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RESEARCH ARTICLE

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Youth doing dangerous tasks: Supervision matters

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Background: Supervisors are partially responsible for ensuring that teens are safe at work. The purpose of this study was to explore whether supervision is related to teens' willingness to do a dangerous task at work.

Methods: A mixed-methods study consisting of focus groups and a cross-sectional survey was conducted with teens from two public high schools.

Results: If asked by a supervisor, 21% of working teens would do a dangerous task. After controlling for gender and age, teens whose supervisor did not establish weekly goals (AOR = 3.54, 95%CI = 1.55-8.08), teens who perceived their supervisors as not approachable (AOR = 2.35, 95%CI = 1.34-4.13), and teens who were not comfortable talking about safety issues (AOR = 1.97, 95%CI = 1.08-3.61) were more likely to do a dangerous task if asked by their supervisors.

Conclusion: This study indicates that how teens perceive their supervisor may be associated with whether teens do a dangerous task when asked by their supervisor.

KEYWORDS
child labor, dangerous work, safety at work, supervision

1 | INTRODUCTION

In the United States, many teens are employed. In April to July 2016, over 20 million youth worked for pay [United States Department of Labor, Bureau of Labor Statistics, 2016]. For teenagers, there are many benefits associated with working, including increased self-esteem and opportunities to learn job skills and fiscal responsibility[1,2]; however, young workers are at risk for suffering an injury that can have a lasting impact. Studies of working teens report that between 15% and 41% report an injury at work.[3–8]

Teens report high rates of doing job tasks that are known to be dangerous. Runyan et al[9] found that among teens working in food service and grocery stores, 71% reported using sharp knives and 68% used other sharp objects such as box cutters. Nearly fifty-five percent used grills or ovens and 36% used deep fat fryers. If teens are asked to do dangerous tasks at work, many comply because they may not recognize the tasks are dangerous[10,11] and because of the power imbalance between supervisor and teen worker.

In addition to the power imbalance that may exist because of the age difference between teens and their supervisors,[12] gender, and race may be important factors that lead to teens to doing more dangerous tasks that result in injuries at work. Breslin et al[12] found that females stated that their complaints regarding work and injury were dismissed or minimized by their supervisors. Male teen workers were more likely not to report their concerns in order to prove themselves in the "adult world of work." In comparison to Breslin et al,[12] Rauscher et al[8] found that females reported more supervisor support compared to males ($P < 0.004$). Zierold et al[13] reported that male teens were more likely to do a dangerous task than females (11% males vs 4% females, $P < 0.0001$). One study evaluated the racial differences in regards to doing a dangerous task at work. Zierold et al[14] reported that compared to white teens, African-American and Hispanic teens were more likely to do a dangerous task at work. Furthermore, it was reported that African-American and Hispanic teens were more likely to work after 11:00 PM, when supervision may be lacking.

Workplace supervisors, who oversee work and delegate job tasks, are responsible in part for ensuring the safety of young workers. Research among adult workers has shown that employee perception of supervisors is important to the safety climate in the workplace.[15–21]

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While multiple studies have assessed adult perceptions of workplace supervisors, limited studies have assessed teens' perceptions of their supervisors.[8,22] In a recent study, Rauscher et al[8] found that among 238 teen workers, most perceived their supervisor positively. Specifically teens felt their supervisor was concerned about their safety and believed their supervisor was helpful. Words teens used to describe their supervisors were "nice," "understanding," and "friendly."

Limited data on teens' perceptions and workplace supervision exists, and how that supervision may influence behavior is unknown. Teen worker's perception of his/her supervisor and traits of their supervisor may affect whether a teen chooses to do a dangerous task at work when asked. The objective of this study was to explore whether a teen's relationship with their supervisor is related to teens' willingness to do a dangerous task at work.

2 | METHODS

The study was a mix-methods study conducted in Jefferson County, Kentucky, USA. In 2010, focus groups and interviews were conducted with currently working teens aged 15-19 years old. Findings from the discussions were utilized to create a comprehensive questionnaire that was used in a cross-sectional survey of teens in 2011. All procedures were approved by the Institutional Review Board of the University of Louisville, the Data Management, Planning, and Program Evaluation Department of Jefferson, County Public Schools, and the principals of the participating high schools.

2.1 | Schools where data collection occurred

Teenagers were recruited from two public high schools that are magnet career academies. One school is an inner-city school with approximately 983 students, the majority (82%) who are African-American. This school offers nine career-training programs for students including for example: medicine, nursing, law and government, business, and technology. The second school is a suburban working-class high school with approximately 1936 students, 70% of whom are white. This school offers career-training programs in communications, media, and fine arts. Many of the career-training programs prepare teens for entering the job market upon graduating from high school. For example, teens enrolled in the nursing magnet are certified as nursing assistants during their senior year of high school.

2.2 | Focus groups: Recruitment of participants and data collection

The methods for the qualitative part of the study have been previously described.[23] In brief, 42 working teenagers were recruited during lunch periods at each school over several days during a 1 week period. Teens who were interested and eligible to participate were given consent forms. If they were younger than 18 years old, the forms had to be signed by their parents or guardians and returned; if students were 18 years or older, they signed the forms and signed up for a focus group or interview.

Overall, five focus groups and seven interviews were conducted. Interviews lasted approximately 1 h and focus groups lasted approximately an hour and a half to 2 h. Participants younger than 18 years of age assented to participating before the discussions began. Members of the research team trained in interviewing and focus group facilitation ran the discussions using a semi-structured guide. All discussions were recorded and transcribed verbatim. Three research team members read the transcripts for themes that arose from the discussions. The themes were utilized to create the questionnaire that was used in the survey of high school students.

This manuscript focuses on results from the survey of high school students; however, comments from the focus groups and interviews are used for anecdotal background in the discussion.

2.3 | Questionnaire design

There are no supervision-based questionnaires that have been used to survey working teenagers, thus a questionnaire about supervision and safety training was designed from themes that arose from the working teen focus groups.

The questionnaire, which was predominately multiple choice, contained seven sections including: demographics, job and work characteristics, safety training, supervision, parent relations, and school performance. The questionnaire focused only on the current school year and teens were asked to identify their main job. There were a total of 47 questions, eight which focused on supervision. The questionnaire was pretested in focus groups of teens and several changes for clarity were made. Working teens answered all the questions which took 10-15 min to respond, whereas non-working teens answered nine questions and took less than 10 min to respond.

2.4 | Survey: Recruitment of participants and data collection

Since this study was no more than minimal risk and met the requirements for "waiver of consent" as specified in 45 CFR 46.116 (d), "passive consent" methods were utilized, as approved by the Institutional Review Board of the University of Louisville, the Data Management, Planning, and Program Evaluation Department of Jefferson County Public Schools, and the principals of the participating high schools. Survey methods differed at the two high schools.

At the inner city high school, questionnaires and consent forms were distributed to the teachers in the career magnet program. Teachers distributed the consent forms to teenagers to give to their parents or guardians a few days before the survey. If parents or guardians felt uncomfortable with their child participating or had questions about the study, contact information for the principal investigator was provided. A few days later, teachers were asked to give the questionnaires to all of their students, regardless of their employment status. An assent form was attached to the questionnaire and students kept this form. By completing and returning the questionnaire, students assented.

The above recruitment strategy was proposed but rejected by the administration of the suburban high school. Thus, a different survey strategy that was acceptable to the administration was used to obtain questionnaire responses. The research team recruited students during lunch periods, school breaks, and after school over a three-day period during one week. To obtain a questionnaire, students approached a series of tables that were set in the hallway, outside the cafeteria. A member of the research team handed out a questionnaire and a pen. Attached to the questionnaire was an assent form. Once a student completed the questionnaire, he/she returned it to the research team and received a consent letter to bring to their parents or guardians. After teens handed in their questionnaire, they selected an incentive item from the University of Kentucky or the University of Louisville, such as a tee-shirt or hat.

2.5 | Study variables

The variables from the questionnaire used in this study are broken down into four groups: population of working teens, demographics, work characteristics, and supervision. Working status was determined by asking "*During this school year, did you work? (Y/N).*" The demographic characteristics that were included are: gender, age (14-19 years old), and race (white, African-American, other). Several work characteristics were assessed in this study including: main job worked (food industry, retail/services, child care, manual jobs, other jobs), number of hours worked per day during the school week (1-4 h, 5-8 h, more than 8 h), number of hours worked per day during the weekend (1-4 h, 5-8 h, more than 8 h), how late teens worked during the week (before 7:00 PM, 7:00 PM-10:30 PM, after 10:30 PM) and on the weekend (before 7:00 PM, 7:00 PM-12:00 AM, after 12:00 AM), and whether teens received safety training (Yes/No).

In order to characterize supervision, several questions were asked including: "*Does your supervisor make sure you understand workplace safety? (Yes, No, I don't know),*" "*Select all answers that describe your supervisor (Cares about my safety, Helpful, Listens well, Approachable, Establishes weekly goals for me to achieve, I feel comfortable talking about safety issues with my supervisor, More concerned about getting work done than safety),*" "*Do you feel you get enough supervision at work? (Yes, No, I don't know),*" and "*Do you think supervision helps prevent workplace accidents? (Yes, No, I don't know)*"

To assess whether a teen would do a dangerous task if asked by their supervisor, we asked "*If your supervisor asked you to do something you felt was dangerous, would you do it? (Yes, No, I don't know).*" Teens that responded "I don't know" were coded as missing.

2.6 | Statistical analysis

Analysis was done using SAS 9.2 (Cary, N.C.). Frequencies and counts were completed for each variable. Comparisons between teens who would do a dangerous task and teens who would not do a dangerous task were done using chi-square analysis or Fisher's exact test for small samples.

Comparison of the number of positive perceptions between teens who would do a dangerous task and teens who would not, was determined by creating a score that was calculated by summing 10 items; (1) supervisor cares about the teen's safety, (2) supervisor is helpful, (3) supervisor listens well, (4) supervisor is approachable, (5) supervisor makes sure teen understands workplace safety, (6) supervisor is more concerned with safety than getting work done, (7) supervisor establishes weekly goals, (8) teen feels supervision helps prevent workplace accident, (9) teen feels he/she gets enough supervision, and (10) teen is comfortable talking about safety issues with the supervisor. Scores could range between 0 and 10 and were calculated for all teens and broken down by gender, race (white, African-American, other race), and age (14-15 years old, 16 years old, 17 years old, 18-19 years old.). The scores are presented as medians with corresponding interquartile ranges (IQR). To compare the scores between teens who would do dangerous tasks and those who would not, the Wilcoxon Rank-Sum Test with the normal approximation was used.

To determine the association between teens' perceptions of their supervisors and whether they would do a dangerous task, logistic regression was done. Adjusted logistic models included gender and age as they were associated with whether a teen would do a dangerous task in the crude/simple models. Race, work characteristics, and safety training were not included in the adjusted logistic models because they were not associated with a teen doing a dangerous task in the unadjusted models.

3 | RESULTS

3.1 | Survey population

A total of 930 teens responded to the questionnaire. Forty-six questionnaires (5%) were removed for inappropriate answers, leaving a sample of 884. Of the 884 teens who completed questionnaires, 395 teens aged 14-19 years old, worked during the school year (45%).

3.2 | Demographics

Table 1 reports the demographics and work characteristics of the working teens. Overall, 82 working teens (21%) would do a dangerous task if asked by their supervisors.

Males were significantly more likely to do a dangerous task if asked by their supervisors compared to females ($P = 0.006$). A borderline relationship between age and doing a dangerous task exists; with younger teens (14-15 years old) and older teens (18-19 years old) more likely to do a dangerous task when asked. There were no differences in race or work characteristics among teens who would do a dangerous task and those who would not do a dangerous task.

3.3 | Perceptions and traits of supervisors

Table 2 displays the teen's perceptions and traits of supervisors. Overall, most teens believed they were adequately supervised (69%), felt that their supervisor made sure they understood workplace safety (61%), believed that supervision helps prevent accidents (80%) and perceived their supervisor as caring (59%) and helpful (55%). However, very few teens perceived their supervisor as approachable (35%). Furthermore, only 27% of teens felt comfortable talking with their

TABLE 1 Characteristics of teens aged 14-19 years old and work (*N* = 395)

Characteristic	Would do a dangerous task if asked by supervisor[a,b] (*n* = 82)	Would NOT do a dangerous task if asked by a supervisor[a,b] (*n* = 307)	*P*-value
Gender			0.006
Males	44 (54%)	81 (26%)	
Females	38 (46%)	143 (47%)	
Race			0.183[c]
White	35 (43%)	102 (33%)	
African-American	42 (51%)	95 (31%)	
Others	5 (6%)	28 (9%)	
Age			0.060
14-15 years old	15 (18%)	33 (11%)	
16 years old	27 (33%)	96 (31%)	
17 years old	22 (27%)	71 (23%)	
18-19 years old	18 (22%)	25 (8%)	
Main job			0.219[c]
Restaurant	49 (60%)	104 (34%)	
Retail/Service	8 (10%)	31 (10%)	
Child care	4 (5%)	24 (8%)	
Manual Labor	4 (5%)	17 (6%)	
Other	15 (18%)	34 (11%)	
Time ended work on weekend			0.449
Before 7:00 PM	8 (10%)	26 (8%)	
7:00 PM-12:00 AM	62 (76%)	175 (57%)	
After 12:00 AM	8 (10%)	13 (4%)	
Time ended work during week			0.188[c]
Before 7:00 PM	8 (10%)	41 (13%)	
7:00 PM-10:30 PM	68 (83%)	169 (55%)	
After 10:30 PM	4 (5%)	10 (3%)	
Number of hours worked on weekends			0.527
1-4 h	25 (30%)	62 (20%)	
5-8 h	43 (53%)	126 (41%)	
More than 8 h	13 (16%)	25 (8%)	
Number of hours worked during week			0.329
1-4 h	22 (27%)	58 (19%)	
5-8 h	42 (51%)	128 (42%)	
More than 8 h	11 (13%)	18 (6%)	
Received safety training			0.456
Yes	62 (76%)	158 (51%)	
No	13 (16%)	43 (14%)	

[a]Six teens did not respond to the dangerous task question.
[b]Percentages may not add to 100% because of missing responses.
[c]Fisher's Exact Test for small sample.

TABLE 2 Working teens perceptions of supervisors

Perceptions	Total[b] (*N* = 395)	Would do a dangerous task if asked by supervisor[a,b] (*n* = 82)	Would NOT do a dangerous task if asked by a supervisor[a,b] (*n* = 307)	*P*-value
Supervisor makes sure teen understands workplace safety				0.125
Yes	242 (61%)	61 (74%)	181 (59%)	
No	44 (11%)	16 (20%)	28 (9%)	
Teen gets enough supervision at work				0.835
Yes	273 (69%)	73 (89%)	200 (65%)	
No	28 (7%)	8 (10%)	20 (7%)	
Supervisor cares about teen's safety				0.251
Yes	235 (59%)	59 (72%)	176 (57%)	
No	72 (18%)	23 (28%)	49 (16%)	
Supervisor is helpful				0.059
Yes	216 (55%)	51 (62%)	165 (54%)	
No	91 (23%)	31 (38%)	60 (20%)	
Supervisor listens well				0.046
Yes	145 (37%)	31 (38%)	114 (37%)	
No	162 (41%)	51 (62%)	111 (36%)	
Supervisor is approachable				0.001
Yes	137 (35%)	24 (29%)	113 (37%)	
No	170 (43%)	58 (71%)	112 (36%)	
Teen feels comfortable talking about safety issues				0.014
Yes	105 (27%)	19 (23%)	86 (28%)	
No	202 (51%)	63 (77%)	139 (45%)	
Supervisor more concerned about getting work done than safety				0.341
Yes	26 (7%)	9 (11%)	17 (6%)	
No	281 (71%)	73 (89%)	208 (68%)	
Supervisor establishes weekly goals for teen				0.004
Yes	64 (16%)	8 (10%)	56(18%)	
No	243 (62%)	74 (90%)	169 (55%)	
Supervision helps to prevent workplace accidents				0.980
Yes	315 (80%)	68 (83%)	181 (60%)	
No	45 (11%)	11 (13%)	29 (9%)	

[a]Six teens did not respond to the dangerous task question.
[b]Percentages may not add to 100% because of missing responses.

supervisor about safety issues and only 16% believed their supervisor set weekly goals.

Teens who would do a dangerous task if asked by their supervisor were more likely to report that their supervisor was not approachable ($P = 0.001$), was not helpful ($P = 0.059$), did not listen well ($P = 0.046$), and did not establish weekly goals ($P = 0.004$). Furthermore, teens who would do a dangerous task were not comfortable talking to their supervisors about safety issues ($P = 0.014$).

Table 3 reports the median positive perception scores for the teens. Overall, there was a significant difference ($P = 0.005$) between teens

TABLE 3 Number of positive perceptions of supervisors

	Would do a dangerous task if asked by supervisor (median [IQR])	Would NOT do a dangerous task if asked by supervisor (median [IQR])	*P*-value
All teens	5.0 (7-4)	7.0 (8-5)	0.005[a]
Males	6.0 (8-4)	6.0 (8-4)	0.570
Females	5.0 (7-3)	7.0 (8-5)	<0.001[a]
White	7.0 (8-4)	7.0 (8-5)	0.297
African-American	5.0 (6-4)	7.0 (8-5)	0.004[a]
Other Races	5.0 (7-4)	7.0 (8-5)	0.005[a]
14-15 years old	6.0 (8-4)	8.0 (9-6)	0.314
16 years old	5.0 (7-4)	7.0 (8-5)	0.041[a]
17 year olds	5.0 (7-3)	7.0 (8-4)	0.075
18-19 years old	5.0 (7-4)	6.0 (8-4)	0.567

[a]Significantly different at $P < 0.05$.

who would do a dangerous task and teens who would not. The median number of positive perceptions and traits held by teens who would do a dangerous task was five (IQR = 7-4) compared with teens who would not do a dangerous task who reported seven positive perceptions and traits about their supervisors (IQR = 8-5). There were also significant differences in scores for females ($P = <0.001$), African American teens ($P = 0.004$), other race teens ($P = 0.005$), and 16-year olds ($P = 0.041$).

3.4 | Perceptions associated with doing a dangerous task

Table 4 shows the results of the logistic regression for determining the association between doing a dangerous task if asked by a supervisor and teens' perceptions and traits of their supervisors. After controlling for gender and age, teens whose supervisor did not establish weekly goals (AOR = 3.54, 95% CI = 1.55-8.08), teens who perceived their supervisors as not approachable (AOR = 2.35, 95%CI = 1.34-4.13), and teens who were not comfortable talking about safety issues (AOR = 1.97, 95%CI = 1.08-3.61) were more likely to do a dangerous task if asked by their supervisors.

4 | DISCUSSION

The role supervisors play in whether teens do a dangerous task has not been previously studied. Since supervisors are partially responsible for ensuring a safe and risk-free environment for employees, it is important to assess whether supervision accomplishes this goal. Equally important is how working teens perceive their supervisor and, in turn, how this perception influences behaviors at work. In this study, teens who perceived their supervisors negatively were more likely to do dangerous tasks when asked. These negative perceptions combined with a feeling of replaceability and the power imbalance between teens and supervisors could make it difficult for teens to refuse to do a dangerous task when asked, which ultimately may put the young worker in a dangerous or unsafe situation. During focus groups and interviews, when teens were asked if they would do a dangerous task and how their supervisor would react a 17-year-old male stated: "*Yeah, I would [be concerned about ramifications of saying no]. If they are paying me to do a job and if you tell them no, they could easily go find someone else who would do it*." Similarly a 16-year old female working a pizza restaurant said "*I would still do it*."

Teens who felt that their supervisors were not approachable, did not listen well, and teens who were not comfortable talking about safety concerns were twice as likely to do a dangerous task

TABLE 4 Perceptions associated with teens doing dangerous tasks when asked by supervisor

Perceptions	Odd Ratio (95%CI)	Adjusted Odds Ratio[a] (95%CI)
Supervisor does not make sure teen understands workplace safety	0.59 (0.30-1.16)	0.64 (0.31-1.29)
Teen does not get enough supervision at work	0.91 (0.39-2.16)	0.96 (0.39-2.35)
Supervisor does not care about teen's safety	1.40 (0.79-2.49)	1.29 (0.71-2.33)
Supervisor is not helpful	1.67 (0.98-2.86)	1.66 (0.95-2.89)
Supervisor does not listens well	1.69 (1.01-2.83)[b]	1.71 (1.00-2.91)
Supervisor is not approachable	2.44 (1.42-4.20)[b]	2.35 (1.34-4.13)[b]
Teen does not feel comfortable talking about safety issues	2.05 (1.15-3.66)[b]	1.97 (1.08-3.61)[b]
Supervisor is more concerned about getting work done than safety	0.66 (0.28-1.55)	0.67 (0.28-1.62)
Supervisor does not establish weekly goals for teen	3.07 (1.39-6.75)[b]	3.54 (1.55-8.08)[b]
Supervision does not prevent workplace injury	0.99 (0.47-2.09)	1.03 (0.48-2.21)

[a]Models adjusted for gender and age, which were significant at the $P < 0.05$ level in the simple models.
[b]Significant at $P < 0.05$.

when asked by their supervisor. These findings, combined with fewer positive perceptions among teens who would do a dangerous task, suggest that supervisors have a strong influence on safety at work. As a female who worked at a fast food restaurant said: "*I wanted to, but I didn't. Because at "X" you keep all your money that you make in an apron and since you have to go outside, anyone could easily just come through and rob you, but I never said anything about it because they not going to probably change the whole thing just for me. [. . .]I think they're the type who would probably tell me I could find another job*." Another 18-year old female stated that her supervisor did not believe her about her injury and work, but another women did: *(after having injured her kneecap, was limping, no time off work)* "*No, I just came in. I was okay, like they gave me lighter work to do, but like, I didn't really lift anything for like a day or two. I just kinda worked lightly, the other workers don't like that shit (laugh). I just had to work really lightly. My supervisor, she thought I could really lift stuff, and I was like, I REALLY can't. So I talked to the other lady and she was like, well let her do light work and she was kind of upset about that and. . . but. . . other than that I just came in and worked, just like everybody else*."

Research among adult workers has confirmed the impact of supervisors on the work environment. Michael et al[17] reported that workers who had a better relationship with their supervisors were less likely to be injured or to have a near-miss incident, where they were almost injured. Hofmann et al[15] found that workers who had a positive relationship with their supervisors felt comfortable voicing safety concerns.

While most teens in this study believed they were adequately supervised quality of supervision may be lacking. In focus groups, teens perceived that their supervisors were more preoccupied with their own personal, non-work related business than they are about work. As a 16-year-old female who worked at a skating rink stated: ". . . *He brings his girlfriend up there all of the time and her kids and he is wants to spend time with them instead of making sure we're doing what we're supposed to do*." This comment was followed by a comment from a 15-year old female who stated: "*And like my boss is always on the phone with his kids or like making food orders that he doesn't need. Like there's so like much more that he could be doing that he doesn't do*." Teens' negative perceptions of their supervisors may be improved by more interaction, more open communication, and more listening.

In addition to the negative perceptions reported by teens, there were some positive perceptions regarding supervisors. More than half of the teens perceived that their supervisors cared about their safety, were helpful, and many believed that their supervisor made sure that they understood workplace safety. For example, a 17-year-old female shared: "*My manager's real protective. At night we take the trash out, and one time I was just about to take the trash out and they got on me because I'm not supposed to take the trash out real late at night because I'm a girl and somebody might snatch me up or sneak in through the back door or something like that, so they make sure the doors stay locked and they make sure we bring in a garbage can before it gets too dark, and put the trash in there and leave it by the back door so when the morning shift comes in, they take it out*." These findings mirror[8] who reported positive perceptions about supervisors, specifically that supervisors were concerned about the teens' welfare, that they paid attention to what the teen is saying, and that they are helpful in getting the job done. Interestingly, among teens who had positive perceptions of their supervisor, in this current study, they would also do a dangerous task when asked by their supervisor. For example, compared to teens who would not do dangerous tasks, a much larger percentage of teens who would do dangerous tasks believed their supervisor cared about their safety (57% vs 72%). There are a few reason why teens who perceive their supervisor positively may also be more likely to do dangerous tasks. First, this may indicate that the power imbalance influences teens or that teens are unsure as to what safe work practices and safety are, thereby doing tasks that are part of their job, but for which they do not believe are dangerous. Research on young workers has shown that many teens do not recognize or are not concerned about doing dangerous work.[10,11] Vladutiu et al[11] described that though many teenagers reported performing specific hazardous tasks, only 13% of those surveyed viewed one of their tasks to be dangerous. Second, teens who view their supervisors positively might be trusting of their supervisor and do the task as asked even if it is dangerous.

Overall, this study showed contradictory findings about perception of supervisors and doing a dangerous task. Teens who perceived their supervisors negatively were more likely to do dangerous tasks, however, in addition, among those teens that perceived their supervisors positively, they were also likely to do dangerous tasks. Teens who perceive their supervisor negatively might do a dangerous task because they believe they are "expendable," and afraid they might be fired, while teens who see their supervisor positively may be trusting of their supervisor and do a dangerous task because they are asked and they trust that the supervisor would not have them do something dangerous. More research into the relationship between teens' perceptions of their supervisors is needed, especially research that uses continuous measures of dangerous tasks that may highlight the relationship.

In this study, males were significantly more likely to do dangerous tasks if asked by their supervisors ($P = 0.006$). It is unclear why males are more likely to do dangerous tasks when asked—they may have a different perspective of what is dangerous, they may be more likely to be asked by their supervisors, they may have harder times saying no, or they may have different perceptions of supervision and work. Breslin, et al[12] conducted focus groups with Canadian working teenagers, and found that males tended to feel pressure to prove themselves as mature adults at work, which manifested itself as not expressing their safety complaints or concerns. In contrast, the females in the same study reported no issue with expressing their concerns, but rather, that their complaints were dismissed by their supervisors.

4.1 | Study strengths and limitations

There are several strengths of this study. Foremost, this is the first study to evaluate teens' perceptions of their supervisors and whether

those perceptions are related to doing a dangerous task at work. Second, the population contained a diverse age range of teen workers (14-19 years old), a variety of work characteristics was explored, and the population was racially diverse in terms of whites and African Americans. Third, this study focused on teens who worked during the current school year, minimizing recall bias. Finally, this study explored a number of traits of supervisors that have not been investigated in the literature, such as whether a teen's supervisor establishes weekly goals. In this study, teens were almost four times more likely to do a dangerous task if supervisors did not establish weekly goals for their teen workers.

There are some limitations of this study that deserve comment. A main limitation of this study is that the survey methods were different at the high schools. While the same sampling method was proposed to both schools, the suburban school administration changed the methodology right before the survey was to occur. At the urban school the teachers handed out the questionnaires to the students during class time. In the suburban school, teens approached the study team who were located at tables in the main hallway near the cafeteria over a 3 day period. Teens were permitted by the school administration to approach the tables during their lunch periods, breaks, and afterschool. Since the sampling methods were different in the high schools, sampling bias exists.

While both populations represent convenience samples, it is a greater likelihood that the population of teens from the suburban school may not reflect the entire school or the working population of teens. For example, students who had activities during lunch or afterschool might not have had the opportunity to fill out the questionnaire. Additionally, suburban teens who worked might have been effected. For example, those teens that worked afterschool might not have had the opportunity to fill out the questionnaire, because they went to work. However, it is also possible that working teens might have been more likely to answer the questionnaire since teens might have told each other that the questionnaire was about work. Although there were other questions pertaining to school performance on the questionnaire, most of the questionnaire was dedicated to work-related issues. Furthermore, since teens in the suburban school were required to approach the table to complete the questionnaire, the response rate is probably lower compared with the urban school where the teachers handed out the questionnaire during class time. Another sampling difference between the urban and suburban school was the use of incentives. Urban school teens were not given an incentive for their participation, while teens from the suburban school were given a token item, such as a t-shirt or hat from one of the state universities, upon completing the questionnaire. Thus at the suburban school more teens that were interested in the incentive items might have responded.

Besides the sampling bias that exists, response bias is likely to exist. At the urban school, teens might have felt pressured to answer the questionnaire because it has handed out by their teachers. Although teens were told that the questionnaire was anonymous, that they did not have to complete it, and to hand it in turned up-side down, more teens might have responded since class time was devoted to responding.

In addition to the bias created by sampling differences, because the data are self-reported by the teens, recall bias may be a limitation. To minimize recall bias, information was only collected for teens who were currently working during the school year. This study did not ask about the number of supervisors the teens have at their job, thus teens may have chosen the supervisor they disliked or liked the best to respond to the questionnaire. Furthermore, the questionnaire did not ask teens about the age, gender, or race of their supervisors. In some cases, supervisors may be employees who are not much older than a teen, but has been at the job longer. Differences in gender and race may influence teens' perceptions as well. Additionally, for questions where teens were asked to "select all that apply," the teens may not have checked all the responses that applied to them, or purposely checked all the responses in the question. Format of the "select all that apply" questions might have produced different results if the questions were asked in a Yes/No format for each item.

4.2 | Implications for practice

For working teens, reducing whether they do a dangerous task at work is a priority. Preventing teens from doing dangerous work tasks, is one component of preventing injury in the workplace. Supervisors have an important role in determining and directing teens' job tasks and thus have a role in injury prevention. This study indicates that how a teen perceives his/her supervisor may be related to whether a teen does a dangerous task when asked by the supervisor. Providing education and training to supervisors about methods of communication, interaction, and relationships to teens may improve teens' perceptions and thus prevent them from doing dangerous tasks. Much more research into the role of supervision is needed among teen workers including the quality and quantity of supervision as well as how supervisors are perceived by teen workers.

AUTHORS' CONTRIBUTIONS

Kristina Zierold designed the study, collected the data, completed the analyses, and wrote the manuscript. She is responsible for the approval of the manuscript and is accountable for all aspects of the work.

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ETHICS APPROVAL AND INFORMED CONSENT

The work was performed at the University of Louisville. Human subjects' approval was obtained for all aspects of the study. Written

consent and assent from the participants and their parents was obtained for the qualitative portion of the study. For the cross-sectional survey, since this study was no more than minimal risk and met the requirements for "waiver of consent" as specified in 45 CFR 46.116(d), "passive consent" methods were utilized, as approved by the Institutional Review Board of the University of Louisville, the Data Management, Planning, and Program Evaluation Department of Jefferson County Public Schools, and the principals of the participating high schools.

DISCLOSURE (AUTHORS)

The authors report no conflicts of interest.

DISCLOSURE BY AJIM EDITOR OF RECORD

Steven Markowitz declares that he has no conflict of interest in the review and publication decision regarding this article.

DISCLAIMER

None.

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