MILEmarkers
Bibliographies of practice descriptions and selected evidence-based practices
Tracking, Referral and Assessment Center for Excellence

Sources of Information About Risk Factors and Risk Assessment Practices

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This *Milemarkers* bibliography includes selected references to sources of information for identifying the environmental and biological risk factors that are most associated with child developmental delays and poor functioning. References to research and practice pertaining to risk assessment procedures are also included. The information should be useful to practitioners who have responsibility for early identification and evaluation of infants, toddlers, and preschoolers who are or may be eligible for early intervention or preschool special education

The early identification of infants, toddlers, and preschoolers who are at risk for or are experiencing delays in development, and who may be eligible for early intervention or preschool special education, is one requirement of the Individuals with Disabilities Education Act (1997). Risk assessment procedures constitute one evaluation method that can be used to identify children who have a high probability of demonstrating development delays in the absence of an identified condition or disability. Risk assessment procedures are especially useful in states that have at-risk definitions for determining eligibility for early intervention (Shackelford, 2004).

This *Milemarkers* includes selected references to research on both the environmental and biological risk factors that are associated with delays in development and risk assessment practices for identifying the presence of environmental and biological risk factors. The information should be useful to practitioners who are responsible for the evaluation and assessment of infants, toddlers, or preschoolers. Risk assessment practices are one type of early identification activity (Dunst & Trivette, 2004) that constitutes the focus of research and practice at the Tracking, Referral and Assessment Center for Excellence (www.tracecenter.info).

Risk Factors

Environmental Risk Factors

Environmental risk factors are those conditions "outside" a child that places him or her in jeopardy for poor developmental outcomes. These include, but are not limited to, living in poverty, low parental education, poor parental mental health, single parenthood, unstable living conditions, repeated exposure to violence, and teenage pregnancy (see Dunst, 1993). They also include a host of environmental toxins that can impinge upon and compromise a child's development (U.S. Environmental Protection Agency, 2000).

Research has consistently demonstrated that the presence of multiple or cumulative environmental risk factors are associated with the increased likelihood of progressively more negative effects on child behavior and development. The seminal work by Sameroff and his colleagues (see Sameroff, 1998) have shown both the short- and long-term consequences of the continued presence of cumulative environmental risk factors.

Barocas, R., Seifer, R., & Sameroff, A. J. (1985). Defining environmental risk: Multiple dimensions of psychological vulnerability. *American Journal of Community Psychology, 13*, 433-447.

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Schroeder, S. R. (2000). Mental retardation and developmental disabilities influenced by environmental neurotoxic insults. *Environmental Health Perspectives Supplements, 108*(S3), 395-399.

Walker, E. F., & Downey, G. (1990). The effects of familial risk factors on social-cognitive abilities in children. *Child Psychiatry and Human Development, 20*, 253-267.

Whitman, T. L., Borkowski, J. G., Schellenback, C. J., & Nath, P. S. (1987). Predicting and understanding developmental delay of children of adolescent mothers: A multidimensional approach. *American Journal of Mental Deficiency, 92*, 40-56.

Biological Risk Factors

Biological risk factors include those conditions, experienced prenatally, perinatally, or postnatally, that impinge upon and compromise the constitutional functioning of very young children. These include, but are not limited to, low birth weight, prematurity, and intraventricular hemorrhaging at birth. They also include maternal smoking, alcohol, and drug use during pregnancy. Research indicates that multiple biological risk factors and the severity of the factors contribute to poor outcomes (Vohr et al., 2000)

Delaney-Black, V., Covington, C., Templin, T., Ager, J., Nordstrom-Klee, B., Martier, S., et al. (2000). Teacher-assessed behavior of children prenatally exposed to cocaine. *Pediatrics, 106*, 782-791.

Farel, A. M., Hooper, S. R., Teplin, S. W., Henry, M. H., & Kraybill, E. N. (1998). Very-low-birthweight infants at seven years: An assessment of the health and neurodevelopmental risk conveyed by chronic lung disease. *Journal of Learning Disabilities, 31*, 118-126.

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Double Jeopardy Risk Factors

The simultaneous presence of multiple environmental and biological risk factors places a developing child at double jeopardy. Research has consistently found that children exposed to both types of risk factors are at highest risk for a variety of poor outcomes (Boardman, Powers, Padilla, & Hummer, 2002). Advances in the understanding of how risk factors "work together" to produce developmental delays and other disorders demonstrate the complexity of how these factors can undermine normal functioning (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001).

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syndrome: An enviromic analysis [Electronic version]. *Neurotoxicology and Teratology, 25*, 707-717.

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van der Valk, J. C., van den Oord, E. J. C. G., Verhulst, F. C., & Boomsma, D. I. (2003). Genetic and environmental contributions to stability and change in children's internalizing and externalizing problems. *Journal of the American Academy of Child and Adolescent Psychiatry, 42*, 1212-1220.

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Weisglas-Kuerpas, N., Baerts, W., Smrkovsky, M., & Sauer, P. J. J. (1993). Effects of biological and social factors on the cognitive development of very low birth weight children. *Pediatrics, 92*, 658-665.

Risk Assessment Practices

The use of environmental and biological risk factors for determining the presence of conditions that will likely result in developmental delays or poor functioning requires assessment methods that accurately determine the degree to which risk conditions are present or manifest. Risk assessment constitutes a process of determining the extent to which an individual "exposed" to risk factors will be harmed and to what degree (U.S. Environmental Protection Agency, 2000).

Ayoub, C., & Jacewitz, M. M. (1982). Families at risk of poor parenting: A model for service delivery, assessment, and intervention. *Child Abuse and Neglect, 6*, 351-358.

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Farran, D. C., & Cooper, D. H. (1986). Psychosocial risk: Which early experiences are important for whom? In D. C. Farran & J. D. McKinney (Eds.), *Risk in intellectual and psychosocial development* (pp. 187-225). Orlando, Fl: Academic Press.

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Kopp, C. B., & Kaler, S. R. (1989). Risk in infancy: Origins and implications. *American Psychologist, 44*, 224-230.

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Woods, J. J., & Wetherby, A. M. (2003). Early identification of and intervention for infants and toddlers who are at risk for autism spectrum disorder. *Language, Speech, and Hearing Services in Schools, 34*, 180-193.

Summary

This *Milemarkers* bibliography includes selected references to sources of information on risk factors associated with developmental delays and poor functioning during the preschool years. The information should prove useful for developing risk assessment methods that can be used to identify infants, toddlers, and preschoolers who have a high probability of being eligible for early intervention or preschool special education. The source material should be especially helpful in states that have at-risk definitions for determining eligibility for early intervention.

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