development of young workers between the ages of 15 and 24, and (4) the range of social and organizational influences that may affect young workers' attitudes and behaviors towards work.

The presentations in this symposium individually and collectively explore these four features of young worker populations as a way of explaining what we know about young workers and occupational health and safety, situating the symposium squarely in the "What does the future hold?" theme of the Work, Stress, and Health 2019 conference. The first presentation by [redacted], PhD, and colleagues explores young workers' experience of workplace aggression. One objective of the authors' national survey was to learn how experiences of workplace violence negatively affect young workers' mental health, work life, and school life. The findings from this study urge employers to take preventative action such as instituting a workplace violence prevention programs and providing age-appropriate training to young workers.

Following this, the second presentation by [redacted], PhD, and [redacted], PhD, builds on the focus of the experience of workplace aggression among young workers. In particular, the authors focus on young workers' willingness to report physical hazards, correct safety problems in the workplace, and refuse to work in unsafe conditions by examining the potential for coworkers' behaviors as potential moderators. The authors find that that when coworkers exhibit aggressive behavior, the effect is to dissuade young workers from acting on their knowledge and reducing the likelihood that young workers will undertake safety-related reporting. The findings point to the importance of the social context in determining young workers' safety-related behaviors and experiences, and suggest that the effectiveness of safety programs may be enhanced if they move beyond a narrow focus on safety to include consideration of the broader psychosocial work environment.

In the third presentation, the symposium further explores the like-lihood of young workers speaking up about safety-related issues (i.e., safety voice). [redacted], MSc, and colleagues examine the relationship between young worker perceptions of invulnerability and safety voice through the development and testing of a model in two studies about the relationship between perceptions of physical danger at work and safety voice—mediated by the fear of injury and moderated by perceptions of invulnerability. The results from the two studies suggest that young workers who perceive themselves as invulnerable to physical injuries at work are less likely than their more vulnerable counterparts to speak up about safety concerns especially when the work environment is not particularly hazardous.

In the fourth presentation, [redacted], PhD, and colleagues look at how institutions can train young workers about hazard identification and control, emergencies at work, rights and responsibilities, and communication in an online format. The authors investigate an extension of NIOSH's Youth@Work: Talking Safety curriculum called Promoting U through Safety and Health (PUSH). The authors found that although PUSH training was effective in increasing the health and safety knowledge among young workers from different backgrounds and that young workers reported liking the training, the knowledge increases were not maintained at follow-up. This research tasks employers with the challenge of designing training to reflect the needs of a young audience, and more generally to increase the health and safety training provided to their young employees.

Finally, building on these presentations, [redacted], PhD, Coordinator of [redacted], is well qualified to bring these studies together by critically evaluating common themes and highlighting issues for future research that are not addressed in the current

presentations. Examples of such issues include a greater understanding of the contexts in which young workers work, as well as important research questions about the various social and organizational influences that affect young workers' health and safety behaviors.

### Workplace Violence Against Youth: Characteristics and Consequences

#### Kimberly Rauscher(West Virginia University)

Workers under the age of 25 are at risk for workplace violence (US Bureau of Labor Statistics, 2014a, 2014b). This includes bullying, verbal abuse, sexual harassment, threats, physical attacks and even homicide. Given their predominant employment in the high-risk retail and service industries, their lack of violence prevention training and the fact that they may be uniquely affected by workplace violence due to their ongoing physical and psychological development, young workers are a vulnerable population when it comes to workplace violence. Despite this, little research attention has been directed at this group of workers. To help fill this gap, we conducted a national study of workplace violence among youth ages 14-24. The main objective of which was to improve our understanding of young workers' experiences with workplace violence and to learn how these experiences negatively affect their mental health, work life and school life. We collected data from 1,017 workers ages 14 to 24 across the US, via telephone interview. Data collection occurred between July 2017 and January 2019. Respondents were asked about their experiences with workplace violence in the 12 months prior to the day of their interview. Eligible participants had to have held a formal civilian job in which they earned a paycheck in the previous 12 months. Babysitting, lawn mowing, and other odd jobs done for cash on an informal basis were not included. For the present analysis, we used descriptive statistics to characterize reports of workplace violence including the forms experienced, the perpetrators, and the consequences suffered as a result. These included various forms of mental distress (e.g., anxiety) as well as negative impacts on their work life (e.g., productivity) and school life (e.g., grades). We collected details of the cases by asking respondents about the last event in which they suffered workplace violence. When a respondent reported experiencing multiple forms of violence, interviewers randomly selected one form and asked the respondent to talk about the last time they experienced that form of violence. Our sample included 491 (48%) 14- to 17-year-olds and 526 (52%) 18- to 24-year olds. Just over 53% were male, 77% were white, and 14% identified as Hispanic/Latino. Approximately 80% were students at the time of the interview, mainly in middle/high school (n = 296) or a 4-year college/graduate school (n = 218). Just over 57% (n = 577) reported experiencing some form of workplace violence at least once in the 12-month study period. The forms experienced were as follows: verbal abuse (50%), sexual harassment (22%); threats (15%); physical attacks (6%) and sexual assaults (5%) (categories are not mutually exclusive). When asked about their last experience with workplace violence, respondents named customers (53%) as the most common perpetrator, followed by co-workers (34%) and supervisors (20%) (not mutually exclusive). The most frequently reported mental health affects resulting from their experience included the following: increased stress (41%), increased anxiety (39%), increased insecurity (26%), decreased self-esteem/confidence (22%), and increased distrust of people (21%). Effects on school life were limited with few respondents reporting seeing their grades drop (5%), skipping classes more often (3%), or showing up late for classes more often (3%) after their experience with workplace violence. Work

life effects were more common. After the event, 27% said they cared less about their job, 16% said they stopped trying to do their best work, and 13% said their productivity decreased. Just over 29% quit or considered quitting their job in reaction to the event, while 17% changed their schedule and 14% cut back their hours. Our study finds that workplace violence is common among young people in the United States and that it can have significant impacts on their mental health. Our finding that nearly one-quarter of youth experience sexual harassment or assault at work demonstrates that such issues are not "adult" problems and even girls as young as 14 are at risk - a particularly salient finding in this time of heightened awareness of gender harassment and inequality at work. Because of their vulnerabilities, both internal (e.g., ongoing development) and external (e.g., high-risk jobs), young people are a particularly vulnerable group who deserve more attention when it comes to workplace violence. While our study did not determine longterm effects, there was evidence that workplace violence has numerous immediate negative impacts on the mental well-being of young victims. Further studies should attempt to understand whether these impacts may be prolonged and under what conditions, specifically the severity and type of violence is likely to play a role and should be examined. In the meantime, we should work to raise awareness among youth and their parents, teachers, mentors and doctors of the problem of workplace violence and urge employers to take preventative actions such as instituting a workplace violence prevention program and providing age appropriate training to young workers.

## From Knowledge to Action: How Workplace Aggression Affects Safety Behaviors in Young Workers

#### Stephanie Gilbert (Canadian Bankers Association)

A great deal of attention has been focused on issues of young workers' safety given the consistent finding that young workers experience more injuries than do their older counterparts. Tucker, Turner and Kelloway (2015), for example, found that approximately 30% of their sample of just under 20,000 young workers had experienced at least one minor injury in the month preceding their study. Efforts to reduce the injury rate among young workers have focused largely on educational and awareness campaigns (Kelloway, Francis & Gatien, 2013). Although training is recognized to be an effective intervention in occupational health and safety, recent research suggests that increasing knowledge may not be enough. Kao et al. (2019), for example, found that the link between safety knowledge and safety behavior was moderated by supervisors' support for safety. Similarly, Mullen (2005) reported that reporting of safety issues was predicted by management openness and norms supporting reporting. In the current study, we focus on young workers' willingness to report hazards, correct safety problems in the workplace and refuse unsafe work—these behaviors are the root of the internal responsibility system that underpins much of Canadian safety legislation and regulation (Kelloway et al., 2013). Moreover, we extend previous findings by focusing on the potential for coworkers', rather than supervisors', behaviors as a potential moderator of the knowledge-behavior link. In particular, we suggest that when coworkers exhibit aggression in the workplace (Schat & Kelloway, 2005) the effect is to dissuade young workers from acting on their knowledge and engaging in safety related reporting. Aggression from peers maybe particularly relevant for young workers given high rates of teenage aggression in general (Dupré et al., 2006). Empirically, Tucker et al. (2014) reported that young workers under-reported injuries at least partially because of the negative reactions of others in the workplace.

Similarly, Mullen (2004) found that individuals did not engage in safe work practices or wearing personal protective equipment as a result of teasing or harassment from their coworkers. We surveyed 177 young workers who were also university students. At the time of the survey, all participants were also working part-time. The majority of respondent were female (n=143, 81%) and all were between the ages of 18 and 25 (Mean =20.17 years; SD =1.68 years). All respondents completed Mullen's (2005) three item measure of willingness to address safety problems in the workplace ( $\alpha$  = .95), as well as single items assessing their willingness to report hazards and to refuse unsafe work. Safety knowledge was measured with a seven item ( $\alpha$  = .77) measure adapted from Barling, Loughlin & Kelloway (2002). Finally aggression was assessed with the coworker (10 items,  $\alpha$  = .96) subscale of the Workplace Aggression Scale (Schat, Desmarais & Kelloway, 2006). Hypotheses were tested with moderated regression analyses with all analyses controlling for both age and gender. Aggression from coworkers moderated the effect of safety knowledge on willingness to address safety problems (R2 = .034, p < .01), willingness to report safety hazards (R2 = .035, p < .01), but not on willingness to refuse unsafe work (R2 = .005, ns). Analysis of simple slopes suggested that when coworker aggression was high safety knowledge had a smaller effect on willingness to address safety problems (b = .04) than when coworker aggression was low (b = .11). Similarly, safety knowledge had a smaller effect on respondents' willingness to report safety hazards when coworker aggression was high (b = .06) than when coworker aggression was low (b = .14). These findings point to the importance of the social context in determining young workers' safety-related behaviors and experiences. The effect of safety knowledge on respondents reporting of safety events was considerably smaller when respondents also reported experiencing workplace aggression than when they did not. Our results suggest that the effectiveness of safety programs may be enhanced if they move beyond a narrow focus on safety to include consideration of the broader psychosocial work environment.

## Hazardous Work, Fear of Injury, and Safety Voice: The Role of Invulnerability Among Young Workers

#### Nick Turner (University of Calgary)

Statistics indicate that young workers (15-24 years old) are 50% more likely to sustain an injury at work than their older counterparts are (Breslin & Smith, 2005), with young males being four times more likely than older males to sustain an injury at work (Breslin, Koehoorn, Smith, & Manno, 2003). According to researchers and government safety councils, young workers as a group possess many characteristics that put them at a high risk of injury, including relative inexperience, limited knowledge of their rights and responsibilities, and their eagerness to please adult co-workers (Breslin, Koehoorn, Smith, & Manno, 2003). Other research has shown that young workers are at a heightened risk of injury due to their anatomical, physiological, and psychological characteristics (e.g., Alsop, Gifford, Langley, Beg, & Firth, 2000; Anderson, Hannif, & Lamm, 2011; Windau & Meyer, 2005). Furthermore, young people are at a greater risk of harm from exposure to hazardous substances, and can develop cumulative trauma disorders due to rapid growth and development of musculoskeletal systems and organs (Linker, Miller, Freeman, & Burbacher, 2005). While the occupational health and safety literature includes extensive research on injury rates, safety climates, and management strategies (Lavack et al., 2008), there exists a gap in the literature on how invulnerability affects young workers' occupational safety. Teenagers and young

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