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EMPLOYMENT CONDITIONS AS A SOCIAL DETERMINANT OF HEALTH IN LATINO POPULATIONS: POLICY INTERVENTIONS USING THE WHO SOCIAL DETERMINANTS MODEL

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The World Health Organization (WHO) Commission on Social Determinants of Health has defined *employment conditions* as one of the nine social determinants of health status of the general population (WHO, 2005).[1] In this chapter we analyze this factor in the Latino labor force and delineate intervention recommendations to improve Latino workers' occupational health. An increasing body of social science literature proposes

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[1]*Social determinants of health* are defined as major influences in health of populations from across the social and economic spectrum that affect the circumstances in which people live and work. The nine social determinants of health chosen by the World Health Organization (2005) are: (a) poverty and its manifestations; (b) inequity; (c) globalization; (d) food insecurity; (e) social exclusion and discrimination; (f) inappropriate housing; (g) safeguarding of early childhood development; (h) employment conditions, and (i) insufficient quality of health systems.

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that structural social inequality factors, including community factors, are strong and consistent determinants of disparities in health (Williams, 2003). Employment conditions include an external contextual domain composed of structural/community factors and an internal domain consisting of the exposure–disease spectrum (Moure-Eraso, 2006), both of which we examine as determinants of the gradient of health status in the Latino workers population. The most recent demographic profile of the Latino labor force in the United States and statistical evidence of the disparities in Latino occupational-induced mortality and morbidity are also presented. Interventions are discussed using the conceptual framework of the relationships between structural, community, and individual determinants of health inequalities developed by WHO (2005), and recommendations for future studies are provided.

DEMOGRAPHICS OF LATINO OCCUPATIONAL HEALTH DISPARITIES

Demographic data on the U.S. Latino population is presented in this section with details on the topics of temporal demographic changes, poverty and economic characteristics, leading causes of death, and occupational injury and diseases.

Demographic Changes

Immigration trends in the last decades of the 20th century have produced the most dramatic changes in the ethnic composition of the U.S. population since the first decades of that century (Brown, 2003). According to the latest data presented by the reputable Pew Hispanic Center (2013), there are approximately 41.7 million foreign-born Latino persons in the United States, of whom approximately 11.7 million are undocumented. It is estimated that the foreign born share of the nation's population will exceed historic highs between 2020 and 2025, reaching 15%. The historic peak shares were 14.8% in 1890 and 14.7% in 1910. The United States receives approximately 1 million immigrants each year, including both legally admitted and undocumented entrants who later receive amnesty and legal residence. Most of these recent immigrants are of working age (18–64 years old), and 95% live in metropolitan areas (Brown, 2003; Kandula, Kersey, & Lurie, 2004; National Research Council, 1996; Pew Research Center, 2008; Pransky et al., 2002). Foreign-born workers also are employed in the most hazardous industries, including agriculture, construction, and manufacturing, comprising 29%, 23%, and 19% of the U.S. workforce in these sectors, respectively (U.S. Census Bureau, 2011).

Today, Latinos are the fastest growing ethnic group and the largest minority group in the United States. Despite significant undercounting issues by the Census Bureau, they account for approximately 17% (51.9 million) of the U.S. population, and it is expected that 60% of the nation's population growth from 2005 to 2050 will be due to Latinos (National Research Council, 2003; Pew Research Center, 2008, 2013). When compared with other Hispanic country populations in North, Central, or South America, Latinos in the United States (or *Hispanic Americans*) rank among the top. In 2005, Hispanic Americans ranked fifth (37 million) among Latin American country populations, Brazil and Mexico being the largest with 182 and 106 million, respectively. By 2050, Hispanic Americans are projected to increase to 103 million, moving up to the third position in the ranking following Brazil and Mexico with estimated populations of 250 and 147 million, respectively (Economic Commission for Latin America and the Caribbean, 2002; U.S. Census Bureau, 2011). In addition, almost 36% of the U.S. Latino population is foreign born with Mexico, El Salvador, and Cuba being the countries of origin of the large majority (Pew Research Center, 2013).

Unfortunately, the majority of Latinos have been trapped within current work systems that do not offer decent and safe conditions of work. External factors, including structural and community factors, intensify the impact of unsustainable work systems on the well-being of millions of Latinos living and working in the United States.

Poverty and Economic Characteristics

There is vast evidence regarding the relationship between factors such as substandard living conditions, lifestyle factors, and lack of preventive services and increased risk of work injury and disability. Latinos may be at greater risk for occupational injuries and illnesses because of limited economic and political resources and poor living or working conditions (Pransky et al., 2002). In recent past decades, the poverty rate for Latinos has been consistently 2.5 times the rate for Whites. Latinos and African Americans, the groups that consistently have had the highest poverty rates of all ethnic/racial groups, shared the same highest rate in 2000, or 22% (LaVeist, 2005). Latino males are 1.5 times more likely to be unemployed and to be among the working poor than White males (De Jong & Madamba, 2001).

Likewise, according to the 2008 Pew Hispanic Center/Robert Wood Johnson Foundation Latino Health Survey, the percentage of Latinos who had no health insurance coverage was 60% for Latinos who were not citizens and not legal permanent residents and 28% for Latinos who were U.S. citizens or legal permanent residents—compared with the 17% reported for the general U.S. population. Considering that employment is the most important

social conditioner for having access to health services in the United States, these medical care data reflect Latinos' inadequate employment conditions with regard to basic benefits such as health care—with the unauthorized immigrants being the ones in the most vulnerable situation.

An analysis of recent socioeconomic and health and safety data reveals that immigration status might be a significant risk factor in occupational health. Workers whose country of origin is not the United States have shown higher rates of work-related injuries and illnesses. Data show, for example, that among Latinos, the living and working conditions faced by those who are foreign born are significantly poorer. The percentage of Mexicans living in poverty in the United States is 1.5 times higher than the percentage of Mexican Americans (Katz & Stern, 2006). Immigrant underemployment is greater than that of the native born. Foreign-born Latinos are more likely to be engaged in high-risk occupations, with limited access to appropriate health care for work injuries. Census data from 1995 through 2000 showed that 59% (or 2,440) of the 4,167 fatal work injuries among Latino workers involved workers who were born outside of the United States. Moreover, the fatality rate for foreign-born Latinos (1996–2000) was 6.1 per 100,000 compared with a rate of 4.5 per 100,000 for native-born Latino workers. The rate for all workers over this same period was 4.6 per 100,000. Data from the Bureau of Labor Statistics (BLS) revealed that fatalities involving foreign-born Latinos in 2005 reached 625 fatal work injuries (compared with 292 for U.S.-born Latinos), up from 596 in 2004 (BLS, 2006).

Leading Causes of Death

Table 2.1 presents the leading causes of death for Latino and White males in 2002. The leading causes of death for Latino males in the first three age groups (working ages 15–34 years old) include accidents (unintentional injuries, including work-related injuries), assaults (homicide), and intentional self-harm (suicide). The death rates from assaults for Latinos are higher than the rates for Whites across all the age groups. The human immunodeficiency virus (HIV) is among the top three causes of death for Latinos in the 35-to-44 age group. The HIV death rate for Latinos is significantly higher than that for Whites. Death rates from accidents for Latinos are similar for all age groups, with an average of 48 deaths per 100,000. For workers age 45 and older, cancer and heart disease are the two major killers, with rates increasing over 400% from the previous age group. Working conditions are also recognized contributors to cancer mortality and heart disease, and that relationship might help explain the drastic increase of these two rates (Karasek & Theorell, 1990).

TABLE 2.1
Death Rates for the Leading Causes of Death for Latino and White Males in Selected Working Age Groups, 2002

	15–19 years		20–24 years		25–34 years		35–44 years		45–54 years		55–64 years	
Cause of death	Latino	White	Latino	White	Latino	White	Latino	White	Latino	White	Latino	White
Diseases of heart	1.6	2.2	3.4	3.3	6.1	8.8	**20.6**	**39.7**	**80.5**	**128.6**	**256.0**	**324.0**
Malignant neoplasm	4.9	4.2	5.5	5.9	6.3	9.1	18.4	30.5	**78.4**	**121.8**	**254.3**	**386.0**
Accidents (unintentional injuries, including work)	**45.8**	**51.0**	**60.0**	**66.4**	**43.0**	**49.3**	**48.5**	**54.7**	**48.7**	**52.3**	**43.5**	**43.5**
Cerebrovascular diseases	—	0.3	—	0.7	1.5	1.2	5.1	4.2	18.6	12.9	**45.0**	**35.6**
Diabetes	—	—	—	0.5	0.9	1.6	4.1	5.3	16.7	14.3	**58.9**	**39.6**
Chronic liver disease	—	—	—	—	1.6	1.2	13.5	9.7	44.2	27.1	**60.0**	**33.2**
Assault (homicide)	**25.5**	**8.2**	**32.9**	**12.9**	**19.8**	**8.9**	12.1	6.8	9.1	—	—	—
Chronic lower respiratory diseases	—	0.4	—	—	—	—	—	—	—	8.8	17.5	46.0
Human Immunodeficiency Virus (HIV)	—	—	—	—	5.1	3.3	**20.1**	**11.6**	23.1	9.8	15.0	—
Intentional self-harm (suicide)	**9.1**	**13.4**	**11.9**	**22.0**	**10.7**	**21.6**	11.2	26.2	11.3	27.0	—	24.3

Note. Bold numbers indicate substantial differences between Latinos and Whites. Adapted from "Deaths: Leading Causes for 2002," by R. N. Anderson and B. L. Smith, 2005, *National Vital Statistics Reports, 53*(17), pp. 23, 53–54. Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, 2005. In the public domain.

Occupational Injuries and Diseases

Latinos are frequently relegated to the most hazardous jobs. There is no doubt that the conditions of work and pay that they confront are unsatisfactory and represent serious hazards to their health and safety, especially in the construction, agricultural, and service industries. Language difficulties or workplace discrimination may result in inadequate safety training. If hurt on the job, immigrants may be less likely to obtain appropriate health care and may have increased risk for prolonged disability. The situation is exacerbated by inadequate health care benefits, lack of knowledge and awareness of available health services, and cultural barriers such as language preference and cross-cultural differences to accessing needed care (Pransky et al., 2002).

Latinos have higher rates of work-related fatal injuries than non-Latinos, as shown in Table 2.2. Unfortunately, fatal injuries for Latinos have been consistently increasing. More recent BLS data reveal that a total of 917 Hispanic or Latino workers suffered fatal injuries in 2005, up from 815 deaths in 2000. Foreign-born Latinos are exposed to the most hazardous jobs and consequently will be highly represented in the fatalities that belong to "hazardous" events (falls and contact with objects or equipment), as well as the known hazardous industry sectors such as agriculture and construction (see Table 2.3). For foreign-born Latinos, almost one out of three fatal occupational injuries occurs in construction (vs. 9% for U.S.-born Latinos). Likewise, almost 20% of these injuries take place in agriculture (vs. 9% for U.S.-born Latinos). All these numbers reveal the critical need to design effective interventions in these two industry sectors and revise current health and safety regulations targeted to this vulnerable population.

TABLE 2.2
Numbers and Rates per 100,000 of Fatal Occupational Injuries for Latino Workers and Non-Latino Workers in the United States, 1995–2000

	Latino workers		Non-Latino workers	
Year	Number	Rate	Number	Rate
2000	815	5.6	5,068	4.2
1999	730	5.2	5,292	4.4
1998	707	5.2	5,314	4.5
1997	658	5.1	5,561	4.8
1996	638	5.3	5,535	4.8
1995	619	5.4	5,628	4.9

Note. From *Safety Is Seguridad* (p. 54), the National Research Council, 2003, Washington, DC: National Academies Press. In the public domain.

TABLE 2.3
Percent Distribution of Fatal Occupational Injuries for All Latino Workers, Foreign-Born Latino Workers, and U.S.-Born Latino Workers by Event and Industry Sector (1995–2000)

Frequency and percent for events and industry	All Latinos	Foreign-born Latinos	U.S.-born Latinos
Number	4,167	2,440	1,727
Percent	100	100	100
Event			
Transportation incidents	34	30	39
Assaults and violent acts	19	19	19
Contact with objects or equipment	17	19	15
Falls	16	18	12
Exposure to harmful substances	11	11	10
Fires, explosions	3	3	4
Industry			
Agriculture, forestry, fishing	15	19	9
Mining	3	2	4
Construction	28	31	23
Manufacturing	10	11	9
Transportation, public utilities	12	11	13
Wholesale trade	4	4	4
Retail trade	10	10	11
Finance, insurance, real estate	1	1	2
Services	12	10	14
Government	5	1	10

Note. From *Safety Is Seguridad* (p. 62), the National Research Council, 2003, Washington, DC: National Academies Press. In the public domain.

In addition, Latino males have a higher relative risk of nonfatal injury compared with all workers in each major industry sector (see Table 2.4). As reported by Richardson, Ruser, and Suarez (2003), this suggests that Latino workers tend to work in riskier jobs in each industry division.

STRUCTURAL, COMMUNITY, AND INDIVIDUAL FACTORS IN OCCUPATIONAL HEALTH OF LATINO WORKERS

The examination of employment conditions as causes of incidence of occupational disease and disease gradients among Latino workers is an exercise of social epidemiology. In this case, social epidemiology studies the manner in which the specific living environment of the Latino worker could affect the personal and collective health of his or her community. It must incorporate health status and the specific Latino living environment. We also have to examine how social policies impact cultural groups differently. But in addition

TABLE 2.4
Relative Risk of Nonfatal Occupational Injury and Illness for Male Workers by Race and Industry Division (1998–2000)

	All	White Non-Latino	Black Non-Latino	Latino
Total	1.12	1.06	1.39	1.50
Agriculture service, forestry, and fishing	1.69	1.47	1.77	2.11
Construction	1.70	1.68	1.76	1.80
Durable goods	1.30	1.26	1.46	1.76
Nondurable goods	1.11	1.03	1.26	1.48
Transportation and public utilities	1.67	1.56	2.11	2.16
Wholesale trade	1.70	1.63	2.84	2.32
Retail trade	0.94	0.94	1.14	0.98
Finance, insurance, and real estate	0.32	0.25	0.53	0.84
Service industries	0.65	0.55	1.01	1.15

Note. From *Safety Is Seguridad* (p. 68), the National Research Council, 2003, Washington, DC: National Academies Press. In the public domain.

to "mapping" relationships, we also need to elucidate issues of accountability and agency (Krieger, 2001). This means that it is necessary to identify the sectors in society (agency) that are responsible for the development of social policies that Latinos benefit from and consider the impacts (accountability) on health of such policies. For example, workers compelled to work with highly toxic substances (i.e., asbestos) for the benefit of corporations do this at a high risk to their health. This risk might be expressed as unaccounted for costs to the workers in the form of losses of health and income due to toxic exposures. *What causes* the population patterns of health and disease and *who is responsible* are central questions when examining the occupational health of Latinos (Krieger, 2001).

An important question related to the health of Latino workers is how employment conditions contribute to the distribution of psychosocial insults (causing stress, mental and heart disease). Other critical dimensions are how these conditions interact with pathogenic physical, chemical, or biological agents and how psychosocial insults are shaped by social political and economic policies (Cassel, 1976). The impact of these dynamics is different among various communities and causes inequalities in health. The identification of the causes of these inequalities will determine the nature of the interventions necessary to alleviate the differences in health status. Some of the external (meaning structural, such as regulations on working conditions) social determinants that influence occupational health are underemployment, income

inequalities, lack of access to health systems (vs. access to health insurance), loss of social support because of movement of populations, lack of influence in society because of deficiencies in social participation, and social isolation (resulting from language and cultural barriers; Lahiri et al., 2006). We are proposing that these circumstances are a result of social discrimination that contributes to health inequalities that are recurrent in the occupational status of Latino workers.

Structural Factors

Examples of social (structural) factors with relevance to health are as follows:

- nature of labor markets, the presence of large informal sectors;
- existence of vulnerable population groups, for example, immigrant, illiterate, unskilled workers;
- existence of institutions of worker representation;
- quality of government regulatory structures;
- quality of educational systems; and
- linkages between employment and provision of health services.

All of these social factors shape employment effects on health and safety inequity (Hege, Vallejos, Apostolopoulos, & Lemke, 2015). These external factors may act directly by modulating exposure to hazards. For example, the nature of the labor market will determine the degree and strength of the labor organizations (unions). Strong unions will negotiate with employers for safer working conditions or access to health care, thereby alleviating the impact of unhealthy working conditions. Also, the social factor *quality of governmental regulatory structures* could, in turn, determine the quality and strength of occupational health and safety laws, improving the possibilities of prevention of accidents and occupational diseases. External factors may also act indirectly. For example, external economic factors might be conducive to generating higher incomes in the worker population; this in turn will determine access to better food, better shelter, better health services, and other health-related items (Lahiri et al., 2006).

Major influences on the health of any population come from across the social and economic spectrum that affects the circumstances in which people live and work. Social determinants of health are social conditions under which humans work and live (Tarlov, 1996). Employment conditions of Latino workers are one of the social determinants of health that explain cases of disease and incidence of disease, as well as the shifting gradients of disease. This has been recognized by international organizations at the level of all workers (WHO,

2005). Employment conditions, however, cannot be "boxed" exclusively within person–hazard interactions in worksites. External social determinants, such as current applicable immigration laws and health and safety regulations, need to be taken into consideration as relevant to working conditions. The boxed approach has tended to marginalize employment conditions as social determinants of health within a narrow workplace environment (Moure-Eraso, Flum, Lahiri, Tilly, & Massawe, 2006; Nuwayhid, 2004). The examination of worksite condition variables (chemical exposure, ergonomic hazards, and work organization) is only the first step in the investigation of health impacts. If we are searching for more comprehensive analysis of health determinants, it is necessary to also view worksite conditions in conjunction with external contextual variables (see the partial list of social factors previously mentioned). In the examination of these contextual external variables, it seems to us, a key contribution to the occupational health of Latino workers could be their marginal social status, which causes a substantial disparity in health compared with the general U.S. population (see Tables 2.1, 2.2, and 2.3).

Community Factors

An understanding of the occupational health status of Latinos is gained by identifying not only the specific worksite conditions but also the social context in which work takes place. This context includes the social relationships and shared interests that define the various Latino communities in the United States. Understanding comes from both the internal domain of occupational health (worksite exposure–disease spectrum) and the external contextual domain (social context, regulatory and legal climate, population characteristics; Nuwayhid, 2004). For example, the impact of shared knowledge of decent and safe employment conditions can have significant effects on workers' defensive behaviors when facing workplace hazards. This networking occurs among Latino day laborers who share communal and living experiences that help them become aware of better potential job choices.

The social context is substantially determined by the relative political power of the interacting social institutions. The reality of power in occupational settings is that necessary changes for risk protection are not under the control of the individual worker, but of the employer. Therefore, to achieve improvements in working conditions, the worker must devise and implement a collective approach (e.g., unionization). Because worksites are social institutions, changes almost always involve social groups—managers, supervisors and regulators, or workers and their organizations. Collective representation provides a readily available avenue for individuals to obtain change (Levenstein, Wooding, & Rosenberg, 2000).

In dealing with exposure to hazards, collective interventions create a supportive structural context for implementing many solutions. Two chief collective interventions that have proven effective are (a) government agencies charged with monitoring, regulating, and/or conducting education around workplace hazards; and (b) unions or producer associations undertaking similar actions (Dembe, 1996; Silverstein, Frumkin, & Mirer, 2000). The two can be particularly effective in combination. This requires that the community of workers develop a social strategy on hazard controls, have the political will to act to improve the risky conditions, and have the basic technical knowledge concerning their legal rights and occupational health issues (Moure-Eraso, 1999). A community (collective) approach beyond the power of single individuals seems to be an effective strategy to improve working conditions (Silverstein et al., 2000). An example is the unionization of workers, as has occurred to some extent in construction. Another important expression of collective interventions is the actions of employer associations' initiatives on workplace safety and health. By engaging employer association affiliates on the development of consensus on the implementation of safety interventions, positive changes could be achieved.

Work organization may also be a contributor to psychosocial stress and eventually chronic disease (Karasek & Theorell, 1990). Again, to effect any change in work organizations requires a community intervention by a collective. It could be unionized workers' actions, interventions of progressive employers' organizations, or intervention of a government agency (usually requested by the organized workers).

Individual Factors

In the United States, employment is the most important social condition for access to health services (Levenstein et al., 2000; Taylor & Murray, 2000). This could be in the form of some health insurance, workers' compensation, or ability to pay for services out-of-pocket. Employment is the primary means available of securing access to goods and services. For Latino workers, the first priority becomes employment. The priority of secure employment overrides any concern for the potential negative health impact that working conditions can inflict. In the United States, Latino workers most affected are a subgroup of mostly foreign-born Latinos. As mentioned previously, individual workers (particularly those that have an undocumented immigration status) lack the power to improve employment conditions on their own. Individual-level factors that are amenable to change, such as years of education, health behaviors, attitudes, et cetera, are heavily conditioned to opportunities that society and the community make available to individuals.

However, isolated individuals, on their own, cannot force society to offer them desirable socioeconomic opportunities and cannot bring about systematic changes. Organized collective action in the political arena, which includes the formation of social coalitions, has proven to be an effective vehicle to generate desirable socioeconomic opportunities and improve working and employment conditions (Silverstein et al., 2000).

The U.S. Latino worker tends to hold a high proportion of substandard jobs characterized by low wages; low activity control; high psychological demands; low peer and supervisory support; and unsafe, dangerous conditions (Lahiri et al., 2006). These job characteristics are defined by the current work organization system in a given workplace, and there is very little possibility for improvements through individual action. Interventions at the individual level do not seem to be effective in generating systematic change.

INTERVENTIONS AT THE STRUCTURAL, COMMUNITY, AND INDIVIDUAL LEVELS TO IMPROVE LATINO WORKERS' HEALTH

WHO's (2005) Commission of Social Determinants of Health developed a conceptual framework (model) of the relationships between structural (community) and intermediate determinants of health inequalities. We modified that scheme to make it specifically relevant to employment conditions and Latino health (see Figure 2.1). Structural determinants are those that generate social stratification in society. They include such traditional factors as income, education, and labor market (Lahiri et al., 2006).

The modified WHO model presented in Figure 2.1 shows two major groups of determinants that affect health and health equity—structural (external) and intermediate (internal). WHO constructed its framework with structural determinants (left side of Figure 2.1) as a spectrum of factors, eventually determining that collective health cannot be directly measured at the individual level (political–institutional environment, labor market, educational opportunities). These determinants flow from the social structure of a community (first column far left) toward intermediate determinants on the right (chemical exposures, work organization) and are modified by an individual's social status (ethnicity, gender). Intermediate determinants shape differences of exposure in the workplace. They flow from the social structures and, in turn, are the determinants of differences in health and well-being. A group's health and well-being, as well as health inequities, are defined then by the confluence of the structural variables with the intermediate variables modified by individual social status. The objective of the framework is twofold. First, it "maps" the relationships between the determinants, and

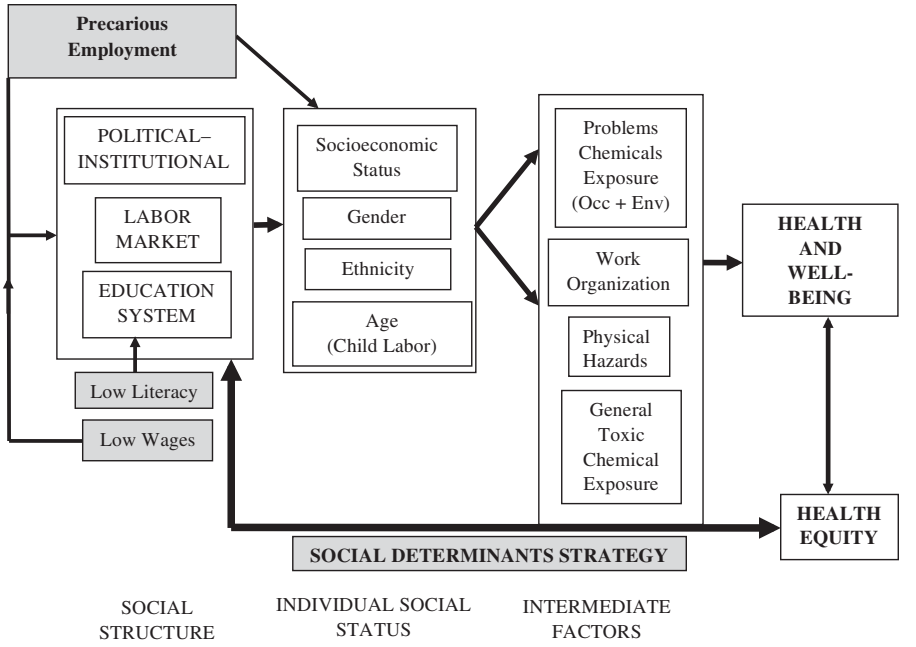

Figure 2.1. World Health Organization (WHO) social determinants framework of employment conditions and health applied to Latino workers. From *Towards a Conceptual Framework for Analysis and Action on the Social Determinants of Health* (Discussion Paper for the Commission on Social Determinants of Health) (p. 17), by the World Health Organization, 2005, Washington, DC: World Health Organization. Copyright 2005 by the World Health Organization. Adapted with permission.

second, it permits one to visualize the entry points of proposed interventions recommended to address Latino health inequalities (see Figures 2.2 and 2.3).

The interventions recommended are designed to decrease the differential exposures and vulnerabilities that are hypothesized to decrease the differential health consequences of the factors identified. It is expected that the sum of all the interventions to decrease negative health impacts (summarized in Figures 2.2 and 2.3) would in turn achieve decreases (upward) in social stratification by improving the social status of Latino workers.

Structural Determinants Interventions

Figure 2.2 identifies interventions at the social structural level. The oval boxes represent structural interventions, such as strengthening of adequate regulations and improvement of social facilities (education, health

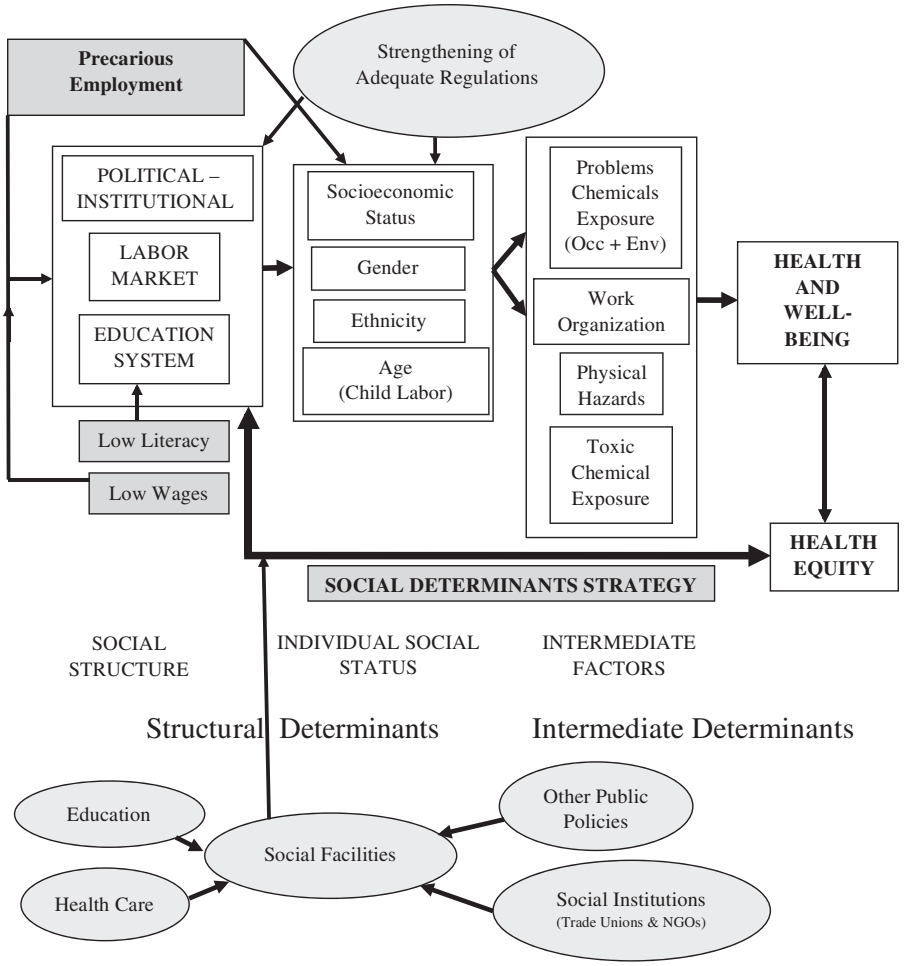

Figure 2.2. Structural interventions entry points in the World Health Organization (WHO) framework of employment conditions and health of Latino workers (interventions in oval shapes). From *Towards a Conceptual Framework for Analysis and Action on the Social Determinants of Health* (Discussion Paper for the Commission on Social Determinants of Health) (p. 17), by the World Health Organization, 2005, Washington, DC: World Health Organization. Copyright 2005 by the World Health Organization. Adapted with permission.

access). All these interventions will ultimately affect socioeconomic status. For example, the promulgation of new humane immigration policies (new laws and regulations) will require the engagement of political and community institutions and eventually will contribute positively to changes in the social structure. Further, the example of unionization is a typical local development in which individuals organized collectively to effect changes. There

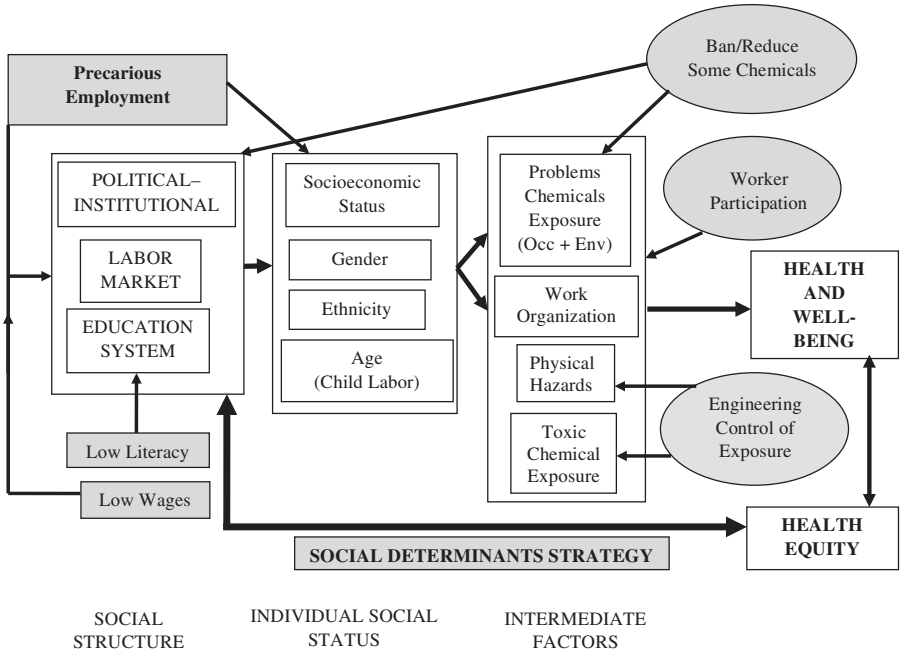

Figure 2.3. Intermediate interventions entry points in the World Health Organization (WHO) framework of employment conditions and health of Latino workers (interventions in round shapes). From *Towards a Conceptual Framework for Analysis and Action on the Social Determinants of Health* (Discussion Paper for the Commission on Social Determinants of Health) (p. 17), by the World Health Organization, 2005, Washington, DC: World Health Organization. Copyright 2005 by the World Health Organization. Adapted with permission.

are other social action interventions to be contemplated, such as the control of underemployment, the narrowing of income inequalities (makes health insurance affordable), the counterbalancing of loss of social support caused by movement of populations, and the addressing of social isolation (language and cultural barriers). All these interventions deal with the lack of influence of Latinos as a group in the United States.

Improvements in working conditions (wages and benefits) are the outcome of a particular approach to national economic and social policy. Some improvements are related to human rights: social justice, equality, elimination of discrimination, freedom of association, collective bargaining, and so on. To be effective, actions and policies to improve employment conditions must be an integral part of a country's economic and social policy. These policies need to be carefully planned to have coherent and coordinated results.

Intermediate Determinants Interventions

Figure 2.3 identifies the interventions recommended at the level of intermediate factors to decrease differential exposures and their consequences. The intervention label *ban/reduce some chemicals* refers to scientifically recognized problem substances in the workplace, such as carcinogens, that should be banned or systematically reduced to eliminate or substantially reduce disease. There are two points of entry for this intervention: at the workplace level (intermediate factor) and at the political–institutional level of workplace regulation (social structure factor). Workplace organization and engineering control of exposures are two other interventions that have as point of entry the workplace and address intermediate factors.

Agents Responsible for Latino Health Inequalities

Figures 2.1, 2.2, and 2.3 may be described as webs of causation or conceptual frameworks of variables and interventions. Webs of causation tend to give descriptive snapshots of interrelationships of structural, community, and individual variables. However, those relationships accept social structures and interrelations as "natural environment," whereas in reality they are social constructs defined by relationships of power and class in the society. These webs do not show this power relationship or provide an explicit accounting of social agency (Moure-Eraso et al., 2006). We should address not only philosophical concerns but also those issues of accountability and agency determined by the power relationships between institutions and social classes (Krieger, 2001).

To claim exclusive emphasis in "fundamental social causes" does not necessarily offer principles for systematically thinking through *whether* specific public health and policy interventions are needed to curtail social inequalities in health and, if so, *which* ones (Krieger, 2001). We have to guard against interventions that are reduced to general exhortations to "secure adequate living standards" or "reducing economic inequality" presented as "policy" solutions. Paraphrasing Krieger (2001), what is needed is a simultaneous analysis of the biologic expressions of social relations with an analysis of how social relations influence our most basic understandings of biology. *What* causes the population patterns of health and *who* is responsible become the central questions (Krieger, 2001).

SUMMARY OF FINDINGS AND INTERVENTIONS

Table 2.5 describes interventions to address four key problems/interventions in which external, structural, and community determinants are addressed as strategies to improve Latinos' occupational health (Lahiri et al.,

TABLE 2.5
Examples of Problems and Interventions at the Structural Community Level to Improve Latino Occupational Health

	Nature of problem	Nature of interventions	Policy intervention targets	Examples of cases
1	Exposure to hazards	Collective interventions/ regulations in workplace safety and health	Structural: Political, legislative Community: Unionization, participate in work organization	Toxic use reduction regulations, substitution for safer materials, demand engineering controls of hazards
2	Lack of access to health care	Extension of health service access to a wider range of employment states	Structural: Propose legislation for universal insurance Community: Network with supporters, collective bargaining	Mobilize community for legislation on insurance health coverage, political coalition formation with unions and community organizations
3	Insufficient income (i.e., insufficient consumption) related to unemployment and underemployment	Job creation or improvement of job compensation	Structural: Political work to increase wages Community: Open new lines of work for nonnative workers	Campaigns to increase minimum wage to apply to all workers, organize recent immigrants and day laborers
4	Vulnerable population (child labor, female workers, illiterate and unskilled labor) informal sector (day labor)	Universal education, access to credit, social entrepreneurship	Structural: Literacy and H&S training, provide funds for entrepreneurship Community: Organize cooperative efforts among peers	Codify human and economic rights of day laborers, provide loans and credits for education and starting of small enterprises

Note. Other examples can be found in Hege, Vallejos, Apostolopoulos, and Lemke (2015). From "Employment Conditions as Social Determinants of Health. Part I: The External Domain," by S. Lahiri, R. Moure-Eraso, M. Flum, C. Tilly, R. Karasek, and E. Massawe, 2006, *New Solutions*, *16*, p. 272. Copyright 2006 by Sage Publications. Adapted with permission.

2006). The interventions described were designed for the general working population, but they also apply quite properly to the Latino working population. Four relevant problems of the Latino community are analyzed: (a) workplace exposures, (b) lack of access to occupational health care, (c) insufficient income (underemployment), and (d) vulnerable population (informal and unskilled workers). The nature of the interventions and the policy targets (structural and community determinants) corresponding to each problem are described in columns 2 and 3. Specific examples of interventions are also listed in column 4 of the table.

Systematic implementation of these interventions would improve the health status of Latino workers in the United States. The final goal to improve Latinos' social status is achievable mostly through social structure improvement interventions similar to the ones discussed in the table.

The first step in starting a general improvement of social status could be the improvement in wages paid to Latino workers (increase in minimum wage). An increase in wages will have as consequences both the expansion of access to health services (health insurance) and the improvement of access to job training and health education. Once a relatively higher social status is achieved, individual factors can be addressed—for example, efforts to recruit Latino workers to enroll in educational programs to decrease alcohol and tobacco use.

CONCLUSION: WHAT IS TO BE DONE? REFLECTIONS ON IMPLEMENTATION OF INTERVENTIONS

Interventions at the intermediate level at the point of production seem like obvious ones to implement (Figure 2.3). For example, the substitution of toxic chemicals in industrial production (banning of asbestos) and worker participation on work organization tasks affect the problems noted in rows 1 and 2 of Table 2.5. However, these interventions do not happen as natural evolutionary developments in societal progress. They are the consequence of political actions that eventually define a social–legal framework developed by consensus. Changes will only happen if this consensus changes. The changes in employment and working conditions must be structural to ultimately affect the working conditions.

The entry points of interventions shown in Figures 2.2 and 2.3 and the examples in Table 2.5 describe specific actions on structural employment conditions that will affect the workplace and ultimately the health disparities in Latino workers. Structural problems described in rows 3 and 4 (insufficient income workers and vulnerable population, respectively) require interventions at the national level, such as the increase of minimum wage legislation, to provide mechanisms for collective organization of informal workers and temporary employment. Both of these two groups (informal and temporary

workers) are classified as "precarious" employees and reflect the realities of a substantial sector of Latino workers in the United States. Four specific legislative interventions to address precarious employment structural problems were described recently by WHO (2008). They are as follows:

- to provide incentives for collective organization (unionization and collective bargaining),
- to establish regulatory controls on outsourcing and job subcontracting,
- to promote regulations to avoid discrimination toward foreign-born workers and immigrants, and
- to create incentives and sanctions for violation of these regulations.

These interventions imply an engagement of the forces in civil society willing to challenge the current imbalance of power relationships in the United States that allow the marginalization of immigrants. These imbalances of power exist at four levels:

- power imbalance of Latino immigrants denied basic human and civil rights because of their immigration status,
- power imbalance between unions representing Latino workers and corporations that employ them,
- power imbalance of Latino immigrants within U.S. political parties, and
- power imbalance of Latino immigrants' community organizations in civil society.

Given this disparity in power, the engagement of the state as the regulator of societal inequalities is suggested as the intervention of choice by legislating the four points just discussed. Legislation is the tool available to address power imbalance. The state must exert its function to promote an equal or a more just power distribution through the implementation of social policies, such as the regulation of labor market characteristics, and serve as the purveyor of public health for all. But the government's task to promote equality is fully dependent on the political will of civil society to compel the state to act. Latino organizations as part of civil society have this task of developing that political will through political engagement of their members and by joining with organizations and institutions that support a just society.

REFERENCES

Anderson, R. N., & Smith, B. L. (2005). Deaths: Leading causes for 2002. *National Vital Statistics Reports*, *53*(17), 1–89. Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr53/nvsr53_17.pdf

Brown, M. P. (2003). An examination of occupational safety and health materials currently available in Spanish for workers as of 1999. In National Research Council, *Safety is seguridad: A workshop summary* (pp. 83–92). Washington, DC: National Academies Press.

Bureau of Labor Statistics. (2006). *Census of fatal occupational injuries*. Retrieved from http://www.bls.gov/iif/oshcfoi1.htm

Cassel, J. (1976). The contribution of the social environment to host resistance: The Fourth Wade Hampton Frost Lecture. *American Journal of Epidemiology*, *104*, 107–123.

De Jong, G. F., & Madamba, A. B. (2001). A double disadvantage? Minority group, immigrant status, and underemployment in the United States. *Social Science Quarterly*, *82*, 117–130. http://dx.doi.org/10.1111/0038-4941.00011

Dembe, A. (1996). *Occupational diseases*. New Haven, CT: Yale University Press.

Economic Commission for Latin America and the Caribbean. (2002). *Data and statistics*. Retrieved from http://www.cepal.org/en/

Hege, A., Vallejos, Q. M., Apostolopoulos, Y., & Lemke, M. K. (2015). Health disparities of Latino immigrant workers in the United States. *International Journal of Migration, Health and Social Care*, *11*, 282–298. http://dx.doi.org/10.1108/IJMHSC-06-2014-0024

Kandula, N. R., Kersey, M., & Lurie, N. (2004). Assuring the health of immigrants: What the leading indicators tell us. *Annual Review of Public Health*, *25*, 357–376.

Karasek, R., & Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstruction of work life*. New York, NY: Basic Books.

Katz, M. B., & Stern, M. J. (2006). *One nation divisible: What America was and what it is becoming*. New York, NY: Russell Sage Foundation.

Krieger, N. (2001). Theories for social epidemiology in the 21st century: An ecosocial perspective. *International Journal of Epidemiology*, *30*, 668–677. http://dx.doi.org/10.1093/ije/30.4.668

Lahiri, S., Moure-Eraso, R., Flum, M., Tilly, C., Karasek, R., & Massawe, E. (2006). Employment conditions as social determinants of health. Part I: The external domain. *New Solutions*, *16*, 267–288. http://dx.doi.org/10.2190/U6U0-355M-3K77-P486

LaVeist, T. A. (2005). Disentangling race and socioeconomic status: A key to understanding health inequalities. *Journal of Urban Health*, *82*(Suppl. 3), iii26–iii34. http://dx.doi.org/10.1093/jurban/jti061

Levenstein, C., Wooding, J., & Rosenberg, B. (2000). Occupational health, a social perspective. In B. Levy & D. Wegman (Eds.), *Occupational health: Recognizing and preventing work related disease and injury* (4th ed., pp. 27–50). New York, NY: Lippincott Williams and Wilkins.

Moure-Eraso, R. (1999). The convergence of labor and public health: A natural and critical alliance. *Journal of Public Health Policy*, *20*, 310–318. http://dx.doi.org/10.2307/3343403

Moure-Eraso, R. (2006). Employment conditions: Reviewing evidence and promoting action. In Commission on Social Determinants of Health, World Health Organization, and Pan American Health Organization, *Final report: Regional consultation on the work of the Commission on Social Determinants of Health* (pp. 34–36). Retrieved from http://www2.paho.org/hq/dmdocuments/2009/ResCD47-inf1_Eng.pdf

Moure-Eraso, R., Flum, M., Lahiri, S., Tilly, C., & Massawe, E. (2006). A review of employment conditions as social determinants of health part II: The workplace. *New Solutions*, *16*, 429–448. http://dx.doi.org/10.2190/R8Q2-41L5-H4W5-7838

National Research Council. (1996). *Statistics on U.S. immigration: An assessment of data needs for future research*. Washington, DC: National Academies Press.

National Research Council. (2003). *Safety is seguridad: A workshop summary*. Washington, DC: National Academies Press.

Nuwayhid, I. A. (2004). Occupational health research in developing countries: A partner for social justice. *American Journal of Public Health*, *94*, 1916–1921. http://dx.doi.org/10.2105/AJPH.94.11.1916

Pew Hispanic Center. (2008, August). *Hispanics and health care in the United States: Access, information, and knowledge*. Retrieved from http://pewhispanic.org/files/reports/91.pdf

Pew Hispanic Center. (2013). *Statistical portrait of Hispanics in the United States, 2011*. Retrieved from http://www.pewhispanic.org/2013/02/15/statistical-portrait-of-hispanics-in-the-united-states-2011/

Pew Research Center. (2008, February 11). *U.S. population projections: 2005–2050*. Retrieved from http://www.pewhispanic.org/2008/02/11/us-population-projections-2005-2050/

Pew Research Center. (2013). *Population decline of unauthorized immigrants stalls, may have reversed*. Retrieved from http://www.pewhispanic.org/2013/09/23/population-decline-of-unauthorized-immigrants-stalls-may-have-reversed/

Pransky, G., Moshenberg, D., Benjamin, K., Portillo, S., Thackery, J. L., & Hill-Fotouhi, C. (2002). Occupational risks and injuries in non-agricultural immigrant Latino workers. *American Journal of Industrial Medicine*, *42*, 117–123.

Richardson, S., Ruser, J., & Suarez, P. (2003). Hispanic workers in the United States: An analysis of employment distributions, fatal occupational injuries, and nonfatal occupational injuries and illnesses. In National Research Council, *Safety is seguridad* (pp. 43–82). Washington, DC: National Academies Press.

Silverstein, M., Frumkin, H., & Mirer, F. (2000). Labor unions and occupational health. In B. Levy & D. Wegman (Eds.), *Occupational health: Recognizing and preventing work related disease and injury* (4th ed., pp. 715–727). New York, NY: Lippincott Williams and Wilkins.

Tarlov, A. (1996). Social determinants of health: The sociobiology translation. In D. Blane, E. Brunner, & R. Wilkinson (Eds.), *Health and social organization* (pp. 71–93). London, England: Routledge.

Taylor, A. K., & Murray, L. (2000). Minority workers. In B. Levy & D. Wegman (Eds.), *Occupational health: Recognizing and preventing work related disease and injury* (4th ed., pp. 679–687). New York, NY: Lippincott Williams and Wilkins.

U.S. Census Bureau. (2011). *2010 census data, employment*. Retrieved from http://www.census.gov/2010census/data/

Williams, D. R. (2003). The health of men: Structured inequalities and opportunities. *American Journal of Public Health*, *93*, 724–731. http://dx.doi.org/10.2105/AJPH.93.5.724

World Health Organization. (2005). *Towards a conceptual framework for analysis and action on the social determinants of health* (Discussion Paper for the Commission on Social Determinants of Health). Retrieved from http://archived.naccho.org/topics/justice/resources/upload/WHOCommissionTowardsConceptualFrame.pdf

World Health Organization. (2008). *Employment Conditions Knowledge Network (EMCONET). Final report to the WHO Commission on Social Determinants of Health: Employment conditions and health inequalities*. Retrieved from http://www.who.int/social_determinants/resources/emconet_scoping_paper.pdf