



Work Ethic and Cognitive Models of Work: Contractors and Workers Perspectives on Elevated Injury and Fatality among Latino Workers in Small-Scale Residential Construction

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ABSTRACT

Purpose. Small-scale residential construction contractors are of great interest to the field of construction safety because young Latino workers in this subsector have among the highest rates of injury and fatality. This study sought to determine how contractors and workers employed by small contractors think about the nature of their work and their work ethic. **Design.** Qualitative semi-structured interviews were undertaken with n=4 Latino contractors and n=8 Latino workers in the framing and roofing trades of small-scale residential construction. Interviews were recorded, transcribed verbatim, and analyzed for dominant themes and patterns. **Findings.** Contractors and workers held a comparable work ethic. Contractors' and workers' status in the U.S. as an "immigrant" shaped how they thought about the nature of their work and contributed greatly to their work ethic. Because of their immigrant status, both contractors and workers believed they had to "work harder" and "faster" than their American counterparts to demonstrate their value. However, "working hard" and "fast" impeded safety. Workers were often willing to forgo safety precautions and discounted injury risk believing it is at odds with making money needed to support themselves here and family in Mexico. Additionally, traditional Latino cultural norms shaped their belief systems about safety risks, for example, through superstitious beliefs and a "stubborn" nature. **Limitations.** The generalizability of study findings is unknown because the data are from a small, regional sample of contractors and workers in two trades of small-residential construction. **Implications.** Safety interventions in framing and roofing trades of small-scale residential construction must acknowledge the immediate survival demand (i.e., the need to support two families) that underlies worker behavior in the industry. The possibility of potential injury is an important, but comparatively distal threat relative to the short-term financial loss.

Keywords: small-scale residential construction, immigrant Latino workers, worker safety, injury inequalities

INTRODUCTION

In 2015, Latino immigrants accounted for 28.6% of the United States (U.S.) construction workforce, an increase from 9% in the 1990s (White and Neely, 2004). Recent research showed that Latino immigrants were nearly 30% more likely to suffer work-related injuries than non-Latino white American workers (Dong, Men and Ringen, 2010). According to occupational health disparities research, characteristics such as age, being an immigrant, a racial minority or a temporary worker, can increase the risk for occupational injuries (CDC, 2011). Subsequently, a recent report highlighted the need to focus collectively on the complex system of multiple risk factors contributing to disproportionately greater prevalence of accidents in young, immigrant Latino construction workers, rather than focusing on the individual risk factors (National Institute for Occupational Safety and Health and American Society for Safety Engineers [NIOSH & ASSE], 2015).



Young, immigrant Latino construction workers often belong to multiple vulnerable populations, which increases their risk for work-related injuries on the construction site (NIOSH & ASSE, 2015). In 2013, Latino construction workers were the only racial/ethnic group with an increase in the number of U.S. workplace fatalities (Byler, 2013). Several key factors contributing to the increased risk of injury include language, cultural and structural barriers, communication issues and lack of supervision (Al-Bayati and Abudayyeh, 2016). One of the most prevalent risk factors is lack of safety, whether due to lack of safety training or lack of adherence to safety protocols (Hung *et al.*, 2013). Previous research has indicated that immigrant Latino construction workers are reluctant to adopt safety procedures or undergo safety training as they believe it is of limited value (Hung *et al.*, 2013; Arcury *et al.*, 2014). However, a recent qualitative exploration found that Spanish-speaking immigrant construction workers attributed their safety experiences to employers' unwillingness to enforce safety regulations and employer discrimination due to legal status or lack of documentation (Díaz Fuentes *et al.*, 2016).

Previous research indicates that small scale employers and contractors are less likely to enforce safety regulations amongst their workers compared to larger construction companies (Díaz Fuentes *et al.*, 2016). Such evidence suggests that there is a complex system of influencing factors that contribute to the lack of safety measures adopted on the construction site. However, the literature that guides our understanding of targeting safety behavior change is under-developed. Research has called for programs to be evaluated to improve safety behaviors (Arcury *et al.*, 2014) and for training programs to be culturally tailored to the specific population (Dong, Men and Ringen, 2010). Recent evidence has outlined the need for further investigation into the role of both structural (i.e. regulations) and individual factors (i.e. literacy) affecting attitudes towards the trade-off between job security and occupational safety (Díaz Fuentes *et al.*, 2016). Collectively, such evidence suggests there is a need to investigate the construction workers' perspectives on safety measures, to appreciate the interacting influences motivating their safety decisions.

Theoretically, previous cognitive models on health self-management can be applied to the competing influences contributing to Latino workers' injury risk on the construction site. The interaction between health, illness and healthcare-related aspects of society has been previously described as a cultural system (Kleinman, 1978) linking beliefs, experiences, behavior, decisions, practices and evaluations. The cultural system as it relates to health can provide guidance for how we might better understand cognitive models underlying safety-related decisions (or lack thereof). Additionally, the Common-Sense Model of Self-Regulation (CSM) is a conceptual framework that provides understanding of the perceptual, behavioral and cognitive processes involved in health self-management (Leventhal, Phillips and Burns, 2016). Concepts in the CSM are multi-level, representing the mechanisms and processes underlying self-management of health-related threats, previous histories, and strategies for action and maintenance (Leventhal, Phillips and Burns, 2016). Collectively, such models are useful in thinking about the different factors contributing to Latino workers' cognitive processes about safety and may provide insight into how they think about their work ethic that incorporates safety. Therefore, this study aims to investigate how immigrant Latino construction workers' work ethic impacts how they think about their safety

METHODS

Study design

This research is part of *iPonte Listo!*, a sequential mixed-methods study of occupational safety among immigrant Latino workers in the small-scale segment of the residential construction industry in Tulsa county, OK. The data for this analysis are from the qualitative component of the project including the Latino construction workers and contractors.



Participant recruitment

Recruitment was facilitated by the research teams' previously established relationships with organizations serving the immigrant Latino community. The inclusion criterion for "contractors" in this study was: (1) owner of a construction establishment with fewer than 9 workers for at least 3 years, (2) majority of revenues were from activity in residential construction, and (3) having had one or more immigrant Latino workers for a minimum continuous period of 6 months. The inclusion criterion for "construction workers" in this study was: (1) self-identify as Latino, (2) employed in the residential construction industry for at least 1 year, and (3) worked as a framer or roofer in residential construction for 20 hours or more in the past month. Family members, who were first-degree relatives of an immigrant Latino construction worker were also interviewed, but they have not been included as part of this study. Study participants were recruited by trained bi-lingual study staff.

Data collection

Study procedures were approved by an Institutional Review Board. Data were collected by two trained interviewers from December 2019 through February 2021. Interviews were conducted at locations of the participants' choosing, usually their homes. Prior to any data collection, participants were informed of the purpose of the research and reminded that participation was voluntary. Signed informed consent was obtained from all study participants. Data collection did span the COVID-19 pandemic, resulting in n=22 interviews that were conducted in an in-person, face-to-face environment, and the remainder (n=17) conducted through Zoom. Participants received a \$25 incentive at the end of the interview. Digitally recorded interviews ranged in length from approximately one to three hours.

Interview Content

The goal of the qualitative component was to gain understanding of the knowledge and beliefs surrounding occupational safety and injury held by the workers themselves and their "employer", the contractors. It is important to acknowledge that the workers and contractors often consider their 'boss' to be a figure of authority, or whoever pays them. Therefore, the 'boss' is context specific, dependent on their role. In some cases, the 'boss' is the individual who contracted the work to the contractor. The interview guides for each of these stakeholder groups was distinct, but they shared a common set of content. All interviews began with basic information about the participant. Then the interview moved into questions to probe basic beliefs about hazards confronted by workers in small-scale residential construction, and the perceived causes of common injuries experienced by construction workers including falls from heights, strains, and injuries from equipment.

Analysis

All interviews were digitally recorded. The first 26 interviews (4 contractor, 8 worker, and 14 family members) were transcribed verbatim in Spanish, and then translated into English by a professional transcription service. All investigators reviewed each of these transcripts and determined that theoretical saturation had been reached. However, given the small number of interviews in some segments of the sample (i.e. n=4 contractor interviews), the research team decided to continue interviewing to verify that data saturation had been met. Two bilingual team members reviewed each interview independently to determine if any "new" information was gained and individual case-studies were created. It was confirmed that no new information had been gained. Therefore, the interviews (n=13) were not translated and transcribed. All the translated transcripts were uploaded into NVivo 12 (Version 12 QSR International Pty Ltd. NVivo qualitative data analysis software, 2018) for data management, coding, and to facilitate analysis. A coding dictionary was constructed based on a-priori content underlying the construction of the interview guide (e.g., controllability of injury, beliefs about safety) as well as new ideas that emerged from immersion into the data. Two team members independently coded each transcript. The vast majority of codes had excellent inter-rater



reliability (Cohen's Kappa ranged from 0.8-1.0). Some of the codes had poorer inter-rater reliability, but coding agreement was achieved through discussion.

RESULTS

Participant characteristics

This study included n=8 Latino construction workers and n=4 contractors from framing and roofing trades. This study included n=8 Latino construction workers and n=4 contractors from the framing and roofing trades of. All participants were male, and most participants did not graduate from High School. The contractors ranged in age from 29-34 years and had spent on average 15 years in the U.S. The workers ranged in age from 18-50 years and had spent on average 12 years in the U.S. Full descriptive information for the sample is included in Table 1.

This study elicited two major themes, reflecting the intersection of the association between culture and work ethic. Themes and associated sub-themes are outlined below.

Theme 1. The work ethic of immigrant Latino construction workers is strongly related to their general immigrant status within the U.S.

Many immigrant Latino construction workers in the U.S. are undocumented and construction is one of the few sectors where undocumented immigrants can "make a good living." Therefore, the belief that immigrant Latino construction workers have a work ethic to work fast, with minimal attention to safety risks, is partially a consequence of the vulnerability of their legal status as an immigrant worker in the U.S. This is particularly pertinent given their lack of employment opportunities, and competitiveness from other undocumented workers who would gladly replace them. Participants formed belief systems based on their immigrant status, conveying immigrant-context-specific implications. These indicated that the cultural norms surrounding their work ethic were not solely related to Latino culture, but rather, as a consequence of being an immigrant worker within the U.S. Four sub-themes are discussed below:

Sub-theme A: Immigrant work ethic centers around working hard and fast because working hard and fast is the best policy when you're undocumented

Immigrant Latino contractors and workers collectively portrayed that their work ethic emerged due to their circumstances. In particular, the need to work hard and produce results stemmed from internalized pressure to remain employed. For immigrant contractors and workers, losing their job could result in unfavorable consequences, as they would have few alternative employment options within the U.S., due to their (often undocumented) immigrant status, unlike their American counterparts:

"They [Americans] go to work and take precautions. On the other hand, we only want to push somebody out, so that we can take his place. We always say that Americans don't do anything, but we're wrong. They do things at their own pace, while we rush around killing ourselves to get it done. Latinos don't work slowly. We rush and run." Worker (W)3

The participants suggested that work ethic is not a result of being Latino, but rather, being an immigrant worker in the U.S. For many immigrant workers, they came to the U.S. to work, make money, and provide for their family. Therefore, they are under pressure to work hard and keep their job. This often resulted in working fast, to reduce the risk of being replaced by another worker, contributing to safety risk:

"it would be a little bit difficult to make us change the way we think because it's something deep-rooted with us. It's something cultural about us. We come to this country to work and make money. That's what is in our minds. And since most of the people working in construction make money according to what they do during the day, they work very quickly to finish the job as soon as possible. I think, because of that, workers may neglect safety. They're always rushing." Contractor (C)1



Sub-theme B: Immigrant Latino workers minimized the risks to safety and were more accepting of the potential hazards involved

Participants reflected the thoughts of many within the industry, because whilst there are known risks to safety, the majority of workers do not consider the risks to be of immediate threat to them personally:

"Most of us have a mindset that nothing is going to happen. I'll just get up there, and nothing will happen, or we think, it's not the first time we've done that. Or we say, "I know how to do that." For that reason, we don't use the appropriate equipment." C1

However, whilst they understood that some level of risk is involved in their work, participants discounted the risks in favor of the benefit. In the moment, the benefit of working faster and making more money, out-weighed working slower, or spending time adopting safety behaviors, despite the risk to safety:

"We don't take precautions because we think only about money and don't measure the consequences." W5

"You could train a person, but I think it's very difficult to try to think the way people think. Our mindset is if we work less, we're going to make less. And the equipment is going to hinder us from doing our jobs. For that reason, we don't use it." C1

Furthermore, they considered prior experience to be more protective of risks compared to adopting safety precautions:

"If you tell them to wear a harness, they ask you, "Why? I don't need it. Nothing is going to happen. I've done the same thing 1000 times." C6

Sub-theme C: Working fast and working safely were competing motivations for Immigrant Latino workers

Immigrant Latino workers conveyed financial pressure to make money. In particular, this pressure came from the need to provide for 'two' families, one in the U.S. and one back home:

"In this country, we have responsibilities, not only those of our own. As much as I have responsibilities here, I have responsibilities in my own country, and I have to meet them." W1

In working fast, they were able to make more money, as they were paid by the job. Not only do workers feel pressured to work fast, but contractors also felt pressure to finish the job quickly so that they would continue to be offered jobs by employers or 'bosses'. They eluded to having to maintain the same productivity as when they first arrived in the U.S., and were recognized for working quickly: *"The bosses realized that Mexicans were able to do a good job and do it quicker than anybody else. So, they started to hire us... we were working three of four times harder than the people who had been doing the job. The bosses realized we were more productive and made them more money. So, they started giving us the contracts. Then, it became well-known that we were very good workers. So, now, we want to keep that fame and don't want anybody to out-do us. That creates a problem. Although productivity is high, it interferes with safety. Safety slows you down. We don't want to waste time being safe and have productivity go down." C6*

In many circumstances working fast goes against working safe, because implementing safe working practices takes time (and that time could be spent working):

"Since I'm not going to pay them extra for wearing the protective equipment, they will pay me so they don't have to use it. Really, they say they will pay not to use it, especially the harness because it's very uncomfortable. You don't work the same with the harness on and you lose too much time. Without the harnesses, we can finish a job in two hours. Wearing it, it would take about four or five hours. That's too much time wasted." C1

Sub-theme D: Immigrant Latino workers are less 'protected' due to their legal status compared to other U.S. workers in a similar industry



Participants spoke about their lack of documentation and legal status, which was associated with riskier behavioral choices and contributed to their desire to maximize their monetary gain:

“When we come to this country without documents, we take risks and do whatever is available to us. We want a job and to make good money.” C2

Beliefs like those just described contributed to a feeling that workers needed to prove their worth and ability, as they were competing for jobs with construction workers with legal documentation. They were willing to take additional risks to ensure that they continued to be offered work:

“We don’t want the [boss] to come and see us standing there. We want the [boss] to fire the person standing around. I think it’s because of envy. We think the American is doing less work and getting paid better. So, we want him out of the way. I think that since we invaded this country, we don’t have the right to complain –maybe, we do have rights, but which ones? We come here by running through hills and deserts to get here to work. We’re illegals. So, we don’t have to compare ourselves to an American.” W1

Furthermore, participants eluded to the consequences associated with speaking up if they didn’t feel safe or required protection:

“When I injured my fingers and was taken to the hospital [the doctor gave] me a week’s medical leave... And, then, she extended the medical leave from one week to one month. But, then, I had another problem.. I went to see the doctor and asked her to release me because I wasn’t making enough money. She called the company and made them pay me my 40 hours, plus back-pay. Well, the manager was mad at me. And, anytime I went to pick up my check, he [the manager] threw it at me. He acted like I had done something to him. But I did what I was told to do by the doctor.” W4

Theme 2: Latino-specific cultural beliefs influenced workers’ work ethic

Whilst participants portrayed a work ethic that was strongly related to being an immigrant in the U.S., they eluded to specific beliefs related to Latino culture that helped shape their work ethic. Belief systems that were evidently related to Latino workers as an ethnic group allowed for insight into how specifically Latino norms influence work ethic.

Sub-theme A: Latino cultural norms shaped their belief systems about safety risks

Traditional Latino cultural norms impacted on participants’ belief systems, which shaped their work ethic. For example, some workers were superstitious about talking about the risks of construction work. It was their belief that talking about potential risks could put a curse on them. As a result, this contributed to workers avoiding talking about the potential risks with one-another:

“If you tell them about the possibility of having an accident, they don’t like it. They think you’re putting a curse on them. if you start telling them they could have an accident, they get mad and say you’re wishing them bad luck. It’s a little bit of...superstition” C6

In addition, they conveyed that many workers have a stubborn nature, that is part of their culture. As a result, this contributed to unwillingness to listen to safety information:

“Another problem is that Latinos are very stubborn and want to do things their own way. We want to do things the way we think is right... They take unnecessary risks while they do the job. That’s a situation where you have to battle with them. You tell them not to take those risks and to do things the right way, even if it takes longer. But they don’t listen.” C6

Participants highlighted that Latino workers often have a relaxed attitude towards safety behaviors. Therefore, whilst they are aware that they should implement safety behaviors, the social norm is that it is not necessary to do so:

“The patron’s responsibility is to tell you to wear the protective equipment. It’s up to you whether you do it or not. We’re free. The patron can’t force you to do it. We’re free to do whatever we want... It’s up to you to listen or not” W5

Participants believed that workers were responsible for their own safety. This can be attributed to their prior beliefs of safety. For example, they are less likely to be familiar with employee protections in their home country and therefore do not assume that their bosses have a sense of responsibility:



"If I fall and get injured, somebody else is going to do my job... the responsibility is mine because I have to take care of myself... I, as a worker, have that responsibility. If it were the patron's responsibility, and I had an accident, they'd pay me for that. So, it's not the patron's responsibility. We, as workers, have to take precautions to prevent accidents." W3

DISCUSSION

Construction contractors' and workers' immigrant status within the context-specific setting of the U.S. shaped how they thought about the nature of their work and contributed greatly to their work ethic. Participants discussed their motivations to often overlook safety procedures, which emerged from pressures associated with their situational circumstances. Many immigrants are undocumented and are sometimes illegal workers, therefore they have an underlying self-initiated pressure to work efficiently or risk losing their job. Because of their legal status and education level, losing their job would result in few occupational opportunities, especially in the midst of a national pandemic and anti-immigrant administration. Furthermore, immigrant Latino workers are often financially providing for "two" households, themselves and their own family in the U.S. and their family back in their hometown of origin. Therefore, it should be acknowledged that immigrant Latino workers' drive to work efficiently, be productive and work fast may be a consequence of their situational circumstances. As a result, they are often willing to overlook safety precautions because the benefit of making more money in the short-term outweighs the potential risk of injury.

Whilst the findings in this study are specific to immigrant Latino construction workers in the U.S., parallels can be drawn with other immigrant groups in other locations. A study including undocumented immigrants from Mexico, Central and South America, and the Middle East, found that work ethic was characterized by motivation to make family proud (Autin *et al.*, 2018). Furthermore, a recent systematic review found that immigrants in Europe and Canada were more likely to be employed in jobs that were part-time, with a lower level of autonomy and fewer opportunities for development, despite being over-qualified (Sterud *et al.*, 2018). Such evidence suggests that regardless of the contextual setting, immigrants may be at greater risk of accident or injury because they are faced with a challenging prospect between keeping themselves safe, thereby requiring them to spend time and effort taking safety precautions, with the possibility of losing out on money and risk losing their job, as they are in competition with other workers, and could be easily replaced if they do not prove themselves to be hard workers.

These findings suggest that there are conflicting influences that contribute to lack of safety behaviors adopted on the worksite, contributing to higher rates of injuries in Latino construction workers compared to their American counterparts (Dong, Men and Ringen, 2010). Their situational circumstances encourage them to work faster to make more money. In doing so, they limit their focus on the potential risks. Delay discounting occurs when an individual chooses an immediate, smaller reward, over a larger potential reward over a longer period of time (Rachlin and Green, 1972; Koffarnus and Bickel, 2014). This can be observed in negative behaviors that, although may be potentially rewarding in the short-term, are often detrimental in the long term (Amlung *et al.*, 2017; Bickel *et al.*, 2019). Often, the short-term gain of making more money in a single day, is more rewarding in the participants' immediate future, compared to the possibility of an accident happening at some unknown point. Due to their situational circumstances, workers are willing to discount the risk of accident or injury, as they are focused on working fast to gain financial reward and provide for their family. In addition, the findings suggest that Latino workers are aware that they are taking some risks to their safety, however, Latino cultural norms influence them to be less likely to adopt safer practices. Specifically, workers identified a relaxed attitude towards risk potential, 'it won't happen to me'. In addition, Latino 'stubbornness' was identified. Although they are aware that negating safety precautions carries risk, the competing pressures to work fast, alongside with the social norm that



safety equipment was a choice, not a requirement, contributed to poor adherence of safety precautions.

Implications for research

The findings from this study suggest that the cognitive models underlying beliefs about work ethic are constructed from two distinct cultural contexts. The first is the context-specific norm of being an undocumented immigrant in the U.S. and corresponding challenge of competing for work and retaining employment. The second is the cultural norms related to ethnic groups that exert influence on cognitive models of work ethic. For example, the participants discussed specific Latino cultural norms, such as superstition, clouding their desire to talk about risk of accident or injury. The intersection of such cultural norms has important implications for interventionists attempting to deliver safety behavior change training. A previous review highlighted that many programs targeting immigrant, and specifically Latino workers in high-risk industry settings, do not embrace cultural models (Menger *et al.*, 2016). In line with this, these findings highlight the importance of acknowledging the ethnic group who is being targeted and tailoring the training accordingly. However, this study is limited by the generalizability of study findings, which are unknown because the data are from a small, regional sample of contractors and workers in two trades of small-residential construction.

CONCLUSION

The findings from this study suggest that the intersection of two forms of culture; context-specific culture shared by all immigrants to the U.S., and those distinct to traditional Latino culture contribute to the work ethic and resulting safety behaviors (or lack thereof) of immigrant Latino construction workers. When attempting to deliver safety training, health and safety practitioners should be attentive to the ethnic culture, but also acknowledge the struggles of survival of any ethnic group within the sociocultural norms of the setting. Importantly, this highlights that immigrant workers' work ethic stems from the need to prove themselves to survive in a competitive work environment, or face being replaced.

CONFLICT OF INTEREST

The authors declare there are no conflicts of interest.

FUNDING AND SPONSORSHIP

The research was supported by a grant from the National Institute for Occupational Safety and Health (R01 OH012177).

Table 4: Participant demographic information

# Interview	Age	Years in the US	Gender	Marital Status	Years of Education	Years in Construction
Contractors						
1	34	14	M	Married	High School	10
2	29	10	M	Married	11th grade	9
4	31	19	M	Married	5th grade	11
6	NA	17	M	Married	NA	17
Workers						



1	37	19	M	Divorced	Middle school	18
2	18	2	M	Single	NA	1
3	50	23	M	Married	3rd grade	15
4	38	19	M	Married	8th grade	14
5	25	5	M	Single	Universidad	5
6	20	4	M	Single	9th grade	4
7	31	15	M	Married	High School	15
8	37	9	M	Separated	5th grade	4

REFERENCES

- Al-Bayati, A. J. and Abudayyeh, O. (2016) 'Safety Challenges in the U.S. Construction Industry: The Hispanic Workforce Perspective', Construction Research Congress 2016: Old and New Construction Technologies Converge in Historic San Juan - Proceedings of the 2016 Construction Research Congress, CRC 2016, (May 2016), pp. 2967–2971. doi: 10.1061/9780784479827.295.
- Amlung, M. et al. (2017) 'Steep delay discounting and addictive behavior: a meta-analysis of continuous associations.', *Addiction* (Abingdon, England), 112(1), pp. 51–62. doi: 10.1111/add.13535.
- Arcury, T. A. et al. (2014) 'Occupational safety beliefs among Latino residential roofing workers', *American Journal of Industrial Medicine*, 57(6), pp. 718–725. doi: 10.1002/ajim.22248.
- Autin, K. L. et al. (2018) 'Career development among undocumented immigrant young adults: A psychology of working perspective.', *Journal of Counseling Psychology*. Autin, Kelsey L.: Department of Psychology, University of Florida, P.O. Box 112250, Gainesville, FL, US, 32611, kautin@ufl.edu: American Psychological Association, pp. 605–617. doi: 10.1037/cou0000280.
- Bickel, W. K. et al. (2019) 'Excessive discounting of delayed reinforcers as a trans-disease process: Update on the state of the science', *Current Opinion in Psychology*, 30, pp. 59–64. doi: <https://doi.org/10.1016/j.copsyc.2019.01.005>.
- Byler, C. G. (2013) 'Hispanic/Latino fatal occupational injury rates', *Monthly Labor Review*, 136(1), pp. 14–23.
- CDC, C. for D. C. and P. (2011) *CDC Health Disparities and Inequalities Report — United States, 2011*.
- Díaz Fuentes, C. M. et al. (2016) 'Latino immigrant day laborer perceptions of occupational safety and health information preferences', *American Journal of Industrial Medicine*, 59(6), pp. 476–485. doi: 10.1002/ajim.22575.
- Dong, X. S., Men, Y. and Ringen, K. (2010) 'Work-related injuries among Hispanic construction workers—evidence from the Medical Expenditure Panel survey', *American Journal of Industrial Medicine*, 53(6), pp. 561–569. doi: 10.1002/ajim.20799.
- Hung, Y.-H. et al. (2013) 'Identifying fall-protection training needs for residential roofing subcontractors', *Applied Ergonomics*, 44(3), pp. 372–380. doi: <https://doi.org/10.1016/j.apergo.2012.09.007>.
- Kleinman, A. (1978) 'Concepts and a model for the comparison of medical systems as cultural systems', *Social Science & Medicine. Part B: Medical Anthropology*, 12, pp. 85–93. doi: [https://doi.org/10.1016/0160-7987\(78\)90014-5](https://doi.org/10.1016/0160-7987(78)90014-5).
- Koffarnus, M. N. and Bickel, W. K. (2014) 'A 5-trial adjusting delay discounting task: accurate discount rates in less than one minute.', *Experimental and clinical psychopharmacology*, 22(3), pp. 222–228. doi: 10.1037/a0035973.



- Leventhal, H., Phillips, L. A. and Burns, E. (2016) 'The Common-Sense Model of Self-Regulation (CSM): a dynamic framework for understanding illness self-management', *Journal of Behavioral Medicine*. Springer US, 39(6), pp. 935–946. doi: 10.1007/s10865-016-9782-2.
- Menger, L. M. et al. (2016) 'A guide to the design of occupational safety and health training for immigrant, Latino/a dairy workers', *Frontiers in Public Health*, 4(DEC), pp. 1–11. doi: 10.3389/FPUBH.2016.00282.
- National Institute for Occupational Safety and Health and American Society for Safety Engineers (2015) 'Overlapping vulnerabilities: the occupational health and safety of young immigrant workers in small construction firms.', ((NIOSH) 2015-178), pp. 1–39.
- Rachlin, H. and Green, L. (1972) 'Commitment, choice and self-control', *Journal of the experimental analysis of behavior*, 17(1), pp. 15–22. doi: 10.1901/jeab.1972.17-15.
- Sterud, T. et al. (2018) 'A systematic review of working conditions and occupational health among immigrants in Europe and Canada', *BMC public health*. BioMed Central, 18(1), p. 770. doi: 10.1186/s12889-018-5703-3.
- White, O. R. and Neely, M. (2004) *The Construction Chart Book*. Sixth, CPWR – The Center for Construction Research and Training. Sixth.

W099 & W123 Annual International Conference: 9-10 September 2021

