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**Social Determinants of Racial/Ethnic Health Disparities
in Children and Adolescents**

James H. Price, Molly A. McKinney, and Robert E. Braun

Abstract

Too many racial/ethnic minorities do not reach their full potential for a healthy and rewarding life. This paper addresses the social determinants that impact, either directly or indirectly, child and adolescent health disparities. Understanding the role social determinants play in the life course of health status can help guide educational interventions and public policies in reducing racial/ethnic health disparities. We can no longer place the responsibility for adverse health outcomes solely on individuals and expect programs based primarily on individual health behaviors to eradicate the considerable racial/ethnic health care disparities that continues to exist in the United States today.

Introduction

One of the two leading goals of *Healthy People 2010* is to eliminate health disparities among various segments of society. Health disparities result from both biological differences which may exist between various racial/ethnic groups and social disparities. Social disparities, also called social determinants, consist of a variety of contextual factors such as socioeconomic status, discrimination, education levels, housing, transportation, and crime and violence, all of which play a causal link in subsequent adult disease. These social disparities, both during critical periods of growth and as cumulative exposures create a potential miasma of disease inducing disparities.

Too many racial/ethnic minorities do not reach their full potential for a healthy and rewarding life. The inequalities in well-being by race/ethnicity are unjust, unnecessary and avoidable. If all children had the same level of health and well-being as the most economically advantaged, it would reduce poor health outcomes by 60% to 70% (Council on Community Pediatrics and Committee on Native American

Child Health, 2010). Another way to contrast the problem is that from 1991 to 2000 medical advances averted 176,633 deaths among African Americans. However, if we had equalized the mortality rates of African Americans to that of Whites during that same period we would have averted about five times (886,202) as many African American deaths (Wolf, Johnson, Fryer, Rust, & Satcher, 2004). In 2009, health disparities among African Americans, Hispanics and Whites were estimated to cost almost \$24 billion in health care costs (Waidmann, 2009).

Our recent efforts to ameliorate health disparities has focused on health education/health promotion (primary and secondary prevention) and improving access to health care by providing health insurance to the uninsured (secondary and tertiary prevention) (Figure 1). Current health interventions, including health education/health promotion, are focusing on downstream interventions that are not likely to eliminate health inequalities. We need a new focus on the social determinants of health (upstream).

This paper focuses on social disparities because their effects on health and well being are greater than biological differences and "... because they are avoidable and inherently unjust." (Adler & Rehkoff, 2008, p. 237). Understanding the role these factors play in health status can help guide educational interventions and public policies in reducing racial/ethnic health disparities. Thus, this paper specifically examines the roles of the aforementioned components of social determinants on racial/ethnic differences in health status.

Racial/Ethnic Discrimination

Prejudice is typically a negative emotional response toward a particular group of individuals. In contrast, discrimination is negative treatment of others who are members of a particular group. Prejudice and discrimination form the basis of racism. Racism has been defined as "the beliefs, attitudes, institutional arrangements, and acts that tend to denigrate individuals or groups because of phenotypic characteristics or ethnic groups affiliation" (Clark, Anderson, Clark, & Williams, 1999, p. 805).

Racism has been said to occur at multiple levels, cultural, institutional, personal, and internal (Jones, 2000). Cultural and institutional racism do not require intent but are inherent in the policies and procedures of the organizations and

James H. Price, PhD, MPH, FASHA; Professor Emeritus of Health Education and Public Health; University of Toledo, Toledo, OH. E-mail: jprice@utnet.utoledo.edu; Telephone: 419-530-2743; Fax: 419-530-4759

Molly A. McKinney, MA; Doctoral Graduate Assistant; University of Toledo, Toledo, OH

Robert E. Braun, MPH, CHES; Doctoral Graduate Assistant; University of Toledo, Toledo OH

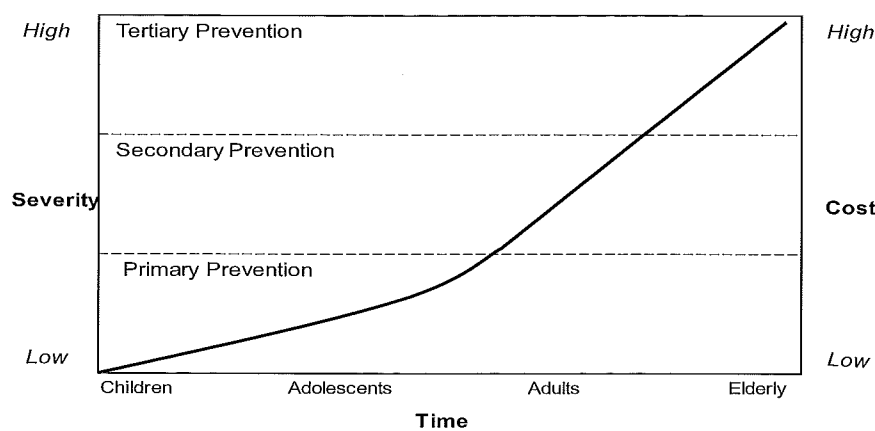


Figure 1. Progression of chronic disease across the lifespan and stages of prevention.

thinking of many of the individuals in positions of authority. Personal or individualized racism refers to racism that has been personally experienced. It may be overt (e.g., racial slurs or even physical abuse) or covert (e.g., not explicit but implicit in communications) in nature. Internalized racism occurs when members of a particular stigmatized group incorporates into their belief systems the negative beliefs (e.g., inferiority) regarding their group and themselves.

Racial/ethnic discrimination typically encompasses a wide range of behaviors including the following: ignoring individuals, rejecting individuals, social exclusion, demeaning verbal and non-verbal behaviors, lowered expectations, workplace discrimination, victim blaming, and even physical violence (Brondolo, ver Halen, Pencille, Beatty, & Contrada, 2009). The experience of racial/ethnic discrimination is far greater in African Americans than in Whites (98% versus 10%, respectively) (Ren, Amick, & Williams, 1999).

The factors that influence health status, and which affect all races and ethnicities, are widely known and targeted by health professionals to reduce health risks to individuals. However, less acknowledged is the role of racial/ethnic discrimination as the root cause of health disparities (Figure 2). Racial/ethnic discrimination is the foundation for the proximate causes of the social determinants of racial/ethnic disparities in health.

It is critical that discrimination become a part of the topics addressed in health promotion. We need to first acknowledge that racism still exists. We need to take the power out of racism by talking about it openly. Racism is something that people learn; it can be unlearned. Racism exists when there is ignorance and fear. We need to recognize that racism hurts everyone, not just racial/ethnic minorities. Racism has serious consequences, and physiological mechanisms that create poor health and premature mortality and both need to be better understood.

Poverty

Each year the government updates the poverty guidelines

(Table 1) using the change in the average annual Consumer Price Index for All Consumers to establish dollar amounts based on the size of the family (DeNavas-Walt, Proctor, & Smith, 2009). In 2009, the poverty rate was 14.3% (43.6 million people), the largest number of people in poverty in the 51 years that this data has been tracked. Poverty rates vary by racial/ethnic groups, with 25.8% of African Americans in poverty, 25.3% of Hispanics and 9.4% of Whites. Cumulative poverty (having spent at least one year in poverty) varies by race and age, by age 70 41% of Whites and 85% of African Americans will have experienced poverty (Rank, 2009).

The poverty rate for children in 2009 was 21% (n = 15,451,000). Children comprised 36% of people in poverty but only about 24% of the total population. Child poverty rates vary by race/ethnicity, with about 46% of African American children and 40% of Hispanic children living in poverty. For families with a female head of household the poverty rate is 44% compared to 11% of married-couple families with children (DeNavas-Walt et al., 2009). Racial/ethnic disparities in poverty are concentrated in urban areas where 76% of African Americans and 69% of Hispanic children live in neighborhoods with poverty rates higher than those in the 25% worst-off neighborhoods of White children (Acevedo-Garcia, Osypuk, McArdle, & Williams, 2008).

Categorizing a person as *in poverty* is one way of denoting their financial challenges, but for too many it hides the proportion of Americans in severe poverty (50% or less of poverty thresholds). In 2009, 19,028,000 Americans (6.3%) were in severe poverty and 36% (6.9 million) of those individuals were children (DeNavas-Walt et al., 2009). These individuals often cannot meet their most basic needs (e.g., food, clothing and shelter) let alone worry about their health care, eating five servings of fruits and vegetables, and getting the recommended levels of exercise. Severe poverty affects racial/ethnic minority children more than White children, with 45% of all African Americans in severe poverty being children as is 44% of all Hispanics (Woolf, Johnson, & Geiger, 2006). Thus, children in severe poverty are especially vulnerable to inadequate nutrition, growth and development,

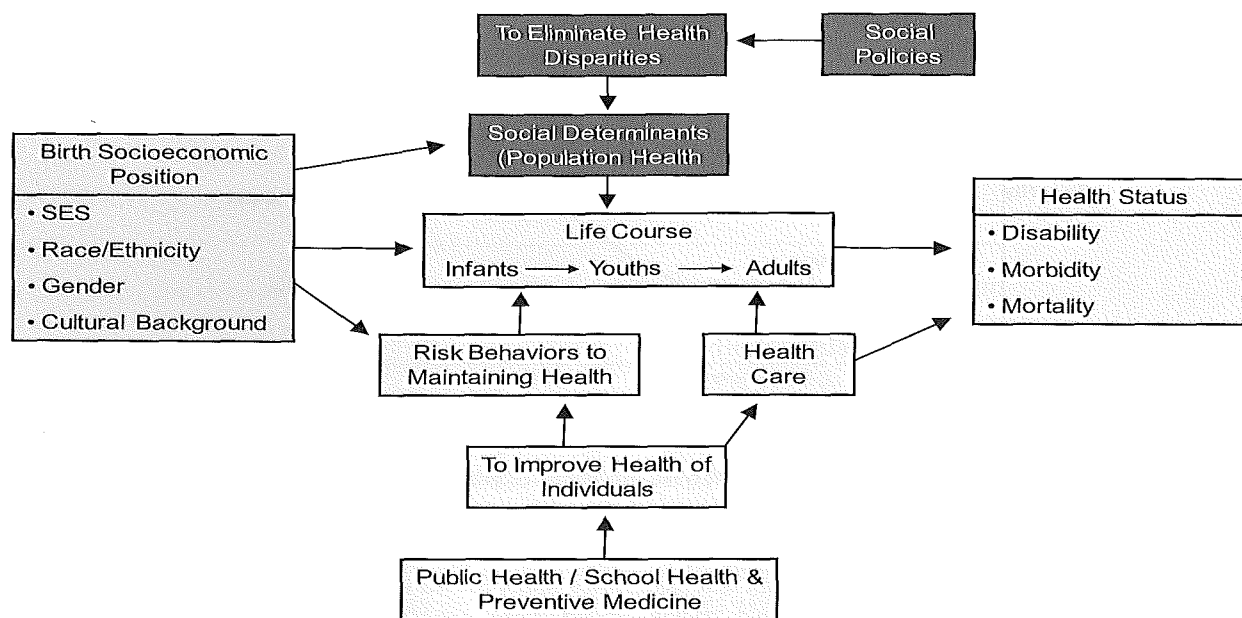


Figure 2. Determinants of racial/ethnic disparities in health status.

educational success, cognitive skills, and quality of parenting (Woolf et al., 2006).

Many families cycle into and out of poverty over time, but seldom rise to middle class status, and others remain in persistent poverty. A very different picture of childhood poverty emerges when tracked over time. At some point during their childhood, 37% of all children will live in poverty. Another way of looking at this problem is that 70% of White children are never poor, but only 23% of African American children are never poor (Ratcliffe & McKernan, 2010). Persistent poverty, defined as poor for at least half of their childhood, is experienced by 5% of White children and by 37% of African American children. Of those children who are poor at birth, 31% of White children and 69% of African American children are persistently poor. Those who are poor at birth compared to those not poor at birth, are 5 times more likely to be poor as a young adult (ages 25-30), 3 times more likely to not graduate from high school, and 3 times more likely to have a teenage pregnancy (Ratcliffe & McKernan, 2010).

It should be imminently clear that more resources need to be focused on children born into poverty and to their families. The *American Dream* of achieving economic affluence (10 times the poverty level) is rare for White Americans (33%) and is almost unheard of in African Americans (4%) (Rank, 2009). Most often when African Americans move out of a low-income origin they move into the middle class, mostly at the lower-middle class range. Often they are employed in government jobs and in jobs that directly provide services to economically disadvantaged African Americans (Rank, 2009). Thus, you often find that African American college graduates from low-income backgrounds have lower earnings and occupational status than White middle-class college

graduates for many years after they graduate.

It has been estimated that the long term costs to society of children growing up in poverty is about \$500 billion per year (Holzer, Schanzenbach, Duncan, & Ludwig, 2008). This figure represents lost earnings, increased crime rates and the lost quantity and quality of life due to the impact of poverty. To bring every family up to at least the poverty level would cost about an additional \$22 billion a year (Ziliak, 2009). Comparing this cost to Social Security for the elderly, which in 2006 was \$554 billion a year puts these costs in perspective (Currie, 2009). We cannot afford to ignore the need for more comprehensive efforts to eliminate poverty for all children but especially racial/ethnic minority children.

Education and Health Literacy

The number one thing that can improve the health of a population and help reduce health disparities is to improve the quantity and quality of education received (Freudenberg & Ruglis, 2007). Education level impacts occupation, income, wealth and neighborhood of residence (Cutler & Lleras-Muney, 2006). Education also impacts health by affecting a variety of health risk behaviors, including smoking, no exercise, poor diet, sexual activity, teenage pregnancy, and involvement in crime (Lantz et al., 1998; Lochner, 2004; Upchurch, Lillard, & Panis, 2002; Winkleby, Cubbin, Ahn & Kiaemer, 1999). In addition, more education is associated with lower death rates (Molla, Madans, & Wagener, 2004). Thus, it should not be surprising that the racial/ethnic gap in education attainment is a primary contributor to racial/ethnic disparities in mortality (Wond, Shapiro, Boscardin, & Ettner, 2002).

The foundation for academic success is established

Table 1

2011 Poverty Guidelines

| Family size | 100% (Poverty) | 50% (Severe poverty) |
|-------------|----------------|----------------------|
| 1 | \$10,890 | \$5,445 |
| 2 | \$14,718 | \$7,355 |
| 3 | \$18,530 | \$9,265 |
| 4 | \$22,350 | \$11,175 |
| 5 | \$26,170 | \$13,085 |
| 6 | \$29,990 | \$14,995 |
| 7 | \$33,810 | \$16,950 |
| 8 | \$37,630 | \$18,815 |

Note. For family units of more than 8 members, add \$3,820 for each additional member.

Source: Federal Register, Vol. 76, No. 13, January 20, 2011, pp. 3637-3638

long before children enroll in schools. In fact, the biggest contributor to whether children arrive at school likely to succeed or to fail is the quality of education related experiences they have had at home and in preschool settings. Reading aloud to a young child is the most important activity a parent can do to help make their child successful in reading (Russ et al., 2007). The percentage of families reading to their children varies by race/ethnicity and family socioeconomic status. Young children (ages birth to 5 years) are most likely to be read to every day if they are White (55%), compared to African Americans (38%) and Hispanics (33%). A small but significant percent of children are never read to and can be characterized as families in which the highest level of education is less than a high school diploma (16%), Hispanic youths (15%), and families with incomes less than 100% of federal poverty level (12%) (Russ et al., 2007). Many of the aforementioned families have parental figures who disliked school or were not very successful at school. Thus, it should not be surprising that these parents would not find reading to their children a pleasant experience. Yet, for a child to enter school ready to learn, it is essential that frequent reading take place to help develop language and literacy skills which improves a child's vocabulary so that the child will be successful at reading. Additionally, the greater the number of program activities in which parents participate during preschool and kindergarten the higher the reading achievement of the child, the less likely the child is to be retained by the eighth grade and the less likely the child is to spend time in special education (Miedel & Reynolds, 1999).

Every school day, almost 7,000 students drop out of school. Without a high school diploma, these individuals are more likely to experience periods of unemployment, being on government assistance, and being incarcerated. The percentage of students who fail to graduate from high

school in four years is higher for African American (45%) students than for Hispanic (42%) or White (22%) students. While those who drop out and never complete high school is highest for Hispanics (12%), followed by African Americans (8%) and Whites (5%) (Shore & Shore, 2009). In reality, only about two-thirds (65%) of African American and Hispanic students leave high school with a diploma (Heckman & LaFountain, 2008). The rest who are identified as completing high school is derived by including GED (General Education Development) recipients in the total. Additionally, males are more likely than females and low socioeconomic youths are more likely than non-low socioeconomic students to drop out of high school (Shore & Shore, 2009). It has been estimated that between the ages of 18 and 64, dropouts will earn an average of about \$400,000 less than high school graduates. Evidence indicates that for those students who stay in school the quality of the educational experience will vary by the racial/ethnic composition of the school and the socioeconomic environment of the school. Schools with a majority of the students being racial/ethnic minorities are more likely to employ beginning teachers; the teachers are much less likely to have majored in the subjects they teach; they are less likely to have master's degrees, have higher teacher absences and turnover rates; and have worse working conditions, including fewer textbooks and supplies, inadequate facilities, larger class sizes, and less administrative support (Children's Defense Fund, 2004). Students from these schools will be less well prepared to handle the rigors of pursuing a college education.

Racial/ethnic minority students are more likely than White students to report being fearful of their safety at their schools (Barton & Coley, 2009). This, in part, explains why racial/ethnic minority students are more likely than White students to change schools frequently. Combined with the inadequate preparation of low socioeconomic racial/ethnic

minority students, we find that in 2007 21% of African American students and 12% of Hispanic students compared to 9% of White students had been retained (i.e. repeat) a grade. In addition, 43% of African American students, 22% of Hispanic students and 16% of White students had been suspended (i.e., temporarily removed) from school, and 13% of African American students, 3% of Hispanic students and 1% of White students had been expelled (i.e., permanently removed) from their schools (Aud & Fox, 2010).

We find only a limited segment of society continues their formal education beyond high school. College education varies by race/ethnicity, with Whites (30%) most likely to be college graduates, followed by African Americans (20%) and Hispanics (13%) (U.S. Census Bureau, 2010). Thus, if we want to have a society that is health literate, that has "...the ability to perform basic reading and numerical tasks required to function in the health care environment" (Baker, 2006, p. 878) then we must make comprehensive quality education available in all our schools. Health literacy affords consumers of health care the skills to navigate the health care arena and may increase their self-efficacy in dealing with their health needs. The 2003 National Assessment of Adult Literacy assessed the health literacy of more than 18,000 adults. Using the categories of below basic, basic, intermediate, and proficient categories as increasing levels of health literacy, they found that 28% of Whites had limited health literacy skills (below basic and basic combined), as did 58% of African Americans and 66% of Hispanics (Kutner, Greenberg, Jin, & Paulsen, 2006). It has been estimated that health literacy-related disparities costs the U.S. more than \$50 billion per year (Weiss, 2003). Parental health literacy also affects the quantity and quality of health care of millions of American youths. In 2009, 10% of all youths (7.5 million) were without health insurance, and 15% of children in poverty were uninsured (DeNavas-Walt, Proctor, & Smith, 2009). Two-thirds of these children were eligible for government insurance (either Medicaid or Child Health Insurance Program), but their parents were not informed enough to know their child was eligible or they found the administrative hoops they had to jump through too daunting (Haley & Kenney, 2007).

Housing

There are two major factors in housing which directly impact health and well-being: residential racial segregation and homelessness. Residential racial segregation by discrimination in the sale or rental of housing was made illegal by the Civil Rights Act of 1968 (Thomas & Quinn, 2008). Yet, a series of pernicious acts, including racial steering by real estate agents, redlining by banks and insurance agencies, the locations of public housing, subtle but blatant housing discrimination, the costs of housing in various areas of communities, and white flight to the suburbs have led to segregated neighborhoods (Thomas & Quinn, 2008). Urban racial segregated housing is often substandard and likely to expose its residents to a wide

variety of pollutants. Urban racial residential segregation concentrates poverty, diminishes social networks, helps to create high unemployment, and diminishes access to new economic developments (Williams & Jackson, 2005). One of the results of such environmental constraints is the creation of unsafe neighborhoods, increased crime and poor role models for youth. Additionally, such conditions create an environment that facilitates peer pressure against academic achievement ("acting white").

An accurate assessment of the numbers of homeless individuals is difficult. Some who are poor will get into public shelters, some in government subsidized housing, but many more will live on the streets in cars and abandoned buildings. There are three groups of homeless individuals: single adults (49%), unaccompanied youth (also called runaway and throwaway youths) (17%), and families with children (34%) (National Center on Family Homelessness, 2009). Sixty percent of the children under 18 living with a homeless parent (84% female headed) are racial/ethnic minorities (47% African American and 13% Hispanic). On any given day about 400,000 youth are homeless for a yearly total of about 1.6 million youths (about 2% of all youths) (Burt, 2007).

All of these homeless youths have likely witnessed severe violent behavior toward their mothers. Their mothers are often impaired by depression (50-85%), abuse alcohol or other drugs (41%), and a large portion are in poor physical health (National Center on Family Homelessness, 2009). Obviously, these parents' ability to adequately parent their children is severely impaired. Parents in these circumstances are operating at the most basic levels of existence. Many are not likely to be warm nurturing parents and they are not likely to spend quality time with their children helping them to be successful in school.

The condition of being homeless has deleterious effects on the children. It is estimated that 30-40% have alcohol problems, 40-50% have drug abuse problems, 45-55% have mental health problems, 11% have asthma, and untold numbers are food insecure youths. The stress of being homeless will cause about one-third of these youths to engage in aggressive and delinquent behaviors (National Center on Family Homelessness, 2009). Strange acting and unfamiliar people are all around them, with the constant worry that something bad may happen to them or their family members. The result is that homeless children have significantly lower reading and math scores, 25-40% have had to repeat at least one grade, 32% have been expelled from school, and only about 25% will graduate from high school (National Center on Family Homelessness, 2009).

Transportation

A disproportionate share of low socioeconomic and racial/ethnic minorities reside in the heart of metropolitan areas. However, a disproportionate share (75%) of jobs in large cities are located in the suburbs (spatial mismatch) (Waller, 2005). Thus, the poor and many racial/ethnic

minorities must rely on public transit systems to get to work, to get to a physician, and to transport their children to school events or child care services and to recreational activities. The urban poor are most likely to ride buses, as their primary form of urban transit, followed by subways and then commuter rail (Waller, 2005). Yet, only about 5% of workers take public transit to work. This is not surprising given that public transportation to the suburbs takes at least twice the amount of time to commute as does traveling by car (Waller, 2005). In addition, public bus transits are too often characterized by dilapidated buses, long waits, poor connections, service cuts and hours of service often do not match commuters needs (Mann, Ramsey, Lott-Holland, & Ray, 2005/2006).

Poor parents have few alternatives to being poorly served by central city transit systems. Poor parents often cannot purchase adequate transportation either because of an inadequate down payment or because of the need to purchase older cars which are often in disrepair. They will have to pay more for the cars and their car insurance than would suburbanites with more resources. These unreliable, gas-guzzling, and often uninsured cars can consume up to 25% of the budget of a poor family (Waller, 2005). Thus, their only alternative is to not travel as much from their neighborhood. Which means that shopping for healthier foods in supermarkets in the suburbs and taking children who are not ill for preventive health care visits may be too burdensome to contemplate. It also means that spending such a large portion of the family's meager income on transportation results in opportunity costs, which are funds that could have been used to buy something else, such as to improve the health and well-being of family members.

Crime and Violence

As previously noted, racial and ethnic segregation in housing has a variety of negative consequences. One of those consequences is to magnify harmful behaviors if they are present in communities of color, and crime and violence are more common in communities of color. It is estimated that African Americans are about 30% of the population on probation, 40% of the parole population, and 44% of the prison population. The proportions that are Hispanic are 12% of those on probation, 18% of the parolees, and 19% of the prison inmates (Harrison & Beck, 2004; Harrison & Karberg, 2004; Hughes, Wilson, & Beck, 2001). Racial/ethnic minorities comprise about 50% of the population under control of the criminal justice system. It has been estimated that for those born in the early 1990s that 1 in 3 African American males, 1 in 6 Hispanic males, versus 1 in 17 White males are likely to end up in prison at some point in their lives. Women account for about 20% of the incarcerated population, and that group is 3 to 4 times more likely to be racial/ethnic minorities than to be White (Bureau of Justice Statistics, 2004).

The most powerful persons in criminal prosecutions

are judges and prosecutors. The prosecutor, regardless of the evidence, is free to dismiss a case. The prosecutor can transfer drug defendants to the federal system, a system with more harsh penalties. He/she can also transfer juveniles to the adult courts. For example, African American youths are 16% of all youths, 28% of juvenile arrests, 35% of youths sent to adult criminal courts, and 58% of all youths admitted to state adult prisons. Prosecutorial discretion needs to be under judicial scrutiny (Alexander, 2010).

The early trajectory of juvenile crime and early felony convictions in racial/ethnic minorities leads to a neighborhood environment of criminals. In some communities, for example Chicago, 55% of the African American adult male population and 80% of the adult African American workforce have a felony record (Alexander, 2010).

These criminal offenders, when released from incarceration, tend to return to the high crime neighborhoods from which they came, neighborhoods characterized by poverty and few job opportunities. As felons they cannot obtain government subsidized housing for five years. They are also not eligible for Medicaid unless they are found to be disabled (usually mentally). Without a job and a source of housing many spend their nights "couch surfing" and their days returning to their criminal activities to earn a living. As single adults, unless they are disabled, they are not eligible for Medicaid, even though they have high rates of diseases. The criminal elements in communities of color create negative role models for the youths in those communities as it relates to personal health behaviors and crime.

Not surprising, juvenile crime by race/ethnicity seems to mirror adult crimes in their distribution. African American youths in 2008 were arrested for 67% of all juvenile robberies, 58% of murders (80% of the juvenile deaths were with firearms), 45% of motor vehicle thefts, 42% of aggravated assaults, and 37% of forcible rapes (Puzzanchera, 2009). These crimes are primarily "black on black" crimes because, in part, of racial residential segregation. Females, disproportionately youths of color, accounted for 30% of juvenile arrests (Puzzanchera, 2009).

Youths in general experience a greater exposure to violence and crime than do adults. The National Survey of Children's Exposure to Violence conducted in 2008 found that in the previous year 46% of all children had been exposed to a physical assault, 25% experienced property victimization, 25% witnessed a family assault or community violence, and 6% had been exposed to sexual victimization (Puzzanchera, 2009). These rates are all increased in racial/ethnic segregated neighborhoods. In areas of high levels of violence, violence can "function as social currency, being used to earn and maintain respect and resolve conflicts" (Taxman, Byren, & Pattavina, 2005, p. 60). Thus, not surprisingly, youths and adults in segregated neighborhoods are frequently physically bullied and assaulted with weapons (Finkelhor, Turner, Ormrod, & Hamby, 2009). These experiences result in considerable physical and mental health morbidity in the form of acute and chronic stress.

Social Determinants Mechanisms of Action on Health Status

Racial/ethnic discrimination is at the core of the discrimination exposure of various racial/ethnic groups in society, resulting in inadequate access to essential material, psychological, social and health care resources (Meyers, 2009). The lower social status of racial/ethnic minorities creates and maintains an absence of power over and power to do much about the psychosocial adversities they confront on a daily basis (Krieger, 2008).

The thread that runs through all of the social determinants affecting health disparities is stress. Racial/ethnic minorities experience a greater number of uncontrollable negative life events and more frequent exposure to generic life stressors (i.e. financial, relationships, educational, occupational, etc.). As adolescents, the experiences of racism begin to manifest themselves phenotypically through external attributes such as anger, conduct problems, delinquent behaviors, lowered self-esteem, and depression. However, long before external attributes resulting from racism are visible there are already harmful changes to these youths not visible to society. The acute and chronic stresses of the mothers are likely having effects on the fetuses in utero. These effects of stresses continue in infancy and childhood, altering the central nervous system and many other bodily functions. Recent research regarding the social and behavioral environmental effects on the functioning of chromosomes is leading us to new understandings of how the social experience of racism is experienced as major long-term somatic changes. These changes in the body are not changes to the genetic code (DNA), but are epigenetic changes (Meaney, 2010). Epigenetic changes are chemical modifications to parts of chromosomes (i.e., methylation of the cytosine ring of DNA or acetylation of the histone proteins which are part of the chromosomes) such that segments of the DNA no longer function (transcription is shut down) (Szyf, McGowan, & Meaney, 2008).

Chronic racism has deleterious outcomes by altering the dynamic functioning of multiple physiological systems of equilibrium in the body (allostasis). The acute and chronic bouts of racism create high levels of prolonged stress and wear and tear on the body (allostatic load), and such stress levels are known to be epigenetic mechanisms that alter body functioning (McEwen 1998). The brain responds to stress by sympathetic nervous system activation (fight or flight syndrome). The hypothalamic-pituitary-adrenal (HPA) axis is also activated leading to the hypothalamus releasing adrenocorticotropin hormone releasing factor (ACTH-RF) which stimulates the pituitary gland to release adrenocorticotropin (ACTH), and in response to ACTH the adrenal glands release glucocorticoids (i.e., cortisol) which mobilizes glucose and fatty acids into the blood to be used for energy by the muscles (McEwen, 2000). Peripheral blood vessels constrict, blood pressure rises, and respiratory and heart rates increase in response to these hormonal changes. The increase in cortisol reduces the responsiveness of the

immune system and inhibits the inflammatory response.

Unfortunately, chronic stress starting at birth (and possibly in utero) results in a dysregulated HPA axis resulting in inappropriate (i.e., excessive) physiological responses to future stressors and an acceleration of the normal aging process (weathering) and an earlier onset of diseases and aging (Geronimus 1992). The dysregulated HPA axis places excessive demands on the cardiovascular system which contributes to heart disease. Chronic excess corticosteroids increase pressure on the vascular system and reduces the responsiveness of the immune system, increasing susceptibility to infections and reducing natural killer cells (NK cells are part of the immune system) which help provide surveillance against the growth of cancer cells. Thus, it should not be surprising to find that many of the major diseases affect African Americans about a decade before the same diseases affect Whites and that African Americans have a life expectancy that is 4 to 6 years less than Whites (Harper, Lynch, Burris, & Davey-Smith, 2007). In fact, if African Americans died at the same rate as Whites there would be about 90,000 fewer African American deaths each year (Woolf et al., 2004).

A further complication to well-being can be caused by how individuals react to the stressors they face. Because of the neighborhood environments and economic status of many young racial/ethnic minorities they may deal with their stresses in less healthy ways. Health risk behaviors, including smoking, minimal exercise, poor diet and obesity, early sexual activity and teenage pregnancies have all been found to have a similar underlying theme, in part, stress inducing environments (Figure 3).

Interventions to Reduce Racial/Ethnic Health Disparities

The solutions for reducing racial/ethnic health disparities requires that both poverty and racism be central themes for interventions. There can be no effective fight against racism without an equally insightful attack on poverty. Finding effective solutions to poverty is inherently difficult because many Americans buy into the American cultural theme of individualism. This concept is centered on self-discipline, personal responsibility, self-reliance, self-determination, and limited government interventions. In contrast, social justice suggests that all members of society should be guaranteed minimal levels of income, basic housing, education, food, and health care. The moral focus needs to be on a shared responsibility for the conditions that exist in a society. Political conservatives tend to resist this view of a "moral economy of interdependence" (Robertson, 1999, p. 124).

The points of potential intervention are more numerous for poverty than they are for discrimination. I will briefly review the variables which could be included as part of a comprehensive change to help reduce poverty in America. The topics are not in any particular order of importance and the topics identified are not meant to be all inclusive. Expansion of Head Start and Early Head Start should be done

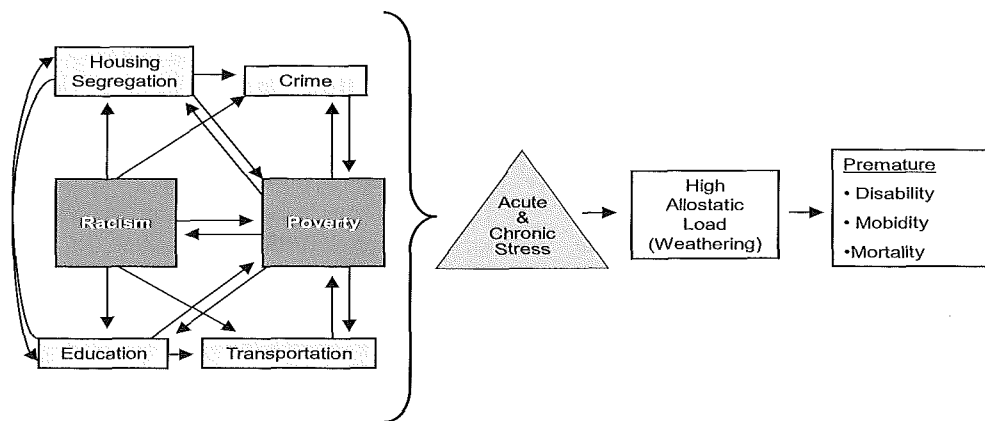


Figure 3. Social determinants' mechanism of action on health status

immediately to make them available to every disadvantaged child (Horn, 2008). Such a change greatly increases the chances that all students will be successful in school and can graduate from high school. Reverse the trend in high schools of a one-track system for all students to be prepared for entry into colleges. We need good career-oriented vocational education programs, currently found in more affluent, suburban neighborhoods, for all youths who desire an alternative path. To be really effective such programs need to be tied to formal paid apprenticeships (Horn, 2008). Require that all schools have a coordinated school health program (i.e., school health services, comprehensive health education, mental health and social services, etc.) to improve the health and health literacy of American youths. A specific focus of the school health program must be interventions to reduce out-of-wedlock teenage pregnancies and an expansion of school-based health clinics. Typically, 82% of the 750,000 adolescent pregnancies per year are unintended (Finer & Henshaw, 2006). Increase the number of community based extra-curricular activities in disadvantaged communities to provide safe and structured relationships with adult role models. Provide support to help create healthy marriages by reducing penalties characteristic of many current welfare programs (Horn, 2008). Robert Lerman (1996) has found that poverty would be reduced by 80% if single mothers married males of the same race, age and education levels.

We need to expand a variety of public assistance programs *to make work pay*, to use a phrase from former President Clinton. We need to increase the minimum wage to a livable wage and index the wage to inflation. The Earned Income Tax Credit program for low-income families needs to be expanded so that workers without children would be eligible (Blank, 2008). Single adult low income workers should be eligible for Medicaid if their employer does not offer insurance for their employees. All children, at birth, should be enrolled into Medicaid with automatic renewal to age 22 unless parents opted out because of private insurance coverage. This would eliminate the current rationing by difficulty that occurs with the current Medicaid programs. Increase the upper wage limit for Social Security Benefits taxed to \$1 million to maintain

the solvency of Social Security. To reduce segregation in government housing, funding for subsidized housing should be by enhanced housing vouchers. This would permit a greater geographic dispersion of the of the poor into mixed-income neighborhoods and potentially increase their human capital (Haskins, 2008). We need to further expand child care support for women who work in low-skilled jobs because stable and low-cost child care remains a barrier to work for many low-income mothers (Blank, 2008). Improve the Food Stamp program (Supplemental Nutrition Assistance Program) by making it more acceptable to the public and more easy to enroll in from computers at home. All low-income workers should be automatically enrolled in the program (Haskins, 2008).

An examination of the U.S. judicial system finds the policy of prosecutorial discretion, especially as it relates to the War on Drugs, needs to be under formal judicial scrutiny. While the vast majority of illicit drug users are White, the majority incarcerated for drug crimes are African Americans. In some communities, the majority of the adult African American male work force are felons (Alexander, 2010). Incarceration of African American males increases child poverty rates. Thus, drug incarceration should be only for serious drug offenses.

Addressing the issue of discrimination, more specifically racism, is a more difficult task. People are not born racist, it is a learned belief system. Thus, schools and community organizations need to take formal actions to teach about racism and the broader topic of discrimination. We need more research on effective programs that reduce discrimination. We need to be supportive of affirmative action programs. Affirmative action is about amending past injustices in an attempt to create a more level playing field. We also need targeted recruitment programs in higher education to increase the number of racial/ethnic minorities graduating from college and from graduate schools. For the foreseeable future, racial/ethnic disparities will continue to be a feature of American life. Our goal is not to create a colorblind society, but rather to see each other for the unique contributions they bring to the social fabric of our society (Alexander, 2010). What we

cannot afford to do is continue to have so many who choose to be blind to the injustices and suffering of others.

Conclusion

In conclusion, simply focusing health education and health promotion programs on a standard set of personal risk factors (i.e., smoking, drinking and obesity) will not eradicate racial/ethnic health disparities. We need to understand the reasons for why racial/ethnic health disparities have been with us for a very long time, and the primary reasons are differences in social determinants of health across the life course. To provide access to health care for all Americans is the moral and just thing to do, regardless of their ability to pay for the care, but simply providing access to care will not significantly reduce racial/ethnic health care disparities. The negative socioeconomic status gradient in relation to racial/ethnic health disparities means that broader policy changes are likely to be more effective in reducing disparities by impacting a larger segment of society.

Health educators need to be as involved in health policy activities as they are in designing, conducting, and evaluating health education programs. They need to be familiar with formulation of health policies and comfortable in engaging in political processes (i.e., lobbying) in a variety of settings, including local communities and in legislative settings to effect needed changes in the social determinants affecting racial/ethnic health status disparities.

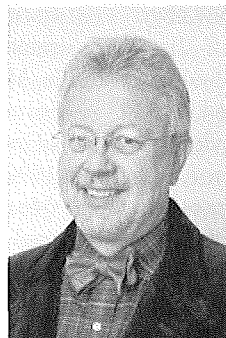
The cumulative impact of negative experiences over the life course are of central importance in developing interventions to eliminate, or at least greatly reduce, the factors that disproportionately impact risk inequities affecting racial/ethnic minorities. Transdisciplinary efforts are needed to rectify the injustices in social and health policies that negatively influence racial/ethnic minorities. Policies to reduce racial/ethnic health disparities will need to address the following types of issues: child care for low socioeconomic working mothers, early childhood education interventions, educational interventions to reduce racism, increase vouchers for quality public housing, expand Medicaid to nonresident low-income fathers who pay child support, increase the minimum wage to a living wage, improve the quantity and quality of urban mass transit, support affirmative action programs to amend past injustices, and target recruitment of racial/ethnic minorities into college health programs. The task of reducing health disparities is daunting, the resources needed are extensive, and the time commitment will take years. As health educators we will need to become comfortable with delayed gratification for assessing change when change on a social scale is our objective.

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James H. Price