

Causal Relationships Between Poverty and Disability

Daniel C. Lustig
University of Memphis
David R. Strauser
University of Illinois

Although research suggests why disability may cause poverty, it is not well understood why poverty may cause disability. This article presents the Poverty Disability Model, which includes four groups of factors that increase the risk that poverty will cause disability and chronic health problems. Rehabilitation interventions and counselor implications derived from the model are presented in addition to research.

The relationship between poverty and disability has been well documented (U.S. Census Bureau, 2004; Wittenburg & Favreault, 2003). The 1991 Survey of Income and Program Participation (SIPP) found that 12% of individuals with no disability were below the poverty level, compared with 14% with nonsevere disabilities and 24% with severe disabilities (U.S. Census Bureau, 2004). A 1995 survey found that although 4% of individuals with family incomes exceeding \$50,000 reported fair or poor health, 21% of families with incomes below \$15,000 reported fair or poor health (Mullahy & Wolfe, 2001). Of the approximately 29 million low-income families (< 200% of federal poverty level) identified in 1999, 25% reported fair or poor health and 15% reported poor mental health (Wittenburg & Favreault, 2003). The 2000 U.S. Census survey found that 60% of adults with disabilities were employed, compared with 80% of individuals without a disability (Waldrop & Stern, 2003). In a 2003 survey of American households, 23% of adults with disabilities, ages 16 to 64, were below poverty level, whereas 9% of nonadults with disabilities were poor (U.S. Census Bureau, 2003).

Research provides support for the relationship between poverty and a wide range of illnesses. Children in

families below the poverty level are less likely to have seen a physician in the past year, less likely to have been vaccinated, more likely to smoke, and more likely to be overweight (Pamuk, Makuc, Heck, Reuben, & Lochner, 1998). Studies (e.g., Anderson, Sorlie, Backlund, Johnson, & Kaplan, 1997; Goodman, Slap, & Huang, 2003; Gorey & Vena, 1995; Roux et al., 2001; Smith, Hatcher, & Wertheimer, 2002) have shown a relationship between poverty and higher incidence of cancer, children's asthma, mortality, coronary heart disease, adolescent depression and obesity, and pediatric trauma hospitalizations. Fiscella (1999) found that lower family income was associated with poorer health status, greater psychological distress, higher rates of obesity, uncontrolled blood pressure, poorer mental and physical health status, and more medical diagnoses. Poverty also affects the level of functioning for individuals with chronic diseases (Kington & Smith, 1997). Finally, poverty is associated with mental illness and physical hardships, such as inadequate food, health care, and housing (Iceland, 2003; Polak & Warner, 1996; U.S. Department of Health and Human Services, 1999).

For these reasons, poverty is an important personal and public policy issue for individuals with disabilities. In 2000, the Healthy People 2010 report formulated two na-

tional goals: (a) increasing the quality and years of healthy life for all Americans and (b) eliminating health disparities between Americans (U.S. Department of Health and Human Services, 2000). Although it is understood that disability causes poverty, less is understood about how poverty causes disability (Healthlink Worldwide, 2003; Yao, 2001). This is important for rehabilitation counselors to understand because consumers frequently enter the vocational rehabilitation system poor and unemployed and exit the system successfully closed but still poor (Iceland, 2003; U.S. Census Bureau, 2002). For example, in 2002 state–federal vocational rehabilitation consumers who closed successfully obtained employment with hourly wages only 57% of the mean national hourly wage (Rehabilitation Services Administration, 2002). If one assumes that successfully closed consumers work full time, their mean wage places them at approximately 200% of the poverty level, which makes them still likely to experience hardships (Iceland, 2003).

This article provides a model to explain the factors that place poor individuals at higher risks for acquiring disabilities or chronic health problems. In addition, the model explains other sequelae associated with disability, specifically, circumstances that tend to perpetuate an individual’s disability or chronic health problem and in-

crease the chances of more severe disability-related functional effects.

POVERTY DISABILITY MODEL

The Poverty Disability Model (PDM) provides an explanation of the process through which an individual who starts in poverty increases the likelihood that he or she will acquire a disability and may, in fact, become disabled. Poverty is associated with four groups of effects: (a) social role devaluation (Wolfensberger, 2000), (b) environmental risk factors (Evans, 2004; Link & Phelan, 1995), (c) negative group influences (Durlauf, 2001), and (d) weakened sense of coherence, defined as a global orientation that the world is incomprehensible, unmanageable, and unmeaningful (Antonovsky, 1987, 1991). Poverty causes a reduction in access to resources that affect whether an individual acquires a chronic health problem or disability. Each of these factors places an individual at increased risk for acquiring a chronic health problem or disability (see Figure 1).

These four effects that lead to an increased risk of disability and chronic health problems are considered social causes of disability. Individually based factors associ-

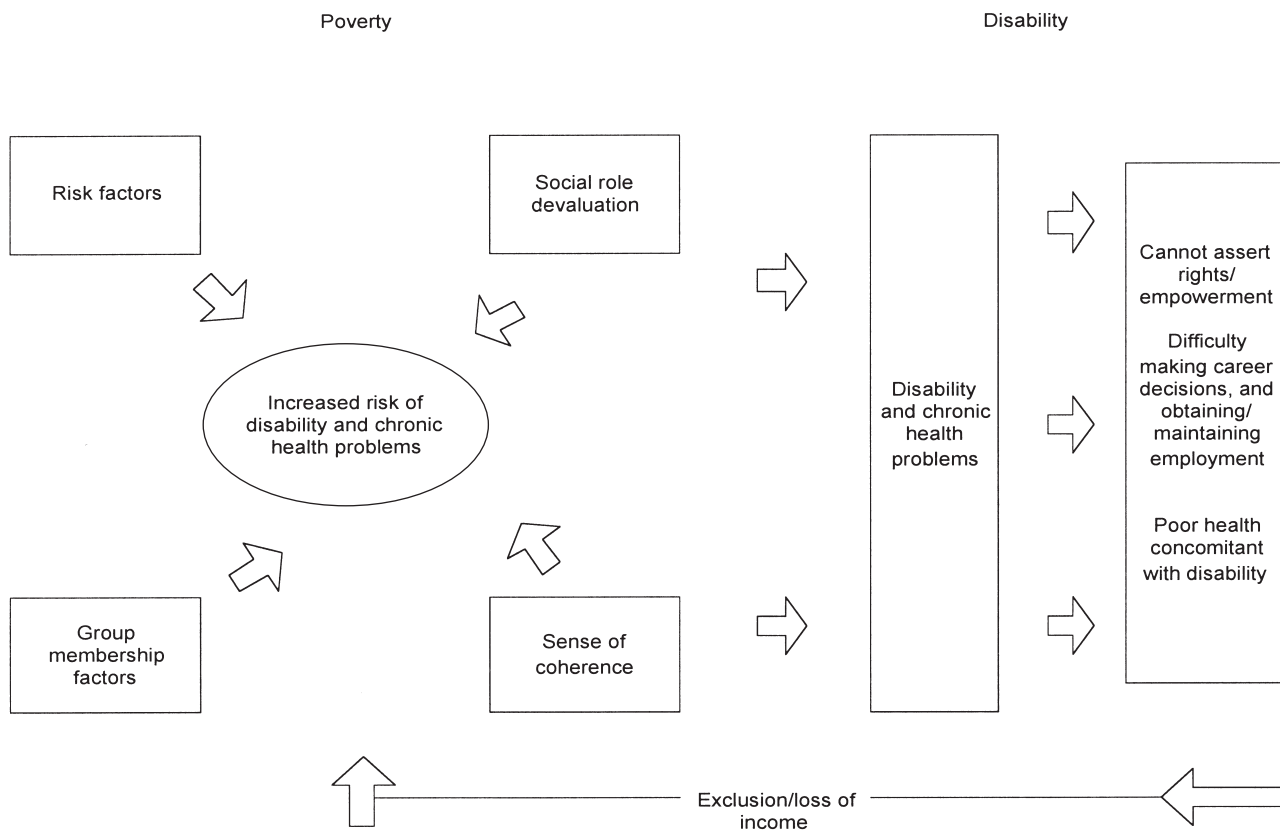


FIGURE 1. Poverty Disability Model.

ated with poverty also lead to increased risk of disability and chronic health problems. Poor diet, lack of exercise, and high blood pressure, which usually are individually based causes of disability or chronic health problems, are generally controllable by the individual, although in some instances they are not. For example, lack of exercise may be a function of living in an unsafe neighborhood, whereas being in a park or jogging may be hazardous. Although these points are important for preventing disability or chronic health problems, the focus of this model is on social causes.

Although many, if not most, poor individuals will not develop a disability or chronic health condition, those who do may have difficulty exercising rights, achieving empowerment, making career decisions, obtaining and maintaining employment, accessing resources, and navigating social service systems. Each of these outcomes results in maintaining the individual's disability or chronic health problem and may even increase negative functional effects of the disability. The following discussion describes the model in more detail.

Social Role Devaluation

Wolfensberger (1983, 2000) provided an explanation as to why individuals with mental retardation experienced a variety of negative life experiences. The analysis is relevant for poor persons because social roles occupied by the poor and by people with mental retardation are devalued. Wolfensberger (2000) stated that people's welfare depends extensively on the social roles they occupy. A *social role* is a combination of behaviors, functions, relationships, privileges, duties, and responsibilities that are socially defined, widely understood, and recognized within a society. People who fill roles that are positively valued by others will generally be treated well, whereas persons who occupy devalued roles will typically be treated badly. Within the model presented, being poor is considered a devalued social role. Devalued people consequently experience a variety of harmful life experiences.

With this devalued social role, individuals who are poor are at increased risk for chronic health problems and disability in a number of ways. First, poor people are assigned to low social status, are looked down upon, and are systematically rejected by society, community, friends, family, and professionals. Second, poor individuals are more likely to experience a loss of control over their lives, because persons who are not devalued make decisions for them. Third, poor individuals are more likely to be deindividualized in the implementation of health and social services. Finally, poor individuals are associated with negative images, such as being dependent, lazy, or a welfare recipient. These negative images increase the likelihood that others will treat them badly and make them scapegoats for societal problems.

The effects of these experiences are that a poor individual's access to health and social services is reduced and the services he or she receives are of inferior quality. For example, poor families are (a) less likely to have health insurance than more affluent families (DeNavas-Walt et al., 2004) and (b) less likely to use health insurance if they are insured (Weinick, Byron, & Bierman, 2005). The quality of the health care is typically lower. In a study analyzing two national health-care databases, children from low-income families, when compared with children from middle-income families, were less likely to have had a visit to the physician, less likely to have been prescribed medicines, and more likely to have visited an emergency room rather than outpatient services (Simpson et al., 2005). In the same study, low-income children's parents were twice as likely to report that health providers never or seldom listened carefully to them or exhibited respect for them, compared with middle-income families' perceptions (Simpson et al., 2005).

Wolfensberger also posited that individuals who occupy more than one category are often more devalued than persons who fit only one category. This would suggest that individuals who are poor and a member of another devalued group are at greater risk of being treated badly than individuals who are poor but are a member of a valued group. Considerable research has suggested that ethnic groups are devalued. The following discussion briefly reviews research on the impact of being a member of a devalued ethnic group.

In neighborhoods where 40% or more of the residents are poor, most residents are members of a minority group (Gephart, 1997). For instance, Blacks and Hispanics are less likely to have health insurance (DeNavas-Walt et al., 2004). A greater proportion of Blacks are poor relative to non-Blacks, and Blacks have higher rates of health problems (DeNavas-Walt et al., 2004; Mullahy & Wolfe, 2001). For example Blacks, compared with Whites, have higher rates of infant mortality, cervical cancer, cardiovascular disease, diabetes, HIV/AIDS, new cancers, and cancer deaths (Center for Disease Control, 2005; National Institute of Cancer, 2003; Shin, Jones, & Rosenbaum, 2003). Blacks are less likely to have been vaccinated against influenza, received prenatal care, received appropriate treatment for acute myocardial infarction, or undergone coronary angioplasty (Center for Disease Control, 2005; Vaccarino et al., 2005). Black children are less likely to receive routine asthma medications, and Black women experience a longer time between an abnormal mammogram screening and follow-up diagnostics. Further, minorities have less access to mental health services (Agency for Healthcare Research and Quality, 2000; Centers for Disease Control and Prevention, n.d.). Factors contributing to racial/ethnic health disparities include (a) socioeconomic factors, such as education and employment, (b) decreased physical activity and increased

alcohol intake, (c) discrimination causing social environmental differences, such as reduced educational and economic opportunities, and (d) reduced access to preventive health-care services (Centers for Disease Control and Prevention, 2005).

Environmental Risk Factors

Poverty has many associated environmental risk factors that increase the likelihood that an individual will acquire a disability or chronic health problem. For example, individuals who are poor often live in neighborhoods with high crime, poor schools, and limited social networks. Although many possible environmental risk factors may affect the likelihood of chronic health problems and disability, the following discussion centers on those thought to be most important.

Low-income neighborhoods are associated with a higher incidence of neighborhood crime (Evans, 2004; Frenn et al., 2005) that contributes to increased chances for injuries and reduced physical exercise (Saegert & Evans, 2003). Housing in low-income neighborhoods is more likely to have poor plumbing and heat, poor indoor air quality, more dangerous street traffic, poorer municipal services, apartments with too many occupants, high levels of community noise, and occupants who do not feel they can control their living space (e.g., noisy, no personal space; Evans, 2004; Saegert & Evans, 2003). All of these physical and psychological expressions of poverty increase the likelihood of experiencing psychological distress and acquiring a disability or chronic health condition. For example, lead exposure has been associated with learning problems, exposure to smoking associated with asthma, and dangerous street traffic with injury.

Low-income children are particularly vulnerable to the impact of poverty. In comparison with middle-income children, poor children experience greater levels of violence and divorce and are twice as likely to change residence in a year and five times as likely to be evicted (Evans, 2004). Greater violence and frequent changes in family structure are associated with significantly increased birth risks and a greater likelihood of not having health-care needs met (Fairbrother, Kenney, Hanson, & Dubay, 2005; Wu, 1996). Poor families have a 40% higher risk of having a child with a disability (Meyers, Lukemeyer, & Smeeding, 1998). This increased risk is related to (a) poor neighborhoods where they are exposed to heightened environmental risks, (b) poor maternal nutrition and poor health care, which increase the chances for low birth weight, and (c) inadequate early nutrition or health care that might prevent the development of serious disabilities and health conditions.

When poor children enter the school system, they are less likely to have qualified teachers, more likely to report weapons in school or physical assaults, and more

likely to sit in classrooms that are noisy, compared with middle-income students (Evans, 2004). School systems in low-income areas spend less per pupil than more affluent areas (Biddle & Berliner, 2002; Slavin, 1997). Other studies have shown a relationship among poverty, low academic achievement, and rates of school dropout (Gephart, 1997).

Being poor also adversely affects access to health care or health insurance, whether one is employed or unemployed. Although unemployment is positively related to a lack of health insurance, a significant percentage of individuals who do work are uninsured (Budetti, Duchon, Schoen, & Shikles, 1999; Duchon, Schoen, Simantov, Davis, & An, 2000). Budetti et al. (1999) found that workers earning less than \$35,000 annually are five times as likely to be uninsured as workers earning over \$35,000 and more likely to be in fair or poor health, to have skipped needed medical care in the past year because of cost, and to have been unable to pay medical bills in the past year. Persons who are employed and poor are less likely to have employer-based health insurance, less likely to purchase employer-based health insurance when offered, and less likely to use insurance when ill. Poor individuals, whether employed or unemployed, are more likely to postpone medical care in the past year or use the emergency room as their main source of care (DeNavas-Walt et al., 2004; Guendelman, Angulo, & Oman, 2005; Iceland, 2003; Northam, 1996; U.S. Department of Health and Human Services, 2005). For poor individuals with access to reduced-fee public health clinics, 46% reported not using the health clinic for financial reasons and 24% had not gone because of long waiting times at the clinic (Kiefe & Hyman, 1996).

Finally, low-income families have smaller social networks that negatively affect an individual's ability to obtain and maintain employment (Evans, 2004; Pearlin & Johnson, 1977; Potts, in press; Weinraub & Wolf, 1983; Wilson 1991). Labor markets, important in facilitating access to job information, are communicated to individuals via social networks consisting of family, friends, and relatives (Ferguson, 2002). Since approximately 50% of workers know someone at their place of employment when hired, strong social networks are an important source of an individual's ability to successfully enter the labor market (Durlauf, 2001). If a job seeker has a limited social network, as is typical in poor neighborhoods, he or she is less likely to obtain important job information necessary for matching the individual with a job (Durlauf, 2001). In addition to assisting an individual to find out about job openings and obtain employment, social networks affect the employee's ability to maintain employment (Ferguson, 2002). For example, social networks may help a worker be familiar with a particular supervisor's management style, which may assist in understanding what is expected on the job.

Negative Group Influences

The model incorporates a “memberships” theory of poverty elucidated by Durlauf (2001, 2002). The central idea is that membership in a group, in this case, poor individuals living in a neighborhood, affects individual behaviors and outcomes. Social context and an individual’s interdependence on other persons are important in the kinds of choices made and the options available for those choices (Durlauf, 2001). Individuals are influenced by the choices of other persons, and the benefits and consequences of pursuing a particular activity change as people engage in that activity (Durlauf & Young, 2001; Glaeser & Scheinkman, 2001). Durlauf (2001) and Young (2001) described two group factors that influence individual choices and behaviors.

The first set of group factors is based on Bandura’s theory of social or observational learning (Bandura, 1989). Bandura posited that most human behavior is learned by observation through modeling (Bandura, 1986). Observation provides a guide to future behavior. According to observational learning, models and environmental factors influence individuals by providing information rather than by eliciting matching behavior (Bandura, 1986; Strauser, Waldrop, & Ketz, 1999). Within the context of a poor neighborhood, the impact of models can be understood as the effects of peer groups and role models on conformity.

Peer group and conformity are the effects of the choices of some members of a group on the preferences of other members. Peer groups establish norms and accepted behaviors that can encourage or discourage behaviors. Similarly, there is a tendency of individuals to conform to the behaviors of others (Young, 2001). In the context of neighborhood influences in poor neighborhoods, the adoption of a behavior is more likely when one’s neighbors or peers adopt the behavior. This holds true for both positive and negative behaviors.

Young (2001) identified three reasons why individuals may want to conform. First, imitative conformity means that people conform because they want to be like the people around them. For example, adolescents may decide to drink alcohol because they want to be like their peers. Second, instrumental conformity means that individuals conform because it is helpful. Individuals in a particular neighborhood may use neighborhood-specific language because it assists them in being understood. Third, informational conformity means that individuals adopt a behavior because they see the behavior demonstrated around them and perceive its desirability. Selling drugs or doing well in school are examples.

Peer groups and role models are typically the reference for conformity. Research has shown the influence of peer groups on drug use, alcohol use, and criminal activity (Flom, Friedman, Kottiri, Neaigus, & Curtis, 2001; Gephart, 1997). For example, a study of adolescents found

that having friends who used drugs predicted increased drug use (Razzino et al., 2004). The socioeconomic level of one’s peers has an independent and significant effect on health-related behaviors such as condom use (Caldas & Bankston, 1997; Norris & Ford, 1998). Thus, the influence of peer groups and the desire to conform affect a number of health-related behaviors that may increase the likelihood of developing a chronic health problems or disability.

The following examples assist in understanding the impact of peer groups and role models on the development of chronic health problems and disability. First, *education* affects an individual’s ability to find employment, and unemployment reduces access to consistent health care (Lustig, Strauser, & Donnell, 2003). If children in a poor neighborhood see adults either not completing degrees or not obtaining employment upon completion of a degree, they may inappropriately decide not to pursue post-high school education (Durlauf, 2001). Second, an individual’s decision to use scarce financial resources to pay for prescribed medications or to visit an emergency room when ill are affected by the experience of modeled behavior of people in the neighborhood. For example, if an ill person receiving emergency room services sees poor patients waiting a long time and treated with a lack of respect, the individual may conclude that it is a bad decision to use emergency room services when ill (Simpson et al., 2005). Third, an individual’s decision to use and/or sell illegal drugs is affected by the modeled behavior of peers who make money selling drugs (Greene, 1993; Razzino et al., 2004). These examples provide a basis for behavior that may lead to an inability to secure appropriate medical care, an increased likelihood that a treatable condition will become a chronic health condition, and an increased risk for alcohol or drug abuse.

The second group factor is *social complementarities*. This is the influence of other persons on the benefits and productivity of an individual’s choices (Durlauf, 2001; Glaeser & Scheinkman, 2001). It implies that each individual’s small change can increase the benefits for everyone else. This is because social interactions are highly interdependent and imply a multiplier effect in which small changes can have a large effect on the neighborhood. For example, one person may start a restaurant in a neighborhood that employs 10 previously unemployed people. This may then affect the families both through increased financial resources and through positive role models for their children.

Weakened Sense of Coherence

Antonovsky (1987) hypothesized that factors such as money, religious faith, and social support, termed *generalized resistance resources*, provide individuals with life experiences that are characterized by consistency, an

underload–overload balance of stimuli, and participation in determining outcomes. These kinds of life experiences lead an individual to believe that he or she can derive order and sense out of chaos. This belief about the world, termed *sense of coherence*, is the global orientation that the world is comprehensible, manageable, and meaningful (Antonovsky, 1987, 1991). *Comprehensibility* is the belief that the world is predictable, ordered, and explicable. *Manageability* is the belief that one has the personal and social resources to handle a demand. *Meaningfulness* is the belief that demands are challenges worthy of investment and commitment. Persons with a strong sense of coherence are able to manage the tension associated with stressors more successfully.

Generalized resistance resources assist in developing a strong sense of coherence and serve as coping resources that protect an individual from the negative impact of the tension associated with stressors (Antonovsky, 1987, 1991). Consistent experiences form the basis for comprehensibility. Experiences where one believes that resources are available to meet life's demands form the basis for manageability. Experiences involving participation in shaping outcomes form the basis for meaningfulness. It is hypothesized that poverty is characterized by inconsistent and unreliable experiences (comprehensibility), chronic difficulty in marshaling resources to meet life demands (manageability), and disempowerment at all levels of daily life (meaningfulness).

Sense of coherence facilitates adjustment by increasing the likelihood that an individual will believe that dealing with the stressor is worthwhile, that attempts to resolve the problem are worth the effort, and that the stressor is a challenge rather than a burden; consequently, the individual may decide to do something about the stressor. Within the context of poverty, individuals with a low sense of coherence are less likely to effectively engage the health-care system or make decisions that are health facilitative, and they are less likely to persevere in pursuing educational and vocational endeavors. These factors increase the chances that the person will acquire and maintain a disability or chronic health problem, and they decrease the likelihood that the person will obtain and maintain employment.

Research has also provided evidence that a strong sense of coherence is positively related to subjective health perceptions, general health, self-esteem, internal locus of control, and life satisfaction/quality of life (Antonovsky, 1993; Ebert, Tucker, & Roth, 2002; Korotokov, 1998; Lustig, Rosenthal, Strauser, & Haynes, 2000; Motzer & Stewart, 1996; Soderberg, Lundman, & Norberg, 1997) and negatively related to state and trait anxiety, perceived stressors, depression, somatic complaints, dysfunctional career thoughts, and poor work adjustment (Antonovsky, 1993; Carstens & Spangenberg, 1997; Korotokov, 1998; Flannery, Perry, Penk, & Flannery, 1994;

Kalimo & Vuori, 1990; Lustig & Strauser, 2002; McSherry & Holm, 1994; Rena, Moshe, & Abraham, 1996; Strauser & Lustig, 2003).

Research has provided some support for the relationship between poverty and lower levels of sense of coherence. Lower sense of coherence has been shown to be associated with lower socioeconomic status (Groholt, Stigum, Nordhagen, & Kohler, 2003). Lundeberg (1997) found a small relationship between childhood economic hardship and adult levels of sense of coherence and also that childhood experiences (e.g., dissension in the family) and adult sense of coherence were risk factors for illness in adults. In a study of poor individuals, Nyamathi (1992) found that higher levels of sense of coherence were associated with fewer somatic complaints and fewer high-risk behaviors.

DISCUSSION

Three important outcomes of acquiring a disability or chronic health problem emanate from the circumstances of poverty. Each of these outcomes results in perpetuating an individual's disability or chronic health problem and potentially increasing the functional sequelae of the disability. It is hypothesized that these effects are particularly salient for the individual because of the developmental impact of living in poverty. The first outcome involves a reduced ability to assert one's rights and to act in an empowered manner. Balcazar, Mathews, Francisco, Fawcett, and Seekins (1994) defined empowerment as the process of individuals who lack an equal share of valued resources gaining access and control over those resources. Three empowerment-related effects are considered likely. First, devalued social roles have the effect of reducing control over one's resources (Wolfensberger, 1983, 2000). Second, weakened sense of coherence engenders a belief that changing the environment is ineffective (Antonovsky, 1987). Finally, disempowered role models reduce the chances that social learning will produce an individual who is empowered (Bandura, 1986).

The second outcome involves an increased difficulty in making effective career decisions and obtaining and maintaining employment. Strauser, Lustig, and Uruk (2004) have demonstrated the relationship between disability status and problems with career decision making. Individuals with dysfunctional career thoughts experience (a) decision-making confusion, related to emotions or lack of decision-making skill knowledge that interferes with their ability to make a career decision, (b) commitment anxiety, related to difficulty committing to a career decision, and (c) external conflict, related to problems balancing input from others with their own thoughts with regard to career decisions (Reardon, Lenz, Sampson, & Peterson, 2000).

The third outcome centers on difficulty accessing resources and navigating social service systems. As with the first outcome (reduced empowerment), devalued social roles, a weakened sense of coherence, and ineffectual role models increase the likelihood that an individual with a disability will experience problems in accessing medical resources that would reduce or contain the effects of the disability. In addition, risk factors such as unemployment and difficulty securing transportation decrease access to health care. Individuals who are poor are less likely to have health insurance, more likely to be unable to use the health insurance they have, and more likely to receive inadequate health care (DeNavas-Walt et al., 2004; Guendelman et al., 2005; Northam, 1996; U.S. Department of Health and Human Services, 2005). For individuals who are disabled and poor, there is an increased likelihood they will have associated health problems and a decreased likelihood they will be able to manage their primary disability.

Conclusion

The Poverty Disability Model provides a causal link between poverty and disability. The PDM establishes a foundation for future basic and applied research that examines causal connections between poverty and disability. Future research should be directed at testing relationships among the variables in the model and building a pool of strong scientific evidence regarding interventions or strategies that are aimed at reducing the impact of poverty on the development of disability.

The purpose of this model is to explain complex relationships by providing a simplified view of a variety of causal factors and interactions among variables. Initially, the PDM consists of hypothesized variables and relationships that will need to be substantiated by the accumulation of high-quality empirical research. When a model is initially developed and void of rigorous testing, it is important for research to first establish the individual relationships among the proposed constructs rather than attempt to validate concurrently all of the model's proposed relationships (MacCallum & Austin, 2000). This is especially important with a model like PDM, which provides a general structure but does not attempt to include all possible variables and interactions that may affect the relationships. In contrast to a top-down approach that attempts to test the efficacy of the entire model from the onset, the developers of the PDM suggest that research regarding poverty and disability should be conducted from a progressive and systematic bottom-up approach. Testing only specific aspects of a model is not uncommon and has been the preferred method for seminal theories in the social sciences, such as Bandura's Social Cognitive Theory (Bandura, 1986). The advantage of testing specific relationships in the model is that each component is tested

systematically and provides a solid foundation for testing and explaining the entire model. As evidence is accumulated, support for the model grows. Latent variables and relationships are identified, and eventually an empirically supported structure emerges that begins to explain the impact of poverty on disability. An additional advantage of the bottom-up approach is that it allows for theory-building research to be done with smaller sample sizes. Given the difficulties involved in accessing large samples of individuals with disabilities, it is useful to be able to conduct research on smaller samples. Ultimately, the purpose of the PDM is to assist rehabilitation counselors in providing consumers who are poor and disabled with effective and high-quality services that improve their lives.

ABOUT THE AUTHORS

Daniel C. Lustig, PhD, CRC, is an associate professor of rehabilitation counseling at the University of Memphis. His current research interests include adjustment to disability, career thoughts, therapeutic alliances, and trauma. **David R. Strauser, PhD, CRC**, is an associate professor of rehabilitation counseling at the University of Illinois. His interests include the assessment of individuals with disabilities, the psychological factors that impact career development, the impact of trauma symptoms on career development, and the impact of the working alliance on rehabilitation outcomes. Address: Daniel C. Lustig, PhD, 113 Patterson Hall, College of Education, University of Memphis, Memphis, TN 38152; e-mail: dlustig@memphis.edu

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