Outcome measurements include elements of positive change (assets, resources, hopefulness, functioning; Masten, 2002).

Implementation Factors

The following section will briefly identify key factors to consider in the implementation of a resilient-based mental health system. First, it is important to build a foundation of support based on a diverse partnership of key stakeholders including youth, families, providers, child-serving systems, and local and state leaders. Focus groups can then be conducted to gather more in-depth perceptions of resilience from each constituent group. In Ohio, the Ohio Federation of Families for Children's Mental Health conducted regional focus groups with youth and families for this purpose.

An important next step is reaching agreement on the core components and principles of resilience. Once this is decided it is helpful to develop dissemination strategies for the training and adoption of components of resilience into local systems of care, at both the administrative and practice levels. The Ohio Department of Mental Health employs the Coordinating Centers of Excellence for the purpose of dissemination, training, and adoption of best practices. It is anticipated that these centers will assist in the development and dissemination of Ohio's resilience agenda.

Once resilience is implemented, it is important to develop a plan of sustainability. Resiliency efforts need to be embedded in a community structure that supports them and sustains their effects (P. Kanary, personal communication, 2003). To that end, community leaders need to develop public policies that promote the necessary services and supports that foster resilience for youth with SED and their families. Finally, it is important to research the impact of implementing resilience principles and practices at both the individual and systemic levels.

Resilience and Evidenced-based Treatments

A resilience-based mental health system is not regarded as a concept that is distinct from evidenced-based practices or system of care paradigms, but rather is viewed as being complementary to both. We believe that resiliency can be integrated into and inform other best practice models, serving to enhance them. In Ohio, the Center for Innovative Practice has the mission of linking evidence based practices with systems of care. The inclusion of resilience in the work of the Center is a logical place for it, as it works to disseminate evidence based practices, including wraparound and Multisystemic Therapy (MST). Examples of evidenced-based and promising practices that employ elements of resilience include (but are not limited to): wraparound services; MST; intensive home and community-based services; Treatment Foster Care; Functional Family Therapy; The Incredible Years; and The DECA program. Elements of resilience common to many of these services include a strength-based orientation; a respectful partnership with youth and families; a skill building and competency-enhancement focus; an emphasis on supporting and developing positive behaviors and talents; an emphasis on the development of parenting relationships that are high in nurturance, supervision and monitoring; an emphasis on linkage to pro-social activities, peers, and mentors; an emphasis on safety planning and risk reduction; and an emphasis on the development of positive school and community relationships.

Facilitated Resilience

Youth with SED present with unique challenges and often need additional assistance in the form of services and supports to facilitate their achieving resilience and well-being (R. Gilbert, personal communication, 2003). They often have multiple needs that impact their functioning in key areas of their lives including school, family, and community. Because of this, resilience needs to be facilitated ecologically, across life domains. This includes supported connections to peers, activities, and the school; assistance in the development of competencies including skills, abilities, and talents; mentoring (co-participation) in service contributions in the community; building a futures orientation and hopeful view of the future; and encouraging high, but reasonable, expectations in what the youth achieves or accomplishes. Advocacy is one facilitative tool that can be utilized to promote positive perspectives of the youth and family in the community, serving to enhance system relationships and facilitate opportunities for community involvement and connections.

Service Adaptations

It is important to remember that building assets is a necessary but not sufficient strategy for achieving resilience with at-risk youth. It is equally important to decrease risk factors and to reduce presenting symptoms of concern. To achieve this, service adaptations may be necessary to manage the complexity of presenting risk factors and needs for this population of youth. Intensive home-based intervention and wraparound services exemplify this approach and include:

- Delivery of services in the natural environment of the youth and family. Providing services in the home and community enhances access and engagement, and enables the provider to intervene where the greatest needs or barriers exist;
- Increased service intensity and on-call availability;

- Adjusted expectations and realistic goals unique to each youth's strengths, capacities and ability levels; and
- Use of formal and informal resources and supports. Families identify respite and one-on-one supports as critical components of a resilient mental health system (T. Garner, personal communication, 2003).

Conclusion

In summary, resilience is a complementary construct to current evidenced-based practices and system-of-care principles, and is a natural platform for creating an overarching, strength-based framework for both prevention and intervention for youth with SED and their families. Though facilitation and service adaptations may be necessary, resilience is viewed as equally available to youth with SED. In conclusion, with the right kind and amount of services and supports, resilience is an expectation and not an exception for youth with SED.

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Development of the Early Adolescence Resilience Survey

Lodi Lipien, Robert Friedman, Judith Jetson & Katherine Best

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Introduction

Resilience refers to an individual's ability to adapt successfully and function competently despite experiencing stress or adversity (Benard, 1991; Luthar, Cicchetti, & Becker, 2000; Masten & Coatsworth, 1998). Previous research suggests that resilience in childhood contributes to healthy development and improved outcomes in adulthood (Luthar et al., 2000; Masten, Best, & Garmezy, 1990). Although its importance has been widely recognized, the construct of resilience has been difficult to measure precisely because (a) resilience is conceptualized and defined in various ways, (b) resilience is not a discrete quality of individuals, but a dynamic process, and (c) resilience often is measured as a global quality, rather than an attribute that impacts specific areas of functioning. Moreover, previous research has not carefully distinguished between internal and external protective factors that promote resilience. In particular, little is known about the relationship between resilience in youth and external supports, such as prosocial connections and other community characteristics.

The purpose of this study was to develop an instrument that measures protective factors that contribute to resilience in early adolescence, a developmental period that is often associated with an increasing number of stressors with important implications for adult adjustment. In particular, the Early Adolescence Resilience Survey (EARS) highlights external assets of communities that promote resilience and positive decision-making among 10- to 14-year olds. The EARS has been designed to fulfill the need for a low cost and easily administered survey measure of resilience with adequate psychometric properties. Two studies were conducted to evaluate the measurement model and internal consistency of the EARS instrument. Statistical associations between resilience constructs and child demographics also were investigated.

Study 1

Background & Purpose

The EARS instrument was developed based on judgments of a panel of child development professionals ($N = 17$) who elicited items and identified resilience constructs from reviews of existing research and personal experiences. Seventy-two questions representing five related constructs (i.e., Interpersonal Connections, Skills and Competencies, Hope/Optimism, Contributions, and High Expectations) were selected to represent a five-factor model. The five resilience constructs are described in Table 1. The purpose of Study 1 was to assess internal consistency of items and refine the instrument.

Table 1
Description of Factors Comprising
the Early Adolescence Resilience Survey

Factor	*Definition*
Interpersonal Connections	Supportive and caring relationships with other people and organizations
Skills and Competencies	The ability to do something well and take pride in your accomplishments
Hope/Optimism	A positive view of the future and belief in the ability to influence it
Contributions	Balancing your own interests with the interests of others
High Expectations	Receiving positive support and encouragement from others to succeed

Method

Participants. After obtaining parental consent, pilot testing of items was conducted by administering the EARS to 58 respondents at four summer camps in Pinellas County, Florida. The sample was 53% male and 68% White, with a mean age of 13 years.

Measures. The EARS consisted of an 8-item personal information section, and 72 items to be rated on a 1-to-5 Likert-type scale with responses ranging from *strongly agree* to *strongly disagree*. Fifteen negatively worded items were included to reduce response bias. Examples of items include:

Item 4: At my school there is a teacher or another adult who really cares about me. (Interpersonal Connections)
Item 31: I get along well with others. (Skills and Competencies)
Item 39: I think I will have a happy life as an adult. (Hope/Optimism)
Item 42: I enjoy helping other people. (Contributions)
Item 49: My family expects me to get good grades. (High Expectations)

Procedures. Initial contact with a site was made through phone calls to directors of summer camps. Surveys were administered by research staff or camp directors, who received instructions for returning the completed surveys.

Results

Table 2 summarizes results of Study 1. Good reliability in the form of internal consistency was demonstrated across constructs. Values of coefficient alphas were .891 for Interpersonal Connections, .770 for Skills and Competencies, .645 for Hope/Optimism, .772 for Contributions, and .838 for High Expectations. Some negatively worded items were confusing for younger respondents (e.g., "I have a friend about my own age who is mean to me"), and later were dropped from the instrument.

Table 2
Mean Scores and Internal Consistency Reliability of the Early Adolescence Resilience Survey (Study 1; *N* = 58)

Factor	*Number of Items*	*Mean*	*SD*	*Coefficient Alpha*
Interpersonal Connections	34	3.90	.47	.891
Teachers	6	3.61	.68	.678
Parents	7	4.27	.50	.721
Siblings	7	3.66	.73	.926
Peers	7	3.91	.66	.803
Other adults	4	3.90	.78	.805
Other connections	3	4.05	.78	.569
Skills and Competencies	15	4.04	.49	.770
Hope/Optimism	6	4.01	.57	.645
Contributions	6	3.98	.61	.772
High Expectations	11	4.30	.53	.838

Study 2

Purpose

To assess the instrument's measurement model, Study 2 administered a modified instrument, which consisted of 55 items and an 11-item personal information section.

Method

Participants. Three hundred ninety seven young adolescents at 16 child-care programs in Pinellas County, Florida received the EARS after obtaining passive parental consent. Males and females were equally represented (49% and 51%, respectively), and a majority of the sample was non-White (68%). The mean age of respondents was 13 years.

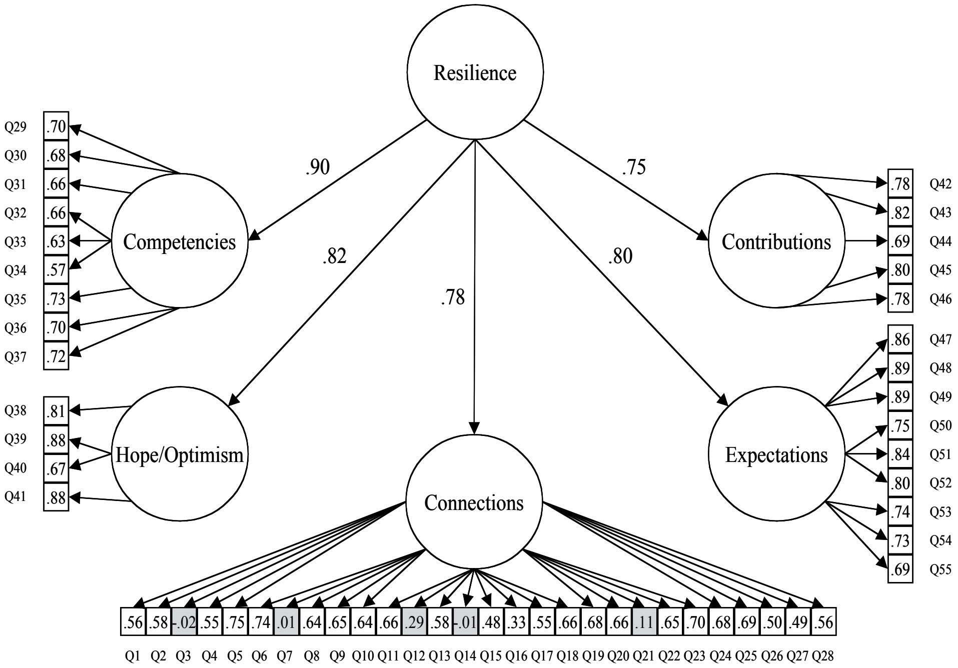
Procedure. The EARS was administered to respondents by research staff during before- or after-school activity programs.

Results

Demographic differences. Statistical associations between resilience constructs and child demographics were assessed with multiple one-way analysis of variance (ANOVA) tests. Results indicate that scores on Interpersonal Connections, Skills and Competencies, Hope/Optimism, and High Expectations were significantly higher for females than males (*p*s < .05). Scores on Connections, Competencies, Hope/Optimism, and Contributions were significantly lower for whites than nonwhites, who were predominantly African American (*p*s < .05). Students who reported earning above average grades (mostly A's or B's) scored higher than failing students (mostly D's or F's) on all resilience factors (*p*s < .01). There were no statistically significant differences in EARS factor scores by age group, number of suspensions in the last year, household structure, number of siblings, or number of moves in the last three years.

Confirmatory factor analysis. As shown in Figure 1, the proposed five-factor model was an adequate fit to the data (RMSEA = .08). Despite strong evidence for a higher order "resilience" factor, loadings suggest that the factors are highly intercorrelated (range = .75 to .90), and an oblique model may be more appropriate. Fifty items had factor loadings that were statistically significant ($p < .05$), with a mean item loading of .69 (range = .33 to .89). Items that demonstrated low loadings and cross-loadings may need to be dropped in order to improve indices of model fit.

Figure 1
Five-Factor Confirmatory Model of the Early Adolescence Resilience Survey (Study 2; *N* = 360)



$\chi^2_{(1425)} = 4753.61, p < .001$, RMSEA = .08

Conclusion

In summary, results indicated that the EARS had adequate psychometric properties for the study of resilience among young adolescents. In contrast to existing survey instruments, the EARS measures both internal factors (i.e., Skills and Competencies, Hope/Optimism) and external factors (i.e., Interpersonal Connections, Contributions, High Expectations) that contribute to resilience. Mean scores on resilience factors were high for the full sample, but results also suggest that the educational system needs to improve children's connections to teachers and their schools. Similarly, among students with failing grades, communities should increase efforts to strengthen protective factors. Other categorical disparities in factor scores, such as statistically significant differences by gender and race, need to be investigated further. Future research will conduct a construct validation study that will continue assessing the ability of the EARS to capture the resilience construct. The final objective of this study is to generate results that can be used to develop programs and social policies that benefit young adolescents by focusing on internal and external assets.

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Symposium Discussion

Lodi Lipien & Robert Friedman

The presentations in this symposium highlight ongoing efforts at the federal, state, and local levels to promote resilience. At the federal level, the Substance Abuse and Mental Health Services Administration (SAMHSA) emphasizes "building resilience and facilitating recovery" in the areas of substance abuse and mental illness. Nancy Davis, a Public Health Advisor at SAMHSA, defined resilience and described its relationship to other key constructs, such as promotion and prevention. Dr. Davis also described current efforts at SAMHSA to promote resilience, such as the National Registry of Effective Programs and Practices, the Safe Schools/Healthy Students Interdepartmental Grant Program, and the Youth Violence Prevention Grant Program. Rick Shepler, a Home and Community-Based Services Consultant in Stark County, Ohio, described efforts to foster resilience in youth within Ohio's mental health system of care. Dr. Shepler also discussed the components of a resilience-based mental health system and strategies for implementation and dissemination. The final presentation by Lodi Lipien, an Assistant in Research at the University of South Florida, described results of a research study to develop a survey instrument that measures resilience among young adolescents. In the future, the Early Adolescence Resilience Survey will be used to develop programs and policies that benefit youth.

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Positive Behavior Support for Infants and Toddlers At-Risk: A Proactive, Prevention-Oriented Approach Toward Healthy Development and School Readiness

Kathleen Armstrong
Madelyn Hornbeck

Introduction

A primary need in many communities is to develop effective practice for supporting children with emotional and behavioral challenges and their families. A number of studies have indicated that young children with severe problem behavior (i.e., behavior problems beyond developmental expectations are likely to continue to manifest behavior challenges and have a high probability of continuing to have difficulties throughout elementary school and into early adolescence (Campbell, 1995; Chamberlain & Patterson, 1995; Egeland, Kakloske, Gottesman & Erickson, 1990; Patterson, DeBaryshe, & Ramsey, 1989; Ramsey, Patterson, & Walker, 1990; Shonkoff & Phillips, 2000). The presence of persistent challenging behavior in young children often compromises the development of friendships with peers, access to childcare programs and participation in natural environments (Fox & Dunlap, 1999). Moreover, a child's persistent challenging behavior creates intense and stressful disruptions in family lifestyle (Boulware, Schwartz, & McBride, 2002; McManhon & Forehand, 2003).

Positive behavior support (PBS) offers many of the components necessary to address the unique needs of individual children with problem behavior and their families. PBS has been conceptualized as the process that is broadly applied to address the challenging behaviors of the individual through the implementation of prevention and instructional supports (Fox, Dunlap, & Philbrick, 1997; Koegel, Koegel, & Dunlap, 1996). Rather than focusing most of the intervention time and attention on eliminating challenging behavior, PBS is focused on prevention. By utilizing the functional assessment process, PBS identifies the purpose of the problem behavior, acknowledges and builds upon strengths and preferences of the child, reinforces appropriate behavior, and teaches the child functionally equivalent replacement behaviors.

Further, PBS is a family-centered support that teams family members with other caregivers, such as childcare providers, teachers, and therapists, and together they develop proactive and preventive strategies that address the child's problem behavior. This teaming helps to insure that intervention is both acceptable and sustainable for caregivers to implement from the beginning. The intervention is designed to take place within the natural environment of the child and family, within everyday routines and interactions. Included in the plan are the necessary resources, support, and knowledge needed to nurture their child. Outcomes are carefully documented, and if the family is satisfied, new goals are set.

While there is a strong evidence-base documenting the efficacy of PBS with young children and children with disabilities, to date there has been little data regarding this approach with infants and toddlers within a system of care, as mandated by Part C of the Individuals with Disabilities Education Act (IDEA; U.S. Dept. of Education, 1997). Early Intervention Positive Behavior Support (EIPBS) is a research project funded by the Office of Special Education Programs (OSEP) in 2003 intended to provide evidence as to the application of this approach with very young children and their families. Each component of the EIPBS model has been supported by research as well as meeting standards for best practice in early intervention. The three features integral to EIPBS are: (1) an emphasis on functional communication and skill development, (2) social inclusion and participation, and (3) family supports that are congruent with systems-of-care values.

The critical need for intervention in the early years is widely supported by numerous research studies, especially those focusing on the impact of risk and protective factors on early brain development (Meisels & Shonkoff 2002). The presence of challenging behavior in the early years is a significant risk factor for later conduct problems and poor outcomes extending into adulthood, including school failure, unemployment, psychiatric disturbances and poor health (Armstrong, Dedrick, & Greenbaum, 2003; Farrington, 2003; Kratzer & Hodgins, 1997). Through research and clinical refinement of this approach, EIPBS intends to add to the evidence-base for early intervention.

Our presentation consisted of a single case study in which PBS was applied in both home and childcare settings with a two-year-old child and his family recruited through the University of South Florida's Speech Department. While this child and his family were receiving early intervention services through Part C of the IDEA, the services were piecemeal and totally child focused. There was little collaboration between service providers and even less parental support or instruction, leaving the family feeling confused and unsuccessful. Daily family activities were affected by constant tantrums, and these behaviors adversely affected relationships with relatives and friends. Especially compromised was the quality of life of the affected child's 4-year-old sibling. The parents feared that their two-year old son would never be able to function in a regular school with typical peers.

PBS was the first intervention that the family felt truly matched their values. It provided them with the tools to help them recognize and utilize their son's strengths in order to overcome his challenges. Through the functional behavior assessment process, the parents came to understand the purpose of their child's problem behavior and learned strategies to prevent and manage challenging behavior, and to teach their child appropriate behavior.

A functional behavior assessment is comprised of an indepth interview with caregivers, observation of the child in natural settings, and may also include behavior rating scales. Once these data are collected, the reason for the problem behavior becomes clearer, and hypotheses are generated. A support plan is then generated, in which parents/caregivers are taught prevention strategies and new responses, such as redirection or specific praise, and the child is taught skills to replace the challenging behavior. Data are collected to document increases child engagement and decreases n challenging behavior. At any time, the plan may be revised to increase child engagement.

This case study offers a demonstration of the utility of PBS with young children with challenging behavior and their families. There are few case studies in the literature that document intervention for children with problem behavior under age three, yet it is increasingly apparent that we need to address these needs because of the significant impact on their future. One of the basic principles of early intervention is that "earlier is better," so that developmental trajectories can be improved.

Energized by their success, these parents sought professionals that understood or were willing to learn the PBS process. They created a "PBS team" for their son, which worked closely together to help him to function at home, in the community and most important to them, to prepare him for transition to preschool. What helped to make this process successful was that the adults figured out what the child was communicating, through his behavior, and how to help him understand what the expectations were. For example, a visual schedule helped him to understand the routines throughout his day, while a timer helped to signal transitions to new activities. Further, the child learned new skills, such as pointing or asking for help, rather than tantruming. Adults learned how to present directions clearly, and ways to avoid power struggles.

This child is currently doing very well in a typical preschool setting. He is "a regular kid that gets invited to birthday parties and play dates," who has a best friend that instinctively practices PBS. He is popular, funny, and is missed when he is absent from school. The family has long since achieved their original goals and continues to work on new ones. They recognize the importance of being proactive and the need to collaborate with others in order to support their child's development and to function better as a family. Learning the PBS approach positively impacted this family as a whole and increased their competence and confidence. True to the intent mandated by Part C of the IDEA, PBS both enhanced the development of the child with disabilities and the capacity of the family to meet his special needs.

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Riverside County, California's System of Care for Early Childhood

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Introduction

Behavioral problems that present in early childhood are predictive of behavioral problems later in life (Campbell, 1997; Stratton, 1998). Consequently, early childhood intervention is one of the most effective means for preventing significant emotional and behavioral problems in later childhood and adulthood (Carnegie Task Force, 1994; Nelson & Bloom, 1997; Walker, Colvin & Ramsey, 1995). This paper summarizes an evaluation framework developed around a countywide community mental health approach to service delivery and systems-of-care principles for behavioral problems in early childhood. With a range of programs serving this population, key program administrators were engaged in the process of developing a comprehensive logic model to create a standardized model of service delivery activities.

The California Early Childhood System of Care focuses on four service areas: (a) system integration; (b) community-based support; (c) Preschool aged outreach; and (d) direct services, which include prevention and intervention activities. *System integration* refers to developing relationships and collaborations with preschools, childcare centers, and community health care providers. *Community-based support* is provided through trainings and presentations to educate community members about early childhood mental health issues. *Preschool aged outreach* requires the development of referral mechanisms for targeting children and families with mental health needs within their typical community settings such as preschools, child care centers, and through community health care providers.

The fourth service area, *direct services*, delivers services through a range of programs focusing on either prevention or intervention. *Prevention activities* focus on encouraging pediatricians and health care providers to screen children and families. *Intervention activities* focus on partnering with community preschools and childcare centers in order to identify children in need of intervention. Children targeted exhibit significant behavioral problems that often resulted in expulsion from one or more preschools or day care centers. Because the locations and types of services delivered are based on the needs of the children, services include parent education, classroom intervention, onsite intensive services, home intervention, clinic based treatment, and referrals to other community agencies equipped to treat mental health problems and issues in early childhood. There are primarily two service delivery models. The first utilizes a clinical case management approach and the second is based on the evidence-based program, The Incredible Years (Webster-Stratton, 1984), which includes a parent education component.

Methods

Measures

Participants included 424 children, ages 0–5, and their families who began services in December, 2000. Instruments for the evaluation included the: (a) Devereux Early Childhood Assessment (DECA; Devereux Foundation, 1998), completed by caregivers; (b) Preschool and Early Childhood Functional Assessment Scale (PECFAS; Hodges, 1999), completed by clinicians, (c) Parenting Stress Index (PSI; Abidin, 1995), completed by caregivers, and (d) Parent Practices Interview (PPI; Webster-Stratton, Reid, & Hammond, 2003), also completed by caregivers.

Process evaluation focused on monitoring service delivery and screening activities and included regular assessment of the quality of interactions between the child and caregiver within the therapeutic context. This portion of the evaluation used an instrument developed for the California State Department of Mental Health's Clinical Services Study as a part of the Infant-Preschool and Family Mental Health Initiative. Depending on the focus of each program, outcomes were assessed with a combination of the instruments described above.

Evaluation

Prevention and Intervention Activities

For prevention activities, the process evaluation included monitoring activities related to training and engaging pediatricians and other health care providers in the community. After trainings were completed, providers participated in the screening project to provide referrals to the community mental health agency, and the process evaluation focused on the extent to which providers were conducting screenings of their patients. Process outcomes also regularly assessed the quality of the relationship between the child and the caregiver. Outcome evaluation for prevention and screening activities focused on determining whether there were reductions in the characteristics that placed the children at-risk for future behavioral concerns.

The DECA was used to screen for behavioral problems to help determine who should be offered services. After participating in trainings and presentations regarding early childhood mental health needs, pediatricians and community health care providers were provided financial incentives to administer DECA to the parents of patients ages 2-5 years. Web-based data entry permitted real-time feedback to participating health care providers regarding their patients' screening results. Follow-up DECA data from, during, or after services were compared with initial screening data via the same web-based system.

For intervention activities, outcomes focused on whether there were improvements in problem areas. This included children's problems in school or daycare, in the home, in the community, in behaviors toward others, in moods, self-harm, and thinking/communication as measured by the PECFAS, and problems with parenting skills as measured by the PPI.

Results

Out of the 399 children served, 2% were less than a year old, 3% were one year old, 21% were two years old, 27% were three years old, 33% were four years old, and 14% were five years old. The children were predominately Caucasian (45%), and over a third were Hispanic (37%). Primary diagnoses included adjustment disorders (28%), oppositional defiance disorder (25%), and attention-deficit hyperactivity disorder (23%). There were 15,782 service contacts for the sample; while a wide range of services were provided, the most common types of services were collateral (46%), rehabilitative (17%), group therapy (10%), and case management (9%).

Prevention and Screening Activities

Process evaluation demonstrated a steady, incremental increase in the number of children screened in the community as more and more health care providers were recruited and trained. Service capacity increased over time as more staff were hired into county early childhood programs. A total of 1,175 children were screened in the community, of which 881 were contacted regarding the outcomes of their screenings (the others were unavailable due to disconnected phone numbers and missing address information). A total of 203 clients received direct mental health services as a result of the screening results. With regard to client level process data, regular assessments of the quality of the interaction between the child and the caregiver within the therapeutic environment indicated that there was an improvement in child and caregiver relationships over time. There was significant improvement in the attunement between the child and caregiver, $t(82) = 4.60$, $p < .001$; the affect or feelings of the child, $t(82) = 4.25$, $p < .001$; the affect or feelings of the caregiver, $t(82) = 3.39$, $p < .001$; and in the progress being made, $t(82) = 6.14$, $p < .001$.

In terms of outcomes, initial data on those who have completed the program ($N = 37$) look promising. Results indicate that children had significantly improved functioning across the DECA four protective factors, including Initiative, $t(36) = 3.87$, $p < .001$; Self-Control, $t(36) = 4.63$, $p < .001$; Attachment, $t(36) = 3.56$, $p < .001$; and Total Protective Factors, $\mathrm{t}(36) = 4.91$, $p < .001$. Outcomes also were assessed using the PSI. Although there were limited data available ($n = 19$), parenting stress demonstrated significant improvement, $t(18) = 2.35$, $p < .05$. Primarily, parents demonstrated a reduction on the PSI Defensive Responding subscale, $t(18) = 2.71$, $p < .05$.

Intervention Programs

Intervention programs resulted in client level improvement as measured by the PECFAS, $t(35) = 8.87, p < .001$. In one case management program, data also were collected regarding restrictiveness of educational setting. These data indicated that a majority of children (63%) were transitioned from a restrictive, therapeutic preschool setting into a regular school setting. Complete PPI data were available for the first 12 parents who had completed the Incredible Years parent curriculum. Even though this program is relatively new and few parents have completed the program, initial results indicate that parents significantly improved in three of the PPI subscales. Parents showed less Harsh Discipline, $t(11) = 4.14, p < .01$; less Inconsistent Discipline, $t(11) = 2.77, p < .01$; and an increase in Appropriate Discipline, $t(11) = 2.15, p < .05$.

Discussion

Overall, the early childhood system of care demonstrated success in meeting each of the goals initially targeted. System integration with preschools, childcare centers, and community health care providers was successful—as demonstrated by the number of referrals obtained from these settings as well as the number of personnel from these sites who participated in community presentations and trainings.

These activities indicated that the early childhood programs were able to provide community-based support to community agencies serving this population, and outreach activities resulted in substantial referrals. Service capacity focusing on this age group was dramatically improved, and direct services resulted in the improvement of children's social and emotional functioning. Children experienced improvements in protective factors and reductions in problem behaviors. In addition, families reported reductions in stress.

While future evaluation activities will need to focus on more objective evaluations of training activities rather than just gathering training attendance data, these evaluation activities demonstrate that the primary population targeted by these programs demonstrated improvements in client-level mental health outcomes.

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Building Resilience in Children of Mothers who have Co-Occurring Disorders and Histories of Violence: Preliminary Outcomes of the WCDV Children's Subset Study

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Introduction

Children exposed to parental substance abuse, mental illness and violence face profound challenges including increased risk for emotional and behavioral problems, substance abuse and victimization (Connors, et al., 2002; Kitzmann, Gaylord, Holt & Kenny, 2003). Parental entry into treatment affords an opportunity to intervene early, providing supportive services for both parent and child and building skills to resist later problems. The general consensus in the clinical literature is that provision of services for children of women with substance abuse or co-occurring disorders is grossly inadequate, that few research studies exist in this area, and that costs to society will continue to skyrocket without implementation of comprehensive treatment.

The Women, Co-Occurring Disorders and Violence study (WCDV) was a five-year initiative funded by the United States Substance Abuse and Mental Health Services Administration (SAMHSA), which also funded the additional Children's Subset Study at four of the nine women's study sites[1] (Stockton, CA; Denver, CO; Los Angeles, CA; Cambridge, MA). These sites, along with a national Coordinating Center and SAMHSA representatives, designed, implemented, and evaluated a common intervention protocol. The Children's Study was designed as an exploratory study using an intent-to-treat model, with both intervention and comparison samples at each site. The research question investigated by the study was: Do trauma-informed, age-specific interventions, including concurrent services for mother and child, lead to increases in safety, self-care, healthy interpersonal relationships, and self-identity (including increases in self-awareness and self-worth) as compared to services as usual?

Method

Intervention design for the Children's Study. The cross-site children's intervention included three components: (1) a clinical assessment; (2) resource coordination and advocacy; and (3) a twelve-session skills-building group. The curriculum for the skills-building group was adapted for the target population from Peled and Davis's Groupwork with Children of Battered Women: A Practitioner's Manual (1995). Specifically, the content of sessions was modified to include issues of parental substance abuse and mental illness as well as domestic violence and trauma. Services as usual in the comparison condition reflected a wide range of parenting and case management services delivered to children while their mothers participated in treatment.

Eligibility and sampling. The sample (*n*=253) consisted of a subset of mothers who participated in the WCDVS. To be eligible for participation in the Children's Sub-Set Study, women must have been enrolled in the larger women's study, must have been the mother or caretaker of a child aged 5 to 10 with whom she had at least weekly contact either in-person or via telephone, and must have spoken English or Spanish as her primary language.

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[1] *Phase II Children's Subset Study Sites (listed in alphabetical order by state): Los Angeles, California: PROTOTYPES Systems Change Center, Vivian Brown, Principal Investigator, Stockton, California: Allies: An Integrated System of Care, Lisa Russell, Principal Investigator, Denver, Colorado: Arapahoe House – New Directions for Families, Nancy VanDeMark, Principal Investigator, Cambridge, Massachusetts: Women Embracing Life and Living (WELL) Child Project, Norma Finkelstein, Principal Investigator. The WCDVS Coordinating Center is operated by Policy Research Associates (PRA), located in Delmar, New York.*

At baseline, a comparison of the child participant profiles between the intervention and comparison conditions revealed that the groups were generally equivalent to one another. This was true with reference to both static characteristics such as age, gender, race/ethnicity, level and pattern of previous service utilization, and trends in living situation, and dynamic characteristics such as ratings of functioning and maternal perception of emotional/behavioral problems/issues and strengths.

Measures. The baseline interview for the Children's Subset Study consisted of items from both established and newly created measures designed to gather information from the parent regarding the child across a variety of domains including demographics, educational history, current custody status, current living situation, abuse history, involvement with legal system and child welfare, and substance use. Family history domains included parental exposure to domestic violence, psychiatric hospitalization, criminal justice system, and substance abuse treatment as well as maternal ratings of child resiliency and child emotional and behavioral domains. The Behavioral and Emotional Rating Scale (BERS; Epstein & Sharma, 1998) was used as the primary outcome measure of child emotional and behavioral domains.

The BERS is a 52-item measure that is designed to assess strengths based on caregiver report across five subscales—Interpersonal Strengths (IS), Family Involvement (FI), Intrapersonal Strengths (IaS), School Functioning (SF), and Affective Strengths (AS)—as well as provide an overall strength quotient. Unlike many instruments used in the assessment of children, the BERS maintains a focus on positive areas of functioning. As stated in the administration and scoring manual (Epstein & Sharma, 1998), among the primary uses of the BERS are to identify and document the emotional and behavioral strengths of children, to measure progress in a strength area as an outcome of specialized services and to assess strengths in research and evaluation projects.

Preliminary Results

Linear regression models were used to determine whether participation in the intervention predicted improvement in children's emotional and behavioral outcomes over 6- and 12-months. A difference score model was used for both the 6- and 12-month analyses and was based on the results of testing for differences in the outcome variables at baseline. This model was consistent with the model used in the larger women's study and was used for differences with effect sizes greater than 0.100. Analyses were run using BERS Strength Quotients calculated, with individual item imputation methods used to reduce the impact of missing data. The primary covariates tested in the full model were site, site by treatment group interaction, age, gender, race, experience of violence in the household, number of days since mother's baseline interview and mother's outcomes in the women's study.

At 6-months, mother's 6-month outcomes significantly predicted children's positive outcomes. Specifically, children whose mothers had positive outcomes did well regardless of treatment assignment, while children in the intervention group showed general improvement regardless of mother's 6-month outcomes (effect size=0.363, $p = 0.048$).

At 12-months, mother's 12-month outcomes no longer played a significant role in predicting children's positive outcomes (effect size=0.054, $p = 0.949$). Treatment group, however, did play a strong and significant role (effect size=0.462, $p = 0.004$) with the intervention group showing more positive outcomes. Age was also found to be a significant predictor of children's outcomes ($p = 0.032$), with younger children showing better improvement than older children. Furthermore, there was no interaction between treatment group and age ($p = 0.908$), with the intervention group demonstrating better outcomes than the comparison group across age groups.

Discussion

The findings convey two important messages. First, in the short term (i.e., six months), mothers' positive well-being is the strongest predictor of their children's positive well-being. In contrast, when mothers' well-being is poor, exposure to the described intervention is the strongest predictor of children's positive well-being. Second, in the long term (i.e., twelve months), exposure to the described intervention is the strongest predictor of children's positive well-being regardless of their mothers' outcomes. Compared with older children, younger children have better long term outcomes, independent of intervention exposure.

The preliminary analyses suggest that the children's intervention is effective in influencing improved outcomes. It is unclear, at this point in the analyses, the degree to which the differential intervention effects between 6-month and 12-month outcomes may be related to a leveling off in the rates of mothers' improvement after the 6-month data collection point and/or the cumulative dose of intervention received by the children. Further analyses will examine these and other factors that may be associated with greater or lesser intervention impact. In general, these findings are limited by the nature of self-report data. Further information regarding the methodology of this study, as well as more detailed information regarding the final outcome analyses may be found in the Journal of Community Psychology (Noether, et al., in press).

Implications

Interventions such as parenting services, individual and group interventions to build resiliency and skills, and linkage to other needed resiliency and mental health services may be the deciding factor for a child facing tremendous challenges. Failing to capitalize on this opportunity to interrupt the intergenerational cycle of the violence, substance abuse and mental illness is shortsighted. Cultivating the opportunity to intervene with these children by providing an individualized assessment of their needs and services as indicated may save both money and lives in the future. Parental treatment offers a window of opportunity to reach children early in the development of childhood problems during a time when the parent is motivated to make dramatic life changes.

Substance abuse and mental health treatment providers of services to parents encounter a unique opportunity to address the intergenerational impact of substance abuse, mental illness, and violence on the children of participating adults. Although expansion of services for children entails paradigm changes, new resource needs, and additional costs, building on the existing parental treatment infrastructure may minimize the cost of this enhancement. It is recommended that funding agencies and treatment providers dedicate resources to expanding available treatment services to children of individuals receiving services from substance abuse and mental health treatment agencies in an attempt to mediate the long term effects of violence, substance abuse and mental illness on society. This expansion of efforts will likely require collaborations across traditionally separate systems of care: substance abuse prevention and treatment services, adult and children's mental health services, child welfare, education, domestic violence prevention and intervention services, and criminal justice.

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Symposium

Mental and Physical Health of Youth in Clinical and Community Settings

Chair
Teresa L. Kramer

Discussant
E. Wayne Holden

Authors
Martha Phillips
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Symposium Introduction

Teresa L. Kramer

There is sufficient evidence to suggest that the interaction of mind and body influences health outcomes. Adverse emotional states and stress can impact physiology; similarly, certain physical disorders can wreak havoc upon an individual's mental status. This symposium explored the relationship between physical and mental health in children and adolescents in general hospital, psychiatric and community settings. In a study of community hospitals in 22 states, youth admitted for an acute or chronic illness with a comorbid mental health diagnosis had longer lengths of stay and correspondingly higher costs associated with their visits than youth with only an acute or chronic illness. In a second study, investigators found that half of youth treated in seven outpatient and inpatient psychiatric settings reported comorbid medical conditions, which were associated with more severe emotional and behavioral problems and, in some cases, poorer clinical outcomes. In a third study of community adolescents, overweight youth were more likely to meet criteria for a depressive disorder than youth with average weight. These studies lend strong support to the need for improved strategies to assess comorbid medical disorders, coordinate care with other health professionals and address the psychosocial aspects of medical illness in youth seeking mental health treatment.

Relationships between Depression and Obesity among Adolescents Participating in the Third National Health and Nutrition Examination (NHANES III)

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Introduction

Weight status, particularly being overweight, and depression are significant issues for adolescents. It has been estimated that some 10% of youth are depressed during the adolescent period (Stunkard, Faith, & Allison, 2003), 10% are overweight, and 9% report having attempted suicide within the past year (Grunbaum et al., 2002). Being overweight in adolescence has been shown to be associated with a number of short- and long-term health risks in adolescence and adulthood (Deckelbaum & Williams, 2001; Dietz, 1998; Must & Straus, 1999) and with psychosocial disorders as well (Mustillo, Worthman, Erklani, Keeler, Angold, & Costello, 2003). Those psychosocial correlates include: social isolation (Strauss & Pollack, 2003); weight-based teasing, associations with low self-esteem, depressive symptoms, and suicidal ideation (Eisenberg, Neumark-Sztainer, & Story, 2003); and eating disorders and anxiety (Isnard et al., 2003).

At least two recent reports have described a relationship between adolescent depression and adult obesity. Richardson and colleagues (2003) followed a longitudinal cohort of adolescents in New Zealand, finding that depression in late adolescence was associated with obesity in young adulthood among girls but not among boys. Similarly, Stunkard et al. (2003) found that major depression in adolescence predicted a greater body mass index (BMI) in adult life, compared to individuals who had not been depressed.

Investigations of the co-occurrence of depression and obesity in adolescence, however, have resulted in inconsistent findings. For example, Mustillo and colleagues, administering a structured diagnostic interview to a sample of rural, white adolescents, found that chronically obese boys were more likely to be depressed than their non-obese peers (*RR* = 3.72, $p < 0.01$), but the association did not hold for girls or for boys with other obesity patterns (e.g., adolescent obesity only, childhood obesity only; Mustillo et al., 2003). Another investigative team (Goodman & Whitaker, 2003) found that baseline depression was not associated with baseline obesity in adolescents interviewed within the National Longitudinal Study of Adolescent Health. Thus, the association between obesity and depression in adolescents is unclear. Further, our literature review did not reveal any investigations of the interactions between race/ethnicity and gender with obesity and depression in this age population.

Adolescents overall represent a high-risk population for health risks and poor outcomes associated with depression. Suicide is a primary cause of death for this age group, and school violence, including violence fostered by social isolation, is on the increase. To the extent that obesity is associated with depression, at least within some age-gender-race groups, there may be unique opportunities for families, schools, and mental health providers to target their efforts to prevent the occurrence of or facilitate the early identification and treatment of adolescent depression.

This investigation analyzed data from the Third National Health and Nutrition Examination (NHANES III) to assess the relationship between obesity and depression in a large, nationally representative sample. Logistic regression analyses were completed to assess this relationship among 15-16 year old adolescents, adjusting for the concurrent effects of gender and race.

Methods

Secondary analyses were completed using data from the NHANES III, completed between 1988 and 1994. A nationally representative sample of United States residents, ages two months and older, was selected and assessed in two phases: Phase I between 1988 and 1990, and Phase II between 1991 and 1994. Randomly selected members of selected households completed home interviews and center-based examinations. The examination administered to individuals aged 15 through 39 included the Diagnostic Interview Schedule (DIS; Robins, Helzer, Croughan, & Ratcliff, 1981), a semi-structured diagnostic interview designed to elicit information that could be used to determine whether the individual was eligible for one or more psychiatric diagnoses, based on the American Psychiatric Association Diagnostic and Statistical Manual, third edition (1980) . Weight and height were also recorded during the examination, providing data to calculate a BMI score.

Public use data files containing both interview and examination data were analyzed using SAS® and SUDAAN, a statistical software program specifically designed to analyze survey data collected using complex multi-stage sampling designs. Analyses included all individuals, aged 15.0 to 16.9 years of age at examination and having complete data for key variables (age, sex, race, height, weight, and depression). An individual was categorized as having a depressive disorder if he/she met DSM-III criteria for major depression (single or recurrent episodes) or dysthymia. An individual was categorized as being obese if his/her calculated BMI fell at or above the 90th percentile for age and gender, based on the 2000 Centers for Disease Control and Prevention growth charts. Race was categorized as white or non-white, and gender as male or female. Logistic regression analyses, both bivariate and multivariate, were used to assess the relationships among key variables under study. Odds ratios, crude and adjusted, with 95% confidence intervals were used to assess the strength and significance of associations.

Results

Information for a total of 871 adolescents aged 15 or 16 years was available for analysis. Of these individuals, 57% were White, 52% were female, 34% overweight, and 8% depressed. A greater proportion of females and Whites were depressed, compared to their counterparts (see Table 1).

Results of logistic regression analyses are presented in Table 2. Overall, three logistic models were analyzed, with depression entered as the binary outcome and variables representing gender, race, and obesity entered as predictors. One model included all individuals in the sample and included gender as a predictor

Table 1
Sample Characteristics and Proportion Depressed by Race/Ethnicity and Gender Groups

	Total sample (n = 871)	*Depressed (n = 67; 7.7% of total)*
Male	415 (47.6%)	19 (28.4%)
Female	456 (52.4%)	48 (71.6%)
White	497 (57.1%)	48 (71.6%)
Nonwhite	374 (42.9%)	19 (28.4%)
Obese	274 (34.0%)	25 (37.3%)

Table 2
Results of Multivariate Logistic Regression Analyses Modeling the Odds of Being Depressed Among Overweight and Non-Overweight Adolescents, Aged 15-16 Years, Overall and by Gender Groups

	Total sample Adjusted odds ratio	*Females only Adjusted odds ratio*	*Males only Adjusted odds ratio*
Overweight	1.5 (0.6 – 3.7)	0.8 (0.2 – 2.4)	4.3 (1.0 – 19.2)
Gender (female)	2.7 (1.1 - 6.7)	--	--
Race (white)	2.8 (1.5 - 5.2)	2.4 (1.1 - 5.3)	3.7 (1.0 – 13.4)

Note. Odds Ratios are presented with 95% Confidence Intervals.

variable; one model included only males and included race and obesity as predictors; and the third model included only females, with race and obesity as predictors. As shown in Table 2, analyses including the total sample indicated that obese adolescents were 1.5 times more likely to be depressed than non-obese adolescents but the association was not statistically significant. Females and Whites were three times more likely to be depressed than their respective counterparts, and the associations were significant.

However, there was substantial effect modification by gender (see Table 2). Analyses including male adolescents only indicated that overweight males were more than four times more likely to be depressed than peers who were not overweight, and the association was significant. The association was not present among females, with overweight females being .8 times as likely to be depressed as their counterparts who were not overweight and the association was not significant. In both gender groups, White adolescents were two to four times more likely to be depressed, holding weight status constant, and the associations were significant in both gender groups.

Discussion

Findings from this investigation indicated that the odds of depression among male overweight adolescents were more than 4 times greater than the odds of depression among male peers who were not overweight. The relationship between obesity and depression was not found among female adolescents. The observed relationships between obesity and depression in adolescents may highlight opportunities for families, schools, and mental health providers to target efforts to prevent the occurrence of or facilitate the early identification and treatment of adolescent depression.

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Impact of Mental Disorders on Pediatric Hospitalizations for Physical Illness and Injury

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Introduction

Evidence indicates that chronic physical illnesses are associated with increased rates of emotional and behavioral problems in childhood and adolescence, which appear to hinder the effective medical management of these illnesses. Such findings have been most extensively documented in the case of asthma. For example, children with asthma have been found to exhibit higher rates of psychiatric symptoms and disorders than children without asthma (Bussing, Halfon, Benjamin, Wells, 1995; Mrazek, 1985), and higher scores on measures of internalizing and externalizing problems have been found to be associated with noncompliance with a medical regimen (Christiaanse, Lavigne, & Lerner, 1989) as well as more frequent episodes of wheezing and poorer functional status (Weil, Wade, Bauman, Lynn, Mitchell & Lavigne, 1999). Similar findings are evident in the literature on other chronic conditions, for example, diabetes (Kovacs, Iyengar, Goldstron, Obrosky, Stewart, & March, 1990; Kovacs, Obrosky, & Stiffler, 1994; Wilkinson, 1987), epilepsy, leukemia (Ott et al., 2003; Sawyer, Crettenden, & Toogood, 1986) and cystic fibrosis (Thompson, Hodges, & Hamlett, 1990). The relationship of psychopathology to injury in youth has been documented as well, both as risk factor (e.g., Bussing, Menvielle, & Zima, 1996) and as sequelae (e.g., Bloom et al., 2001; Max et al., 1998). However, the potential association between acute illness and psychological problems in children and adolescents has not been systematically investigated.

It has been demonstrated that primary mental disorders constitute one of the most common reasons for hospitalization in children and adolescents, are associated with the longest lengths of stay of all categories of disorder, and account for disproportionately large shares of long hospitalizations, days of hospitalization, and hospital charges (Chabra & Chávez, 2000; Chabra, Chávez, & Taylor, 1997; Kozak, Norton, McManus, & McCarthy, 1987; McManus, McCarthy, Kozak, & Newacheck, 1991). However, despite an extensive literature on consultation–liaison child psychiatry (Knapp & Harris, 1998a; 1998b), the effect of comorbid mental disorders on hospitalizations for physical conditions has not been examined to date. This descriptive study sought to document the frequency of comorbid mental disorders in hospitalizations for chronic and acute physical illnesses and injuries in children and adolescents 6 to 17 years old, as well as their potential impact on length and costs of hospitalization.

Method

Sample. This study used the Healthcare Cost and Utilization Project Kids' Inpatient Database, developed by the Agency for Healthcare Research and Quality. The target sample consisted of pediatric discharges from community hospitals in the United States in 1997. Community hospitals as defined by the American Hospital Association include "nonfederal, short-term, general and other specialty hospitals, excluding hospital units of institutions" (American Hospital Association, 1998). Specialty psychiatric hospitals and substance use treatment facilities are not included.

The sampling frame consisted of discharges of youth ages 18 and under from all community hospitals in 22 participating states. Hospitals were stratified by ownership/control, bed size, teaching status, rural/urban location, geographic region, and hospital type (children's vs. other). Ten percent of normal newborns and 80% of all other pediatric cases were sampled within each stratum. Hospital-specific sample weights were available to permit derivation of national estimates of utilization and costs. Data were available from 2,521 hospitals on 1.9 million unweighted discharges, which represent approximately 6.7 million discharges when weighted to represent the U.S. population.

The sample for the present study consisted of discharges of children and adolescents 6 to 17 years old with a principal (i.e., first-listed) diagnosis from the International Classification of Diseases (ICD-9-CM; WHO, 1980) of any of the following medical illnesses and injuries: asthma, cystic fibrosis, Type I diabetes, epilepsy, leukemia , sickle cell anemia, appendicitis, cellulitis , pneumonia, burns, fractures, and internal injuries.With the exception of a few selected conditions of interest (e.g., cystic fibrosis, sickle cell anemia), these diagnoses represent the most common reasons for hospitalization of children and adolescents, and are associated with the majority of discharges, days, and costs in this population (Chabra et al., 1997). Of 1,232,778 weighted discharges with these principal diagnoses (527,946 unweighted), 63% were for adolescents 13 to 18 years old, 51% were for males, and 72% for whites. Fifty-six percent were for youth with median family incomes less than $30,000.

Data analysis. Frequencies of discharges with any (i.e., at least one) secondary diagnosis of mental or substance-related disorder were calculated. In addition, mean length of stay and mean charges per hospitalization for discharges with and without secondary diagnoses of mental or substance-related disorder were calculated.

Results

Results are presented in Table 1. They indicate wide variation across physical conditions in proportions of discharges with secondary diagnoses of mental disorder, ranging from 1.88% for appendicitis to 23.89% for epilepsy. There was no consistent pattern in the proportions of discharges with secondary diagnoses of mental disorder across broad categories of physical conditions, with considerable overlap in the ranges of proportions for chronic illnesses (2.66%-23.89%), acute illnesses (1.88%-6.52%), and injuries (4.98%-10.31%). In every instance, the presence of secondary diagnoses of mental disorder was associated with a longer mean length of stay, and with only one exception, with correspondingly higher mean costs. The most striking example is in the case of leukemia, for which length of stay and costs are nearly doubled.

Table 1
Frequencies, Length, and Costs of Hospitalizations With and Without Comorbid Mental Disorders

Principal Diagnosis	*Weighted Frequency (N = 1232778)*	*Frequency with comorbid mental disorder*	*Percent with comorbid mental disorder*	*Mean LOS without comorbid mental disorder*	*Mean LOS with comorbid mental disorder*	*Mean costs without comorbid mental disorder*	*Mean costs with comorbid mental disorder*
Chronic illnesses							
Asthma	81233	2854	3.51	2.58	3.08	5519	6958
Cystic fibrosis	3675	208	5.65	10.74	11.86	27504	32043
Diabetes, Type I	23204	1997	8.60	2.94	3.80	5238	6972
Epilepsy	7641	1825	23.89	3.66	3.93	10928	10010
Leukemia	3676	163	4.42	14.10	27.15	67748	140510
Sickle cell anemia	15520	413	2.66	4.24	8.17	7904	12640
Acute illnesses							
Appendicitis	64542	1212	1.88	3.23	3.63	8810	9629
Cellulitis	16780	725	4.32	3.27	3.98	5602	7805
Pneumonia	39841	2598	6.52	4.03	5.89	8456	15864
Injuries							
Burns	3921	404	10.31	7.04	11.56	24312	32933
Fractures	67441	3360	4.98	3.80	5.97	12852	18902
Internal injuries	11875	844	7.11	5.65	6.44	18208	21375

Discussion

Findings of this study suggest that psychiatric comorbidity is associated with increased length of stay and costs of hospitalization for physical illnesses and injuries in children and adolescents. Although specific medical conditions varied in the proportion of discharges for which secondary diagnoses of mental disorder were present, the pattern of increased burden was evident across all categories, including acute illnesses and injuries as well as chronic illnesses. These findings complement previous data indicating that emotional and behavioral problems in youth often complicate the medical management of physical conditions, and suggest that this phenomenon is reflected in increased burden of care in the hospital setting.

Several limitations of this study warrant comment. First, assignment and sequencing of diagnostic codes in hospital discharge data is driven primarily by concerns related to billing and reimbursement, rather than by demands related to statistical record keeping, research, or treatment activities; consequently, comorbid conditions are generally underascertained in discharge databases (Klabunde, Warren, & Legler, 2002). This underascertainment may be a particular problem in the case of mental and substance use disorders, which may be vulnerable to underreporting due to their stigmatized nature and/or the reluctance of treating physicians to diagnose them in the absence of consultation with a qualified mental health professional. The extent to which such estimates as derived in the present study might be affected is unknown. Second, the lack of indices of such characteristics as illness severity limit the ability to make meaningful interpretations regarding variations in length and costs of stay. Further analyses accounting for number and type of comorbid conditions may help to address this issue. Finally, examination of the data separately by type of secondary diagnosis (e.g., depression, anxiety disorder, disruptive behavior disorder, substance-related disorder) may reveal unique patterns in impact on length of stay and costs.

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Relationship between Chronic Medical Conditions and Mental Health Service Outcomes in Adolescents

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Introduction

Evidence suggests a high risk for emotional and behavioral problems in youth with comorbid medical disorders. Investigators have found relationships between adolescent asthma and panic disorder and behavioral problems (Goodwin, Pine, & Hoven, 2003; Kovacs, Stauder, & Szedmak, 2003; Nascimento et al., 2002; Ortega, Huertas, Canino, Ramirez, & Rubio-Stipec, 2002), allergic rhinitis and depression and anxiety disorder (Cuffel, Wamboldt, Borish, Kennedy, & Crystal-Peters, 1999), diabetes and depression (Kokkonen & Kokkonen, 1995), and epilepsy and depression (Dunn, Austin, & Huster, 1999). Furthermore, the negative consequences of mental health problems have been found to be more severe when a chronic illness is present (Patten, 1999; Weiland, Pless, & Roghmann, 1992).

Despite these findings, there have been no studies published to date on the rates and outcomes of comorbid disorders in mental health treatment-seeking youth. In addition to assessing the impact of disease-related factors (i.e., severity of symptoms, functional impairment, and overall disease impact), there is a need to understand the interaction between comorbid disorders and the adolescent's mental health as well as the effect of a dual diagnosis on the family. Moreover, there is sufficient empirical evidence to support specific interventions aimed at decreasing mental health symptoms or increasing adherence to medical treatment regimens in medically ill youth. These include biofeedback and relaxation for children with emotionally triggered asthma; imagery with suggestion and relaxation for children undergoing chemotherapy; and peer support and cognitive behavioral therapy for adolescents with diabetes (Bearman, & La Breca, 2002; Hains, Davies, Parton, & Silverman, 2001). Mental health providers should be trained to offer these interventions to maximize treatment outcomes in youth with comorbid disorders. In addition, mental health care is often provided independent of other specialty health services, particularly in community mental health clinics and inpatient psychiatric hospitals.

Continuity and coordination of care for comorbid disorders is a priority, and mental health providers need to be sensitive to the impact of such conditions on the psychological well being of adolescents and their families.

This study examines differences in baseline and follow-up symptoms, functioning and family impact of adolescents with no (zero), one, or two or more comorbid medical conditions seeking treatment in mental health settings. Specific hypotheses addressed are: (a) there is a high prevalence of comorbid medical and mental health disorders; (b) comorbid medical and mental health disorders are associated with greater symptom severity, functional impairment and family impact at baseline; and (c) comorbid medical and mental health disorders are associated with poorer outcomes six months after initiating treatment in a mental health setting.

Method

Participants. Participants were 256 adolescents and their parents recruited at intake from two outpatient ($n = 204$) and five inpatient ($n = 52$) treatment sites in Arkansas and Texas. The sample was drawn as part of a study to validate the Adolescent Treatment Outcomes Module (ATOM; Robbins et al., 2001). Adolescents were not eligible to participate if, in the intake clinician's opinion, they were psychotic or mentally retarded (IQ < 70) or if an adult who had regular contact with the adolescent during the previous six months was not available to serve as co-informant.

Instruments. The ATOM is a coordinated set of instruments with parallel self-administered questionnaires for parents and adolescents assessing: (a) demographics; (b) prognostic factors such as medical comorbidity, age of onset, and family history of mental illness and substance abuse; and (c) symptom severity and functional impairment during the previous six months. The ATOM six-month follow-up assessment administered to parents and adolescents asks corresponding items on symptom severity and functional impairment as described above.

Medical comorbidity was derived from parental response to a 22-item checklist of chronic medical conditions developed in consultation with school officials and healthcare professionals (see Table 1). For the purposes of this study, adolescents were grouped according to whether they had no chronic medical condition, one chronic medical condition or two or more chronic medical conditions.

In addition to the ATOM, parents and adolescents were administered the Child Behavior Checklist/ Youth Self-Report (CBCL; Achenbach, 1991a; YSR; Achenbach, 1991b), the Burden Assessment Scale (BAS; Horwitz & Reinhard, 1995; Reinhard, 1994; & Reinhard, Gubman, Horwitz, & Minsky, 1994) and the Child Health Questionnaire (CHQ; Landgraf, Abetz, & Ware, 1996).

Procedure. Parents and adolescents completed parallel versions of the ATOM, CBCL/YSR, and CHQ (parents only) within one week of intake and six months later. Upon completion of the protocol, parents and adolescents were compensated $20 each.

Results

The majority of participants were male (55.7%) and Caucasian (64.8%). Half of the families earned less than $20,000 per year, while 71% lived in urban areas. Ninety-two percent ($n = 237$) of adolescents and their caregivers participated in the six-month follow-up.

Rates of parent-endorsed medical conditions are provided in Table 1. As noted, asthma and chronic allergies were the most prevalent, with considerable overlap between these two illnesses. Age, race, gender, income and psychiatric diagnosis were not associated with having zero, one or two comorbid disorders.

The three groups of adolescents were compared across 15 clinical measures at baseline, using Bonferroni correction ($p < .05$) for multiple tests (see Table 2). Parents of adolescents with one chronic medical condition or two or more chronic medical conditions reported significantly higher scores on the

Table 1
Frequency and Comorbidity of Chronic Medical Conditions

	Total (N = 256)	*Only One Medical Condition (n = 79)*	*Two or More Medical Conditions (n = 52)*
Asthma	58 (22.7)	26 (32.9)	32 (61.5)
Chronic Allergies	70 (27.3)	26 (32.9)	44 (84.6)
Chronic Orthopedic	14 (5.5)	4 (5.1)	10 (19.2)
Chronic Respiratory*	6 (2.3)	0 (0.0)	6 (11.5)
Chronic Rheumatic Disease	1 (0.4)	1 (1.3)	0 (0.0)
Diabetes	4 (1.6)	2 (2.5)	2 (3.9)
Epilepsy	11 (4.3)	4 (5.1)	7 (13.5)
Heart Disease	15 (5.9)	4 (5.1)	11 (21.2)
Migraines	23 (9.0)	11 (13.9)	12 (23.1)
Other	5 (2.0)	1 (1.3)	4 (7.7)

Note. Data presented are frequencies and percentages of column category.
*Excludes asthma

CBCL internalizing and CBCL externalizing scales compared to adolescents with zero chronic medical conditions, $F(2, 254) = 8.42$, $p < .001$ and $F(2, 254) = 7.73$, $p < .001$. Those with one or two or more chronic medical conditions also had less favorable scores on the measure assessing family burden than those with zero conditions, $F(2, 253) = 6.18$, $p < .05$. Parents of adolescents with two or more chronic medical conditions reported significantly lower scores (indicating worse functioning) on the CHQ scales for bodily pain and discomfort compared to adolescents with zero medical conditions, $F(2, 255) = 4.77$, $p < .05$. Parent reports of general health perceptions differed significantly among all three pair-wise comparisons of adolescents with scores ranging from highest to lowest (less favorable perception) for those with zero to one to two or more chronic medical conditions, $F(2, 255) = 14.47$, $p < .01$. In addition, adolescents with two or more conditions also reported more missed school days in the past 30 days than individuals with one condition or zero conditions, $F(2, 238) = 5.52$, $p < .01$.

Adolescents with two or more medical conditions also reported poorer outcomes at the six-month follow-up, controlling for baseline severity (see Table 2). Parents of adolescents with one or two or more conditions reported higher scores on the CBCL internalizing scales, compared to parents of adolescents with zero conditions, $F(2, 234) = 6.09$, $p < .01$. Parents of adolescents with one or two or more conditions had worse scores on the CHQ scale for global health compared to adolescents with 0, $F(2, 231) = 13.48$, $p < .01$. Measures of physical functioning were significantly worse for adolescents with two or more conditions versus those with zero, $F(2, 235) = 10.29$, $p < .01$. Although there were no significant main effects across the three groups on the remaining 12 measures, there was an interaction where adolescents with two or more medical conditions with low scores on CHQ physical functioning were less likely to exhibit improvements over time than adolescents with similar scores who had one or zero medical conditions, $F(2, 235) = 9.29$, $p < .01$.

Discussion

Half of the adolescents seeking mental health treatment in this study had one or more chronic medical conditions as reported by parent or significant other. Almost half of these were asthma and/or chronic allergies, although migraine headaches, heart disease, epilepsy and diabetes were also present at rates greater than those of the general population (Akinbami, Schoendorf, & Parker, 2003; Fagot-Campagna, Saaddine, Flegal, & Beckles, 2001; Hartert & Peebles, 2000; Miller, Pellock, Boggs, DeLorenzo, Meyer, & Corey, 1999; Sillanpaa & Anttila, 1996).

The results also suggest that the effects of comorbid medical conditions may have an effect on adolescents' mental health symptoms, resulting in higher CBCL scores as the number of chronic conditions increases. Not surprisingly, parents of adolescents with one or two or more medical conditions also reported more problems in general health perceptions, perhaps contributing to the higher rates of school absence in this group. Parents of adolescents with two or more medical conditions also reported they were more likely to experience the impact of their illness, either objectively (e.g., missed work days

Table 2
Comparison of Health Measures by Number of Chronic Medical Conditions at Baseline and Follow-up

	Number of Chronic Medical Conditions				
	All Cases	*0*	*1*	*2 or more*	*F statistic*
Missed School Days (out of 30)	2.1 (2.7)	1.8 (2.3) $_a$	1.9 (2.2) $_a$	3.3 (3.8) $_b$	5.52**
		1.7 (0.3)	2.0 (0.4)	1.6 (0.5)	NS
ATOM Symptom Severity	14.4 (7.6)	13.7 (7.4)	14.8 (7.4)	15.7 (8.1)	NS
		10.4 (0.5)	12.0 (0.7)	12.5 (0.8)	NS
ATOM Functioning Performance	20.0 (5.8)	19.6 (6.0)	20.6 (5.6)	20.2 (5.5)	NS
		17.3 (0.4)	18.2 (0.5)	18.4 (0.6)	NS
Relationship	15.0 (3.6)	14.8 (3.6)	15.1 (3.7)	15.4 (3.4)	NS
		14.0 (0.3)	14.3 (0.3)	14.6 (0.4)	NS
Consequences	1.8 (1.7)	1.6 (1.6)	2.0 (1.9)	1.8 (1.6)	NS
		1.2 (0.1)	1.5 (0.2)	1.5 (0.2)	NS
Total Family Burden	23.1 (11.8)	20.6 (10.8)$_a$	24.6 (12.7) $_b$	26.9 (11.7) $_b$	6.18*
		14.8 (0.9)	16.4 (1.1)	18.9 (1.5)	NS
CBCL Parent Internalizing	62.5 (11.6)	59.6 (11.5)$_a$	64.5 (11.4) $_b$	66.4 (10.1) $_b$	8.42***
		55.0 (0.8)$_a$	59.0 (1.0) $_b$	59.6 (1.4) $_b$	6.09**
CBCL Parent Externalizing	63.9 (12.2)	60.9 (12.7)$_a$	67.0 (12.1) $_b$	66.6 (9.0) $_b$	7.73***
		60.0 (0.7)	60.1 (0.9)	61.8 (1.2)	NS
YSR Youth Internalizing	55.8 (11.2)	55.2 (11.6)	56.0 (11.8)	57.2 (9.2)	NS
		48.9 (0.9)	51.8 (1.2)	50.8 (1.5)	NS
YSR Youth Externalizing	57.9 (11.4)	56.9 (11.5)	59.2 (11.5)	58.4 (11.0)	NS
		54.3 (0.8)	53.9 (1.0)	54.2 (1.3)	NS
CHQ Global Health	72.3 (24.8)	76.4 (24.2)	70.6 (22.4)	65.1 (28.0)	NS
		81.2 (1.6)$_a$	71.6 (2.0)$_b$	67.0 (2.6) $_b$	13.48**
CHQ Physical Functioning	88.4 (24.7)	90.8 (22.5)	86.9 (26.7)	85.0 (26.4)	NS
		94.2 (1.6)$_a$	91.2 (1.9)$_{a,b}$	87.7 (2.5) $_b$	10.29**
CHQ Social Limitations	91.3 (22.7)	92.5 (20.8)	91.1 (23.8)	89.0 (25.4)	NS
		96.7 (1.4)	94.9 (1.8)	93.0 (2.3)	NS
CHQ Bodily Pain & Discomfort	72.2 (27.5)	76.8 (25.9)$_a$	71.1 (26.9)$_{a,b}$	63.1 (30.0) $_b$	4.77*
		77.8 (2.3)	71.4 (2.8)	69.7 (3.6)	NS
CHQ General Health Perceptions	67.8 (21.7)	74.4 (20.4)$_a$	64.5 (19.5)$_b$	57.0 (22.5)$_c$	14.47**
		73.8 (1.5)	66.6 (1.9)	63.3 (2.6)	NS

Note. Data presented are *M (SD)* for baseline and Adjusted *M (SE)* for outcomes. Baseline scores are in the upper row ($N = 256$) and outcome scores are in the lower row ($N = 237$); "all cases" are not reported for outcome scores. T scores are presented for CBCL and YSR measures.
Row means not sharing subscripts differ at $p < .05$; NS = Not Significant. *$p < .05$. **$p < .01$. ***$p < .001$, with Bonferroni correction.

or decreased personal activities) or subjectively (e.g., increased worrying and guilt). Interestingly, there were no significant differences across the three groups on adolescent responses to measures of emotional and behavioral disorders.

Having two or more medical conditions is also associated with more physical, but not mental health, problems at follow-up. For the most part, adolescents across the three groups had similar outcomes on emotional and behavioral symptom severity and overall functioning, with one exception. Parents of adolescents with one or two or more conditions reported more problems on the CBCL internalizing scale, suggesting that parents perceive these youth as continuing to suffer from symptoms indicative of depression and anxiety, even after therapeutic interventions.

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Symposium Discussion

E. Wayne Holden

The impact of comorbid mental and physical health problems in youth has critical implications for families, as well as providers in general medicine and specialty mental health care. The authors used multiple secondary data sources to creatively examine this issue among adolescents in the community, general hospitals, and inpatient and outpatient psychiatric settings. Importantly, comorbid disorders were associated with higher service utilization and costs in hospitals and poorer mental and/or physical health. The findings raise important questions about the field's ability to recognize and treat the psychosocial aspects of comorbid disorders, the acceptability of integrated care in mental health clinics, and the extent to which systems of care can be reconfigured to accommodate the needs of these high-risk youth and their families.

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Screening a Mother's Depression to Reduce Risks to Infants

Rhonda Waller
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Depression during pregnancy and through one year postpartum is a major public health problem affecting up to 30% of women living in poverty (Hobfoll, Ritter, Lavin, Hulsizer & Cameron, 1995). Because depression is associated with an increase in certain risk behaviors and a decrease in health-seeking behaviors, prenatal depression could have health implications for both mother and fetus. Depression affects how a woman is able to relate to others, including her new baby. Several studies have demonstrated that maternal depression has long-term effects on the behaviors of infants and young children (e.g., Clark & Fenichel, 2001) and can be related to a child's temperament (Beck, 1996).

Health problems for pregnant women that lead to adverse birth outcomes remain despite increasing effectiveness of prenatal medical care (Evans, Heron, Francomb, Oke & Golding, 2001). This leads to a consideration of the role of psychological factors in affecting birth outcomes. Over 20 studies that investigated correlations between psychological variables and birth outcomes were systematically compared in two separate meta-analyses (O'Hara & Swain, 1996; Beck, 1996). Across the studies, there was a strong and consistent relationship between depression and adverse birth outcomes. Prenatal depression was related to decreased utilization of prenatal care, a diminished social network, and poor nutritional intake.

The purpose of this study was to describe the extent of depression among African-American women living in an urban environment and the associations with health behaviors and demographics among pregnant women.

Methodology

Project. The Healthy Babies Project (HBP), incorporated in 1990, is a private not-for-profit community-based support system for pregnant and parenting women and their families in Washington, DC. Since its inception, HBP's mission has been to help families bring healthy babies into the world and give them the best possible chance for success. The Project aims to reduce the rates of infant death, illness, low birth weight, and unintended pregnancies and to improve the health, education and parenting outcomes for at-risk mothers, fathers and infants.

Population. Populations served by the Healthy Baby Project (HBP) are predominantly African-American women and families, and a significant percentage of the population are high-risk, single, or low-income individuals. The area served by HBP is beset by the adverse effects associated with marginal homelessness, crime, drug abuse, public housing and clinical environmental depression. This population desperately needs intensive and extensive mental health and social services. Of the new mothers enrolled in HBP in 2001, 19.6% had a history of substance abuser, and approximately 22.5% are from families who have symptoms of depression or are victims of domestic violence, child abuse and/or neglect, or suffer from other psycho-social issues.

Screening materials. The Center for Epidemiological Studies - Depression scale (CES-D; Radloff, 1977) was used to screen mothers for depression. The scale contains 20 items and a score of 16 or higher indicates a high level of depressive symptoms. The screening takes between 5 and 10 minutes to complete. The statements were read to women who had difficulty easily reading the instrument.

Subjects. Fifty women were screened for depression. Twenty-three of these women were in their last months of pregnancy and 27 were screened within six months of giving birth. The mean age of the participants was 20.92 years, with those pre-natal slightly younger ($M = 20.65$) than those who already had their child ($M = 21.15$).

Procedure. All women in the study received the CES-D screening and were closely monitored for depression either during their pregnancy, or within six months following the birth of their child. If it was found that a woman was at-risk for depression she was immediately referred to one of two in-house family counselors at HBP for assessment, counseling, referrals, and follow-up. Parents were also referred to Effective Black Parenting classes, a Prenatal Support group, and one of three Parents Anonymous groups for education and support. All families were case managed and home visitation took place at a minimum of once per month for continuous support in an effort to prevent child abuse and neglect and to empower families.

Results

Initial findings. When using the CES-D manual-suggested standardized cutoff score to indicate symptoms of depression, exactly 50% of the women were found to be clinically depressed. This is consistent with the results from other research with similar populations (e.g., Bolton, Hughes, Turton & Sedgwick., 1998; Orr, James & Blackmore, 2002). Based on these screenings, depressed and non-depressed groups of 25 mothers were formed.

Scores for the 50 initial depression screenings were surveyed to see if status (pregnant or postpartum), or age, were indicators of depression in the selected low-income women. Only 41% (12 of 29) of subjects 21 and older received scores that put them in the depressed group, while 62% (13 of 21) of the women aged below 21 were in the depressed group. However, the mean depression scores between these two age groups was not significantly different, $t(48)=0.12$, $p > .05$. While there were fewer older subjects in the depressed group, these older subjects typically had higher depression scores. The age difference was most evident after childbirth where the older mothers had a mean CES-D score of 16.11 and the younger mothers a mean of 14.87.

Several additional analyses currently being conducted to compare the depressed group with the non-depressed groups with regard to contraception, pregnancy wantedness, compliance with prenatal care visits, intent to breastfeed, and financial difficulties. Of particular interest is an analysis for a possible link between domestic violence/abuse and depression.

Discussion

Findings are interpreted within the construct that a woman's underlying psychological state (depression) is related to her ability to care for her own health and that of the fetus (Beck, 1996). Depression entails lack of motivation, indifference, and poor personal health. In this way, depression affects self-care agency, namely one's well-being. Consequences of depression affect the health of the fetus. The quality of self-care during pregnancy plays a role in birth outcomes

The initial results of this study suggest that health care providers need to be alerted to the important role of depression and may want to include depression screening in their prenatal care. There seems to be some important links among depression, poor self-care, and adverse birth outcomes. Several factors suggest that participants can be made to understand depression as a barrier to self-care in pregnancy.

However, in line with the depression screening and subsequent counseling there has been 56% reduction in the infant mortality rate in one area served by the HBP. There is also decreased use among program participants of cigarettes, drugs, and alcohol; and the number of men, women and families who participate in the Healthy Babies Project continues to increase.

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Assessment of Insecure Attachments in School-Age Children Utilizing Biopsychosocial Attachment Types

A. Myrth Ogilvie

Introduction

Children with insecure attachments (IA) have an ongoing risk of mental health challenges and an exacerbated resistance to traditional treatments (Dozier, Stovall, & Albus, 1999). Inability to trust and inadequate relationship skills present substantial challenges for supervising adults in families, child welfare, juvenile justice, public schools, and other community settings (Solomon & George, 1999). Children who suffer IA experience a disruption in the normal development of the most fundamental form of affectional bonding, attachment, which persists as a working model providing organization for attachment behaviors (Cassidy, 1999). A new framework developed by the author, Biopsychosocial Attachment Types (BAT), for conceptualizing childhood IA concerns, was explored as a foundation for assessment. The assessment utilized items linked with the Behavioral and Emotional Rating Scale (BERS; Epstein & Sharma, 1998). This summary describes the development of the Biopsychosocial Attachment Scale as measure of insecure attachment.

The Biopsychosocial Attachment Scale

In 1998 a strength-based assessment became available, the Behavioral and Emotional Rating Scale. (BERS; Epstein & Sharma, 1998). The BERS offered an empirical means of examining strengths while providing potential direction for bridging to intervention; BERS items revealed strong potential for measurement of concepts necessary to an effective scale for the BAT framework.

The development of the BAT scale is based upon an empirically based theoretical foundation. The theoretical foundation was thoroughly investigated and described before the development of items for the pool and selection of the BERS as the supportive measurement mechanism. The complexity of the concepts of attachment and bonding are noted. While each category of the BAT framework is distinct, they are believed to be components of a single construct known as affectional bonding.

Method

Sample

The Foster Family Survey questionnaire completed by 285 foster parent primary care providers of children 6 to 18 years in foster care for over three months in all postal segments of British Columbia (BC), Canada, provided the data. The distribution of males and females was consistent with the distribution among all children in BC within the age range of 6 to 20 years. Children ages 6-10 years were 35.8%, 11-14 years were 36.1%, and 15-20 years were 28.1% of the sample. More males than females scored in a range of concern for the security of bonding consistent with current estimates of incidence.

Scale Development and Item Selection

The eight steps and the analysis plan presented in DeVellis (1991) represented a method for BAT scale development and guided progress: (1) determine clearly what to measure, (2) generate an item pool, (3) set up the format of measurement, (4) conduct expert review of the item pool, (5) consider validation items, (6) administer items, (7) evaluate items, and (8) determine scale length. The BAT framework provided clarity on what was to be measured. The item pool was drawn from items existing in the BERS and additional items patterned after BERS items in the hope that items from the BERS and the additional item pool would match subcategories of the BAT. A consistent format allowed for ease of answering by the respondent. By adding a small number of items, BAT assessment screened for IA.

Factor analysis used on the BERS items plus the additional pool of items assessed fit of the items with the underlying concept(s), and assisted in explaining variation among the items. This procedure allowed items to be condensed into a smaller set of variables, and helped to clarify substantive concepts or meaning of the factors (DeVellis, 1991). Item analysis procedures utilized identified problematic items through calculation of item-scale correlations and descriptions of inclusion/exclusion of an item on the alpha coefficient (Cronbach, 1951; DeVellis, 1991). This permitted refinement of the scale through decisions made to drop or amend the items resulting in a scale to measure the BAT framework and an additional means of observing IA from a child's perspective. Improved methods of observation for relationships with non-parental figures and other children existed as an established need within the scope of attachment and bonding research (Marvin & Britner, 1999).

Adding items to an existing measure (i.e., the BERS) potentially provided an opportunity to expand the assessment of IA from the BAT framework while extending the versatility of the BERS. Additional items developed by the author in the categories where little or no overlap existed with BERS items allowed expansion to IA measurement. The structure of this pool was intended to remain faithful to the structure preexisting in the BERS to allow for seamless extension. A review of question construction principles indicated that a number of potential items were needed for each subcategory (Converse & Presser, 1986; DeVellis, 1991). Ultimately 52 BERS items with an additional 23 items totaling 75 potential items were compiled for BAT scale development.

From the list of potential items, 18 were selected for the BAT Scale: two items from those believed to examine interaction with objects, two items believed to examine interaction with plants, three items believed to examine interaction with animals, four items believed to examine interaction with younger children, four items believed to examine interaction with peers, and three items believed to examine interaction with adults were included (see Table 1).

Table 1
BAT Experimental Scale Item Source and Item Category

This child…	*BERS* or Added Pool*	*BERS Subscale*	*BAT Category*
17. Considers consequences of own behavior	BERS	IS	Adults
28. Accepts responsibility for own actions	BERS	IS	Adults
29. Interacts positively with siblings	BERS	FI	Peers
32. Is popular with peers	BERS	IaS	Peers
33. Listens to others	BERS	IS	Peers
35. Admits mistakes	BERS	IS	Adults
43. Respects the rights of others	BERS	IS	Adults
53. Interacts positively with animals	Pool		Animals
54. Safely interacts with plants	Pool		Plants
55. Demonstrates age-appropriate respect for plants	Pool		Plants
57. Is kind toward pets	Pool		Animals
60. Maintains positive peer relationships	Pool		Peers
62. Plays safely when younger children are present	Pool		YC
63. Is protective of younger children	Pool		YC
64. Maintains positive relationships with younger children	Pool		YC
69. Trusts a significant animal in his or her life	Pool		Animals
74. Expresses remorse for behavior that is destructive to property	Pool		Objects
75. Helps to maintain family property	Pool		Objects

Note: *BERS (*Epstein & Sharma, 1998) and additional pool of items developed by the author.
Interpersonal Strengths = IS; Family Involvement = FI; Intrapersonal Strengths = IaS;
Younger Children = YC

Scale Analysis

Within the BAT category groups the bivariate correlations were all significant at the 0.01 level, and all within group bivariate correlations were above .4. The bivariate correlations of all 18 items were significant at the 0.01 level.

Consideration was given to the reliability and validity of the BAT scale items through assessment of psychometric properties of the measures of the BAT categories including an assessment of the convergent validity and an examination of the internal consistency of the BAT categories. Convergent validity of BAT categories was first determined by examining results for significant correlations between the items developed and apriori-selected items from the BERS. Internal consistency of the BAT total item pool was assessed through Cronbach's alpha coefficients. Satisfactory progress on the scale allowed reexamination and clarification to optimize the length of the scale, and factor analysis was conducted. Item-scale correlations were examined for each theoretically anticipated subcategory and finally for the entire set of items selected for inclusion in the measure. Attention was given to keeping high item variance and means as close as possible to the center score of 1.5.

The Alpha Coefficient of all 18 items based upon $n = 285$ was .9166. The Alpha scores of the theoretical subgroups ranged from .78 to .94: (a) Objects (2 items) .78; (b) Plants (2 items) .94; (c) Animals (3 items) .84; (d) Younger Children (3 items) .89; (e) Peers (4 items) .79; and (f) Adults (6 items) .85. The total BAT scale coefficient of .91 is an indication of meeting a desirable standard for such scales. The alpha coefficient levels for each of the theoretical subgroups approximated the .80 standard overall and warranted progressing to factor analysis.

The assumption cannot always be made that because an assessment instrument scores as reliable for the total sample that it will do so for subgroups of the sample. Internal consistency may also be checked for identified subgroups. Concern existed about sample subgroups and sufficient numbers existed in this sample to calculate coefficient alphas for males, females, and three age groupings: (a) males (n 152) .91; (b) females ($n = 133$) .91; (c) 6-10 years ($n = 102$) .92; (d) 11-14 years ($n = 103$) .90; and (e) 15 years to 20 ($n = 80$) .91. These results would indicate that gender and age did not adversely affect the reliability of the scale. It would be preferable in future samples to have sufficient numbers in a variety of cultural groups to determine if these findings hold true. Based upon these results there is reason to believe that the reliability of the BAT scale supports reasonable confidence at this analysis.

Validity concerns the degree to which an instrument measures the attributes that the author contends that it measures. The content validity of the items was discussed based upon theoretical support, expert review, and statistical analysis of items. An examination of these data by factor analysis was also utilized to determine if the theoretical dimensions of the BAT were actually being measured as part of the overall construct of attachment.

A principal components factor analysis utilizing a varimax rotation with Kaiser Normalization was run with Eigenvalues set at .6. Six factors were extracted which loaded at .40 or higher as predicted based upon the theoretical foundation for all but two of the 18 items. One of the items (item 29), *Interacts positively with siblings*, originally designated for younger children (.232) loaded with the factor for peers (.44) and for adults (.45), which was reasonable since wording of the item utilized "siblings" and siblings may be considered within the same generation and is evaluated by adults. The second item (item 33), *Listens to others*, originally designated for peers (.48) loaded with the factor for adults (.55). Item 33 also has more generic language and refers to "others."

Conclusion

Based upon these results, the BAT experimental version containing 18 items was reasonably supported. This scale was established as ready for potential use in additional explorations and samples designed to provide necessary information for establishing norms. A stand-alone measure, developed from this research, is now under test. The description of the stand-alone measure, the Incremental Bonding Questionnaire (IBQ), and a description of this independent measure are available.

The BAT framework has suggested that for some children humans cease to be the source of the secure base and that, along with a hierarchy of human attachments, other hierarchical relationships exist that are more primitive than human relationships (Ogilvie, 2000; Kellert & Wilson, 1993). For a child, complex interactions of personality, experiences, and historical influences combine to determine how far from a secure inter-generational human attachment the child must seek to achieve comfort and a reduction of anxiety. The most distressed children rely only upon trusted objects, while other children are able to find comfort by retreating to interactions with plants and animals; however, the ultimate goal would be to facilitate achieving successful bonds with younger children, peers, and finally adults. Only within the context of these secure human relationships can optimal development, comfort, and a secure base be achieved.

The examination of IA assessment based upon the BAT framework advances development of an intervention to increase the bonding security of children ages 6 to 18. At present IA assessment, treatment planning, and evaluation of progress require parents to complete scales and interviews primarily focused on the problems and deficiencies of the child. More efficient up-front approaches capable of reducing testing burdens on families while encouraging additional, earlier, and more available preliminary assessment and intervention options emphasizing the child's strengths are congruent with a staunch belief in family support principles (Friesen & Poertner, 1995).

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Symposium Overview

Community-Based Response to Trauma: A Three-Part Study of a Successful Program

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Introduction

After the September 11 attacks of 2001, threat, stress, terrorism, and trauma became everyday concerns. However, before the startling psychological impact of those events, communities across the United States had been struggling already with the trauma of school, community and family violence; child abuse; child and adolescent death; and man-made and natural disasters. Trauma psychology has developed as a specialized field to study and treat a variety of human responses to traumatic events. Based on research and practice, interventions with people who have experienced traumatic events are generally divided into two groups: (a) short-term interventions for those who have essentially normal responses to abnormal situations (i.e., those whose functioning is disrupted, but who can re-group with short-term support); and (b) long-term interventions/treatment for those who have a more prolonged disruption of functioning and who need therapy to overcome the impact of trauma. Although the first group is by far larger, considerably more professional attention has been paid to the latter group. According to the trauma literature, intervention with the first group can produce benefits most quickly to more people, and can avoid the need for more intensive, longer-term treatment for many. Conventional wisdom suggests calling on mental health professionals to help when a traumatic event occurs, to help minimize the impact, and to comfort and stabilize those who are affected. The assumption is that training and experience as a mental health professional will equip one to respond in times of trauma. As the skills to respond helpfully have become clearer, it has become apparent that special approaches, special training and special networks are necessary to provide support to communities facing serious traumatic events.

The Community Services Program (CSP) Study

Recognizing the importance of a specialized trauma response service, in 1996 the Arbour Health Systems–Trauma Center developed a Community Services Program (CSP) for children and youth, with funding from the Massachusetts Department of Mental Health. This program has become a central part of services to children and youth in the Boston area. The Office of the Mayor, the school system, other community agencies, community leaders, and families call the CSP to respond to traumatic events throughout Boston and its surrounding areas. In addition to the direct services program, the CSP has developed a training program to prepare those who care for children—clinicians, teachers, community workers, and families—to work side-by-side with CSP representatives to support resolution and recovery from exposure to trauma. The training program not only prepares people to handle traumatic events, but also serves to broaden the network of trauma helpers available to assist in the schools and neighborhoods.

The Massachusetts Department of Mental Health (DMH) had been impressed by the widespread respect for this program, its public health model of intervention, and its perceived effectiveness. In the spring of 2003, DMH initiated a study to describe the program model, to determine its impact, and to clarify requirements for its replication. In partnership with Consumer Quality Initiatives in Boston, the study was conducted by the Research and Training Center for Children's Mental Health of the Louis de la Parte Florida Mental Health Institute, University of South Florida.

Method

This innovative program did not lend itself to traditional pre-post evaluation, as the essence of the program would be missed. Rather, the study design was essentially a case study, with both qualitative and quantitative approaches utilized to capture the core elements of the program. This two-phased study was designed to assess program effectiveness (Phase I) and identify requirements for replication (Phase 2). In Phase 1, June-October 2003, program effectiveness was studied through a three-pronged approach in which (a) stakeholder interviews, (b) case records, and (c) CSP trainee interviews were reviewed and analyzed. The study period covered the previous four years, in which there were interventions for over 5,700 adolescents and 6,400 adults, or over 12,000 individuals.

Stakeholder Interviews. Structured interviews were conducted with 29 community leaders/stakeholders to gather their views of the program, its impact on individuals and communities, and its quality. Those interviewed included a US Congressman; a State Legislator; the Mayor of Boston; state mental health leadership, leaders of several minority communities; religious leaders; public and parochial school principals, counselors and teachers; clinicians; community agency heads and staff; parents and other family members; probation officers; and police.

Case Record Reviews. Sixty-three randomly selected cases (25% of 250 cases) of interventions with individuals and community groups experiencing traumatic events were reviewed to assess: (a) the breadth and depth of the interventions, (b) the manpower and time required, and (c) the effectiveness of the interventions.

In-depth Trainee Interviews. A total of 1,616 licensed professionals, school personnel, and community workers had received training within the last four years on how to provide interventions when traumatic events occur. Of this group, 5% ($n = 55$) were randomly selected for in-depth, structured interviews about their training experiences. The interviews provided quantitative data about the effectiveness of the training, and ascertained whether the trainees learned what was intended, whether they retained these skills, whether they used this information to assist with traumatic events in their communities and/or their personal lives, and whether they found the training to be useful.

Results

The results of the three-part study indicate a remarkably positive picture with the following findings.

Stakeholder Interviews. The stakeholder interviews were extremely consistent and yielded qualitative data reflecting a high regard for the program. The program was described repeatedly as having a substantial impact on the community. The program was credited with: (a) helping the community to heal itself; (b) helping the community to come together and handle the crisis; and (c) in the case of a suicide cluster, saving hundreds of childrens' lives. The interventions were described as "calming, supportive, always behind-the-scenes but thoroughly being there for us, not intruding but helping us to come together." Across the board, the elected officials and their staff described the program as the best program for children in the city—"one we can always count on, 24 hours a day, seven days a week, to help with the worst situations." School leaders and others described the program as important in helping teachers and other child caretakers to view children differently and to gain understanding of how trauma might influence the childrens' behaviors.

Case Record Reviews. A review of the 63 case records on interventions showed the comprehensiveness of the program. For these cases, the program had provided a total of 163 interventions with up to a dozen interventions for a single incident. There were 11 different kinds of trauma incidents ranging from natural deaths and the 9/11 attacks, to accidents, homicides and suicides (with the latter two categories being the most frequent). The program served 19 different neighborhoods in Boston, with five of the poorest neighborhoods having over five incidents. There were five types of interventions used most often, and several were frequently used for the same incident. Consultations, debriefings, and orientations were used in 25% of the cases; supported services were used in 33% of the cases, and defusing services in about 15% of the cases. The CSP also served a wide variety of ethnic groups, with the largest numbers of victims being African American, Latino and Caucasian. A third of the incidents involved more than one ethnic/racial group.

In-depth Trainee Interviews. Overall, the ratings for training evaluations over a four-year period (*n* = 1,616) were extraordinarily high and averaged 4.7 on a 5-point scale. Interviews with those who had received CSP training yielded both quantitative and qualitative data.

Out of a total 1,616 trainees, most (90%) reported that they learned and retained information and skills for handling traumatic events, and 80% said that they were confident about leading discussions in all eight areas of trauma response with groups after a traumatic event. Eighty-eight percent of trainees reported that they had responded to traumatic incidents in the workplace since being trained, while 89% had responded to traumatic incidents in various settings since being trained.

Most trainees (90%) reported that they were somewhat to very confident about handling eight of the nine tasks essential to handling trauma, including (a) being part of the trauma response team, (b) identifying those who needed trauma support, (c) being able to lead a trauma incident orientation, (d) being able to provide grief support, and (e) understanding their own self-care needs when helping those exposed to trauma.

Conclusions

Phase 1 of the evaluation of the program is an important first step toward determining the types of community-based responses that show promise in efforts to ameliorate the impact of traumatic events in communities nationwide and internationally. As a model for services that are needed on an irregular basis, this model appear to work well and at a reasonable cost. Phase 2 of the study, to be undertaken between November 2003-June 2004, will determine the critical elements of both the intervention and training programs that are required to replicate this model. Phase 2 will also include a study of service programs in Massachusetts, which will focus on how these elements can reasonably be incorporated into their programs so that the capacity to intervene and to train others to intervene will be more widespread.

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