REVIEW ARTICLE

Occupational risks and risk perception among Hispanic adolescents

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ABSTRACT Although child labor laws are designed to protect youth from serious injury in the workplace, there are a number of other factors that influence the effectiveness of occupational injury prevention including adolescent risk perception, failure to understand worker rights, and lack of experience. The growing adolescent Hispanic population in the U.S. is of particular concern because cultural and economic barriers have the potential to further influence these young workers' safety. A greater emphasis on research among Hispanic adolescents is crucial to minimizing adolescent worker injury. To propose effective age and culturally appropriate intervention programs, it will be necessary to understand the knowledge, attitude and beliefs regarding occupational risks within the working adolescent Hispanic community.

Occupational behavioral risk factor perception of Latino adolescents

According to the United States National Institute for Occupational Safety & Health (NIOSH), there are approximately 5.5 million working children between 12 and 17 in the United States. Although there are child labor laws that are designed to protect children from critical injury in the workplace, there are a number of other factors that influence the effectiveness of occupational injury prevention including adolescent risk perception, failure to understand worker rights, and lack of experience. Since 1999, NIOSH has targeted youth workers as a critical population for investigation within their Fatality Assessment and Control Evaluation (FACE) program. The goal is to identify high-risk occupations and provide intervention that will prevent future occurrences of death or serious injury (11). Although adolescent occupational injury has been a topic of investigation for many years, research often fails to address the risk perceptions of adolescents on the job.

The growing adolescent Hispanic population in the U.S. is of particular concern because cultural and economic barriers have the potential to further influence these young workers' safety (note that the term Hispanic refers to all native Spanish-speakers). Data from the U.S. Census Bureau indicates that over 10% of the U.S. population is foreign born, with 40% entering the country in the last decade (17). The U.S. Census Bureau also estimated that in 2002 there were approximately seven million unauthorized immigrants in the U.S., where many are likely to be of Hispanic background. There is a documented total of 38.8 million of Hispanic origin living in the U.S. of a total population of 288.6 million (U.S. Census Bureau). Additionally, Hispanics are more likely to pursue high-risk jobs because they are among the most educationally and economically disadvantaged of the immigrant populations; inadequate access to health care further intensifies this problem (17). Those of Hispanic background have a much higher drop-out rate than other ethnic groups and only 57% of

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Hispanics (age 25 and over) have completed high school (U.S. Census).

With few studies completed that focus on Hispanic adolescents, it becomes even more important to investigate the knowledge, attitudes and beliefs of occupational risks, as well as preventative techniques within this population.

Adolescent Occupational Injury

Adolescent work is generally at minimum wage jobs, such as restaurant work, grocery stores, farms or factories. Studies of adolescent injury show a great majority in retail trade, particularly in eating and drinking establishments (5,6,9,13). The retail trade sector employs 58% of teens between the ages of 15 and 17 (25). Although injury risks are uncommonly identified with retail work, the retail trade sector accounts for the largest proportion of nonfatal work-related injuries (25). Of all injuries, males are also more likely to be injured than females (13). In a statewide study in North Carolina, over half of the 700 teens sampled were injured at least once while on the job; the most frequent injury was caused by a burn (6). Hazards of those in construction or agriculture were ladders, scaffolding, forklifts, tractors, or riding mowers, as well as working around loud noises (6). An additional investigation of occupational adolescent injuries in Minnesota showed 13% of adolescents reported burn injury, of which 44% suffered permanent scarring (9). Part-time or full-time work at irregular hours also puts young workers at risk of fatigue, increasing their susceptibility to occupational related injury.

These examples provide a brief glimpse of adolescent occupations and the associated risks. However, many states in the U.S. lack a comprehensive surveillance system of adolescent occupational injury (5). To specifically address this critical population, NIOSH began investigating adolescent occupational fatalities. From May 1986 to February 2002, the FACE program investigated 59 adolescent occupational deaths collected in 26 different states. The majority of these fatalities occurred in three industries: agriculture, retail trade, and construction (11). According to FACE investigations, the following were common contributors to worker deaths: failure to recognize hazardous situations, absence of safety programs, employer failure to comply with OSHA (Occupational Health and Safety Adminstration) standards or child labor laws, failure to provide safety equipment, lack of appropriate supervision, and learning unsafe behaviors from coworkers (11). Another documentation from 1980 to 1989 recorded 670 adolescent occupational deaths, mainly involving injuries associated with motor vehicles and electrocution (3). The American Centers for Disease Control (CDC) estimates that about 70 adolescents die each year from occupational injury.

To our knowledge, few studies regarding occupational injuries of adolescents have been specifically focused on the Hispanic population. A study was done in a South Texas middle school and high school that was predominantly low-income Hispanic families (21,22). The middle school students were included because younger adolescents may have a greater risk of injury due to lack of job experience, as well as cognitive, psychosocial, and developmental immaturity. Interviews were conducted with 7,302 sixth-eighth graders in school districts located in small towns and rural areas of South Texan counties. Results of the middle school study showed that 56% reported working eight hours per week, while 25% reported occupational injury (22). From surveys of 3,565 high school students in 23 different schools, one third reported working more than 20 hours per week, with the dominant job being restaurant work (21). Both studies showed a significant correlation between intensity of work, especially during the academic year, and increased worker injury (21,22). Results also confirmed previous studies that males are approximately two times more likely to be injured on the job in comparison to females (21). Although it was hypothesized that Hispanics had a greater likelihood to worker injury, the studies actually documented a slightly greater amount of worker injury among non-Hispanic adolescents (21,22). However, it is important to note that Hispanic youth were more susceptible to injury requiring increased medical attention (21). These results are directly related to the type of work; it was found that Hispanics were twice as likely to work in a restaurant than non-Hispanic adolescents, which is a job involving high risk activities (21). Although this investigation involved a community of predominantly lower socioeconomic Hispanics, the studies do not give comprehensive assessment of a possible differential risk among Hispanic adolescents and other ethnic groups.

A further study, although not specifically focused on Hispanic adolescents, surveyed 516 working Hispanics in a community just south of Washington, DC (17). The surveys indicated that safety training was often not provided, and rarely given in Spanish. Additionally, work time lost per injury was 13.75 days per year, which is significantly higher than the national average of only five days (17). Furthermore, 60% of those with work-related injury cases failed to file a worker's compensation claim, caused by situations such as employer discouragement, failure to provide information, or illegal employment (17). Under another study of Hispanic residential construction workers in North Carolina, the following risk factors were

documented: lack of regular safety training, inadequate communication in Spanish, possible discriminatory treatment by employer, worker's lack of knowledge of U.S. safety standards and laws, and financial needs taking precedence over safety (18). Although these study groups do not represent Hispanic adolescents, many of these same risk factors present in the adult working Hispanic population are probably similar or greater among working adolescents in the community.

In addition to the typical adolescent jobs of retail and restaurant work, unique to the Hispanic population is migrant/seasonal work. It is estimated that 7% of the agricultural workforce is composed of adolescents (14). The agricultural workforce is also estimated to be 30% indigenous, creating an increased language barrier because training cannot be understood in English or Spanish. Adolescents in agriculture are at further risk under child labor provisions as well because agricultural child labor laws differ from nonagricultural laws. Children aged 14 to 15 may perform any nonhazardous farm job outside of school hours, children aged 12 to 13 may be employed on their parents' farm or elsewhere with consent, and even children aged 10-11 may be employed in hand-harvest short season crops (10). Normally, youth are covered under child labor laws until age 18; while in agriculture the age is only 16 (11). Four focus groups with 68 Hispanic migrant workers (age range of 16-62) in South Georgia revealed that living conditions were poor, youth were at increased risk of disease, TB, parasites, and pesticide poisoning, and the workers had little knowledge of medical availability and symptoms of common sicknesses or diseases (16). Although Perilla's focus group study does not give concrete prevalence data of associated risks of migrant farm work, it is a glimpse of migrant camp conditions, to which adolescents are often exposed to while working in agriculture. Furthermore, adolescents working in agriculture generally have an education level of only sixth grade or less; therefore, they are rarely aware of concepts such as disease prevention and health precautions (16).

It is obvious that all Hispanic-working adolescents cannot be grouped into one category, as the working population is highly heterogeneous. Migrant farmworkers and day-laborers may be recent immigrants experiencing cultural adjustment and language barriers. However, there is an ever increasing number of U.S. raised, educated bilingual Hispanic adolescents that may be more culturally adjusted to life in the U.S. This particular group has the potential to be drastically different from recent Hispanic immigrants in job selection, view of occupational risk perceptions, education level, and socioeconomic status. If the U.S Hispanic population continues to divert, differences in the Hispanic work force are likely to become more pronounced in the future, making research important not only along ethnic lines, but also important for minimizing adolescent occupational injury within the Hispanic population.

Adolescent Development

Adolescents are also a particularly vulnerable population because they are in the process of undergoing a period of critical development. During adolescent years the reproductive, respiratory, skeletal, immune, and central nervous system develop (8). The biology of the adolescent's body provides an opportunity for toxicants to cause amplified or lasting damage (8,24). For adolescents working in agriculture, those that are exposed to organophosphate pesticides may be more vulnerable. Chronic effects may include asthma, cancer, or neurobehavioral dysfunction; subtle alterations may become manifested in the future (12).

Environmental and family factors also affect adolescents' developmental stages and have the potential to greatly influence adolescents' behavior and cause future problems (23). Risk factors during developmental stages can result in a series of negative consequences and may result in an overall reduced level of health (23). Some of these risk factors may originate from unstable family environments or adolescent maladjustment, which arise or result from factors such as early family responsibility, lower educational achievement, and taxing work or economic events (23). The totality of these stresses may put adolescents at an increased risk of injury at work and result in lasting physical or mental impairment and disability.

Recent studies have investigated the psychological consequences of adolescent part-time employment, challenging previous views that work experience is the most important factor in the socialization of youth to adulthood (2). In general, all factors related to work intensity tend to be negative. For example, working more than 20 hours per week disengages adolescents from school and further provides an opportunity for delinquency and drug use (19).

Protecting Youth at Work (National Research Council, 1998) summarizes the effects of working extensive hours during the school year: increased alcohol, tobacco and drug use, minor delinquency, lack of adequate sleep and exercise, increased rates of dropping out of high school, and decreased overall educational attainment. It is important to note that reducing work hours or leaving the work force leads to increased school performance, but does not reverse previous negative consequences (19). Therefore, it is important to find a work experience that maximizes the benefits of youth work, yet does not promote further

risk of injury or developmental problems.

Adolescent Injury Predictors and Risk Perceptions

When looking at adolescent injury, there are a number of risk factor predictors. In one study, five general categories for predictions of risk factors were identified: demographics, personality, employment, health, and substance abuse (7). Within these categories the significant predictors of work injuries among adolescents were gender, negative affectivity, job tenure, exposure to physical hazards, excessive workloads, job boredom, poor physical health, and on-the-job substance abuse (7). Frone's study documented the following trends in predictors of adolescent occupational injury. Adolescent male injury was found to be more common than female injury; however, results indicated that males are more likely to report on-the-job injury due to greater exposure of occupational hazards and an increased level of on-the-job substance use. Adolescents of high negative affectivity often selected jobs of greater risk. Environmental conditions with physical hazards, heavy workloads, or boring tasks put adolescents at increased risk for injury. Both poor health and depression were found to be related to occupational injury. Finally, direct measurement of on-the-job substance use greatly increases susceptibility to injury. These predictors of adolescent injury should be a key piece of information when developing age-specific intervention and training programs.

Few previous studies have specifically documented occupational risk perception of adolescents; although one was found to actually focus on the Hispanic population's perceptions, it is specific towards farmworker adolescents; therefore, there is lacking data in other occupations. The farmworker study analyzed the risk perceptions of adolescents in agriculture with regard to pesticide exposure (14). It was found that many of these adolescents did not receive pesticide training, nor did they perceive much danger while working in the fields (14).

Additionally, adolescents have a different mentality than adults, making it key to understanding specific adolescent occupational risk perceptions. Previous studies attributed adolescent risk taking to invulnerability or willingness to take risks (4). However, in a comparative study between adults and adolescents, Cohn et al. (1995) revealed that many adolescents do not perceive their actions as unsafe, but instead minimize the amount of risk associated with periodic activities, such as drug use, intoxication, or reckless driving. In another comparative study of adolescent and adult smokers/nonsmokers, a greater percentage of adolescents perceived their risk of addiction lower than others (1). Adolescents were much more likely to hold an optimistic bias that smoking addiction applies to most people, but not to themselves (1). Occasional risk-taking behavior may not result in injury, but this way of thinking may cause teenagers to misinterpret many types of situations (4). This mode of thinking may be transmitted to the workplace and lead to further injury in adolescents.

Intervention Suggestions

Occupational studies show adolescents are put at risk of injury in the workplace. At the same time, the few available studies focusing on the Hispanic population show the possibility of an additional increased risk on-the-job due to cultural and economic barriers.

Furthermore, the common misperceptions of risk by adolescents in dangerous situations are another factor increasing the probability of occupational injury. From these results, it appears that a greater amount of research among Hispanic adolescents is crucial to minimizing adolescent worker injury, as well as documenting the key differential risks among the heterogeneous group of Hispanic adolescents and other working adolescents. This may include a comparison of worker characteristics, injury rates, risky behavior, and risk perceptions between nonagricultural and agricultural Hispanic workers or among Hispanic adolescents and adolescents of differing ethnic groups. To propose effective age and ethnic-specific intervention programs in the workplace, it is first necessary to analyze and understand the knowledge, attitude and beliefs of occupational risks within varying Hispanic adolescent communities and occupations.

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