

# Students Enrolled in School-Sponsored Work Programs: The Effect of Multiple Jobs on Workplace Safety and School-Based Behaviors

Kristina M. Zierold, PhD; Savi Appana, MS; Henry A. Anderson, MD

## ABSTRACT

**Background:** Throughout the United States, over 70% of public schools with 12th grade offer school-sponsored work (SSW) programs for credit; 60% offer job-shadowing programs for students. Wisconsin offers a variety of work-based learning programs for students, including, but not limited to, job shadowing, internships, co-op education, and youth apprenticeship programs. No research has compared workplace injury and school-based behaviors in students enrolled in SSW programs who work only 1 job compared with those who work multiple jobs.

**Methods:** A total of 6810 students in the 5 public health regions in Wisconsin responded to an anonymous questionnaire that was administered in 2003. The questionnaire asked about employment, injury, characteristics of injury, and school-based behaviors and performance.

**Results:** A total of 3411 high school students aged 14 to 18 reported they were employed during the school year. Among the working students, 13.5% were enrolled in a SSW program. Of the SSW students, 44% worked multiple jobs. SSW students who worked multiple jobs were more likely to do hazardous job tasks, to work after 11 PM, to work over 40 hours per week, to have a near-miss incident, to have a coworker injured, and to be injured at work.

**Conclusions:** SSW students who are working multiple jobs are violating labor laws that put their safety and their school performance at risk. The responsibilities of employers and schools have to be addressed to ensure that SSW students are abiding by labor laws when working multiple jobs.

## INTRODUCTION

In 1994, the federal government passed the School-To-Work Opportunities Act (the Act) to create a work-based learning program that was modeled after the concept of an apprenticeship. The program was designed to integrate school-based instruction with structured on-the-job training. The Act was passed to

• • •

**Author Affiliations:** School of Public Health and Information Sciences, University of Louisville, Louisville, Ky, (Zierold, Appana); Wisconsin Division of Public Health, Madison, Wis (Anderson).

**Corresponding Author:** Kristina M. Zierold, PhD, Assistant Professor, Department of Epidemiology and Population Health, School of Public Health and Information Sciences, University of Louisville, Louisville, KY 40202; phone 502.852.0251; fax 502.852.3291; e-mail kmzier02@louisville.edu.

provide an opportunity to improve the skills that working youth would need in the changing job market.<sup>1</sup> It pointed to a “lack of a comprehensive and coherent system to help youths acquire the knowledge, skills, abilities, and information about and access to the labor market that are necessary to make an effective transition from school to work or further education.”<sup>2</sup> The Act supported the notion that the work-based learning approach, which should integrate theoretical instruction with structured on-the-job training, combined with school-based learning would be very effective in engaging student interest, enhancing skill acquisition, developing positive work attitudes, and preparing youth for high-skill, high-wage careers.<sup>2</sup>

While the Act allowed states to determine their own form of school-sponsored work (SSW) programs, 3 categories were required to be included within

the SSW programs: (1) school-based activities, which encompass classroom instruction focused on workplace experiences; (2) work-based activities, which include structured training and work experiences outside school-time instruction, such as job shadowing, internship, apprenticeship, and mentoring; and (3) connecting activities, which involve efforts to help the schools and employers maintain bonds between school-based and work-based activities.<sup>3</sup> In an assessment of high schools providing SSW programs, 94% of schools offered 6 or more school-based activities, such as career counseling and job site visits, and 46% offered 6 or more work-based activities, such as curriculum changes that build on work experience. Eighty-two percent of teachers reported being involved in connecting activities, such as attending professional meetings with themes related to SSW programs.<sup>4</sup> Schools located in urban areas and schools with more minority students and teachers

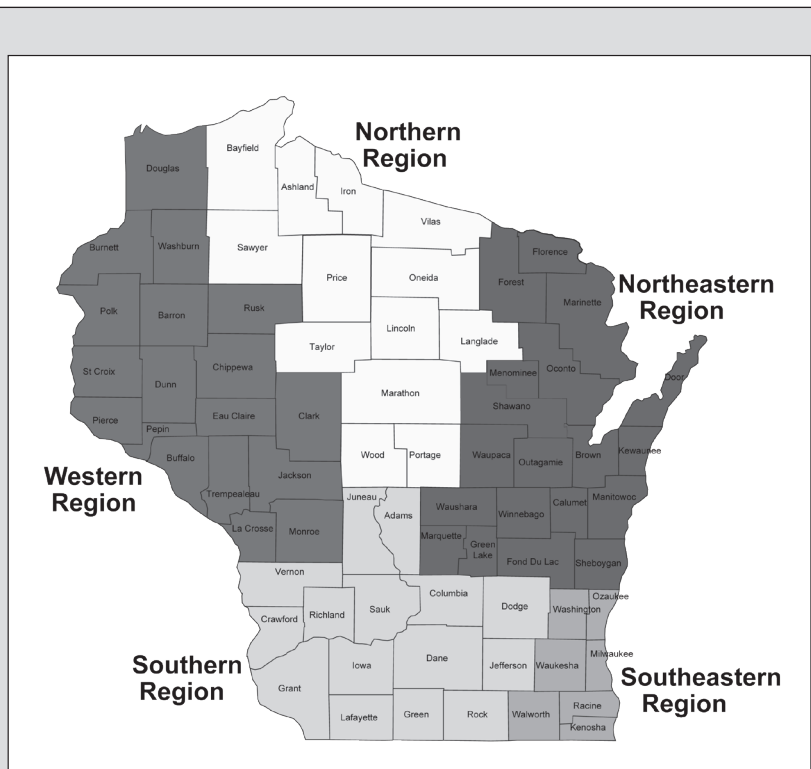


Figure 1. Five Public Health Regions in Wisconsin.

have more SSW activities compared with other schools.

Although federal support for the Act officially ended in 2001, the US Department of Education reported in 2004 that 71.8% of public schools with 12th grade offered work-based learning programs for credit and 60% of schools offered job-shadowing programs.<sup>5</sup>

Wisconsin often is considered a model for work-based learning programs. It was the first state in the United States to establish a comprehensive youth apprenticeship program; this program was 1 of 4 programs used as a model by the federal government to develop the Act in 1994.<sup>6</sup> Wisconsin offers a wide variety of work-based learning programs, including service learning, job shadowing, internships, cooperative education, employability skills certificate, cooperative education skills certificate, youth apprenticeship, school-based enterprise, and youth leadership. In-depth description of these work-based learning programs can be found in the *Wisconsin Work-Based Learning Guide*.<sup>7</sup> Each program has requirements for students, teachers, and the participating partners. Grade requirements are different among the programs. For example, a student in middle school can participate in job shadowing, whereas only juniors and seniors can participate in the youth apprenticeship program. Each of these programs is meant to

let students experience different types of jobs and help them learn and apply skills important for working.

Limited research has been conducted to assess SSW programs,<sup>4,8,9,10</sup> and most of it is limited to a description of the types of programs offered and the demographic characteristics of the schools and students. To date, no studies have investigated the occurrence of injury and academic performance among students enrolled in SSW programs; nor has the effect of multiple jobs been investigated. Therefore, in this study, we compared work-related injury and school performance and behaviors among students who only worked in a SSW job and students who worked in a SSW job plus other jobs.

## METHODS

### Data Collection

The data for this study came from a survey of Wisconsin high school students. In 2003, the Wisconsin Division of Public Health conducted a survey of high school youth throughout the state regarding work, injury, and school performance.

To ensure the schools were representative of youth throughout the state, the school districts were selected from Wisconsin's 5 public health regions, which are determined by the Wisconsin Department of Health and Family Services. They are the northern region, the northeastern region, the western region, the southern region, and the southeastern region, each of which encompasses a number of counties (Figure 1). Students in this study were classified into groups based on whether (1) the student was not employed (non-working), (2) the student was employed and enrolled in a SSW program (SSW) or (3) the student was employed but not enrolled in a SSW program (other-working).

The original project, which involved the collection of the data from the high school students, was considered "exempt" by the Institutional Review Board affiliated with the Wisconsin Division of Public Health because the questionnaire was anonymous and no personal identifiers were collected from the students. The secondary analysis evaluating SSW programs was also considered "exempt" by the Institutional Review Board of the University of Louisville because the data contained no identifiers.

## Statistical Methods

Multiple outcomes relating to work and school were analyzed using chi-square methods and logistic regression. Initially, summary statistics (frequency counts and percents) were calculated along with *P*-values from chi-square tests comparing SSW students with 1 job vs SSW students with multiple jobs for demographic characteristics, working characteristics, injury characteristics, and school performance outcomes. Next, crude odds ratios (OR) were estimated using the univariate logistic regression models to assess the association between the number of jobs held and the various outcomes of interest. Finally, 3 multivariable logistic regression (MVLRL) models were fit to select work-related and school performance outcomes that provided estimates for adjusted odds ratios (AORs) and their 95% confidence intervals (CI). The first MVLRL model was adjusted for age, gender, and race, and was fit on all the work-related and school outcomes. The second MVLRL model was fit for work-related outcomes and was adjusted for age, gender, race, hours worked per week, how late student worked, informed of legal rights and responsibilities, received safety training, performed a dangerous task, and had a near miss. The third MVLRL model was fit for school performance outcomes and was adjusted for age, gender, race, hours worked per week, how late student worked, injured at work, cut/skipped classes, absent from school, expect to graduate, GPA, and time spent on homework in and out of school. All statistical analyses were performed using SAS 9.2 (SAS Institute Inc., Cary, North Carolina). All statistical tests were made at the alpha equal 0.05 level.

## RESULTS

A total of 6810 questionnaires were completed and returned, which covered student work during the 2002-2003 school year. Data from 6519 surveys meeting the following exclusion criteria was used: (1) age <14 or age >18, and (2) missing or invalid group data. After applying the exclusion criteria and only considering SSW students, the data consisted of 461 SSW students. Two hundred fifty of those students held only 1 job, 204 held multiple jobs, and 7 had missing information on number of jobs held.

### Description of the Population

Overall, 3411 high school students aged 14 to 18 reported they were employed during the school year. Among those working students, 461 (13.5%) reported they were enrolled in a SSW program when they completed the questionnaire; 204 (44%) held multiple jobs. Table 1 reports the demographics and work characteristics for the SSW students, stratified by number of jobs. No significant differences exist in age, gender, type of school district, and how many days worked before

**Table 1.** Demographic and Work Characteristics of SSW Students (N=461)

Characteristic	Levels	Worked 1 Job (n=250)	Worked >1 Job (n=204)	P-value
Age	14	8 (3%)	7 (3%)	0.63
	15	31 (12%)	17 (8%)	
	16	49 (20%)	42 (21%)	
	17	86 (34%)	67 (33%)	
	18	76 (30%)	71 (35%)	
Gender	NR	2 (1%)	2 (1%)	0.816
	Male	109 (44%)	91 (45%)	
	Female	139 (56%)	111 (54%)	
Race	NR	3 (1%)	7 (3%)	0.043
	White	161 (64%)	140 (69%)	
	African-American	43 (17%)	17 (8%)	
	Hispanic	17 (7%)	12 (6%)	
	Other	26 (10%)	28 (14%)	
Type of School District	Rural	19 (8%)	26 (13%)	0.297
	Small Town	12 (5%)	10 (5%)	
	Medium City	197 (79%)	154 (75%)	
	Large City	22 (9%)	14 (7%)	
How late do you work?	NR	30 (12%)	15 (7%)	0.024
	Before 7 PM	95 (38%)	63 (31%)	
	Between 7 PM and 11 PM	116 (46%)	108 (53%)	
	After 11 PM	9 (4%)	18 (9%)	
How many days do you work before 8 AM?	NR	21 (8%)	13 (6%)	0.501
	Never	156 (62%)	120 (59%)	
	1 day	15 (6%)	16 (8%)	
	2 or more days	58 (23%)	55 (27%)	
Number of hours worked per week	NR	2 (1%)	0 (0%)	0.058
	< 5	38 (15%)	31 (15%)	
	6-10	44 (18%)	33 (16%)	
	11-16	59 (24%)	36 (18%)	
	17-22	56 (22%)	44 (22%)	
	23-40	47 (19%)	46 (23%)	
	> 40	4 (2%)	14 (7%)	
Asked to perform a dangerous task	NR	10 (4%)	5 (2%)	0.012
	Yes	19 (8%)	31 (15%)	
	No	221 (88%)	168 (82%)	
Had a near-miss incident	NR	17 (7%)	8 (4%)	0.013
	Yes	37 (15%)	50 (25%)	
	No	196 (78%)	146 (72%)	
Injured at work	NR	16 (6%)	7 (3%)	0.003
	Yes	36 (14%)	53 (26%)	
	No	198 (79%)	144 (71%)	
Received safety training	NR	8 (3%)	4 (2%)	0.928
	Yes	180 (72%)	148 (73%)	
	No	62 (25%)	52 (25%)	
Informed of legal rights and responsibilities	NR	7 (3%)	4 (2%)	0.15
	Yes	207 (83%)	160 (78%)	
	No	36 (14%)	40 (20%)	

NR=no record.

**Table 2.** Jobs and Tasks Reported by SSW Students, Stratified by Number of Jobs<sup>a</sup>

Types of jobs and tasks	SSW students				P-value
	Worked 1 job (n=250)		Worked >1 job (n=204)		
	N	%	N	%	
Animal care	11	4.4	18	8.8	0.057
Harvesting/planting	6	2.4	11	5.4	0.095
Babysitting/childcare	56	22.4	63	30.9	0.041
Cashier/waitperson	84	33.6	82	40.2	0.147
Dishwashing	40	16.0	40	19.6	0.317
Sales person	29	11.6	48	23.5	0.001
Cleaning tables/floors/rooms	57	22.8	61	29.9	0.087
Stocking shelves	41	16.4	56	27.5	0.004
Cooking/frying	39	15.6	38	18.6	0.397
Other food preparation	34	13.6	36	17.6	0.241
Department store	19	7.6	26	12.7	0.071
Tree/shrub trimming or cutting	2	0.80	11	5.4	0.004
Hardware store	5	2.0	11	5.4	0.514
Carpentry	8	3.2	18	8.8	0.011
Gas station	1	0.4	8	3.9	0.008
Construction	5	2.0	19	9.3	0.001
Lawn mowing	15	6.0	21	10.3	0.092
Roofing	6	2.4	17	8.3	0.005
Painting	11	4.4	17	8.3	0.086
Manufacturing	4	1.6	9	4.4	0.076
Lumber yard	—	—	7	3.4	0.035
Hospital/nursing home/clinic	19	7.6	15	7.4	0.936
Nursing assistant/working with patients	16	6.4	16	7.8	0.562
Hotel/motel/resort	11	4.4	13	6.4	0.345
Newspaper/magazine delivery	2	0.8	7	3.4	0.048
Office assistant/receptionist	22	8.8	26	12.7	0.179
Driver/courier/delivery person	7	2.8	10	4.9	0.242
Other	43	17.2	40	19.6	0.511

<sup>a</sup>Students could choose multiple jobs or tasks.

8 AM, between SSW students working 1 job vs multiple jobs. However, students enrolled in SSW programs who worked only 1 job were more likely to be either Black or Hispanic (24% vs 14%,  $P=0.043$ ). SSW students who worked multiple jobs were more likely to report working after 11 PM (9% vs 4%,  $P=0.024$ ) compared with SSW students who worked only 1 job. On a similar note, SSW students who worked multiple jobs were more likely to work over 40 hours per week (7% vs 2%,  $P=0.058$ ); however, this result does not reach statistical significance.

There were large significant differences in the percent that reported an injury and related outcomes between SSW students with multiple jobs and SSW students with 1 job. Students working multiple jobs were more likely to have been injured at work (26% vs 14%,  $P=0.003$ ), be asked to perform a dangerous task (15% vs 8%,  $P=0.012$ ), and have a near-miss incident where

they were almost injured (25% vs 15%,  $P=0.013$ ). There were no significant differences between the groups regarding students receiving safety training and being informed of legal rights.

### Jobs and Tasks Worked

Table 2 presents the jobs and tasks reported by the SSW students, stratified by number of jobs. Among all SSW students, the jobs/tasks most commonly reported included cashier/waitperson, cleaning tables/floors/rooms, and babysitting/childcare. There were some differences in the profiles of the students. SSW students who held multiple jobs were more likely to report working in babysitting/childcare (30.9% vs 22.4%,  $P=0.041$ ), sales (23.5% vs 11.6%,  $P=0.001$ ), stocking shelves (27.5% vs 16.4%,  $P=0.004$ ), tree/shrub trimming or cutting (5.4% vs 0.80%,  $P=0.004$ ), carpentry (8.8% vs 3.2%,  $P=0.011$ ), gas station (3.9% vs 0.4%,  $P=0.008$ ), construction (9.3% vs 2.0%,  $P=0.001$ ), roofing (8.3% vs 2.4%,  $P=0.005$ ), lumber yard (3.4% vs 0%,  $P=0.035$ ), animal care (8.8% vs 4.4%,  $P=0.057$ ), and newspaper/magazine delivery (3.4% vs 0.8%,  $P=0.048$ ).

### Injuries

There were differences in injuries of the SSW students who worked 1 job vs SSW students who worked multiple jobs.

Among the SSW students who worked 1 job, 36 students (14%) reported being injured, and 60 injuries were reported. The most common injuries were cuts (33%), burns (22%), and bruises (13%). Broken bones, crushed body parts, and sprained muscles accounted for 13% of the reported injuries. Among the 36 injured students, the majority were injured by contact with hot grease or fluids (23%), contact with a knife or sharp object (19%), and falls from ladders, stairs, or flat surfaces (17%).

When evaluating the percent of students injured by job and tasks, the percentage ranged from a low of 0% to a high of 50%. The jobs and tasks with the greatest percentage of students injured included roofing (50%), lawn mowing (31%), driver/courier/delivery person (29%), and other food preparation (28%).

Among the SSW students who worked multiple jobs, 53 students (26%) reported being injured and 108 injuries were



reported. The most common types of injuries reported were the same types of injuries as those reported in the single job group; however, there was a much higher percentage (25%) of reported broken bones, crushed body parts, and sprained muscles in the SSW students who held multiple jobs. Among the SSW students who worked multiple jobs and were injured, the majority were injured by falls from ladders, stairs and flat surfaces (17%), contact with hot grease or fluids (12%), and carrying or lifting an object (11%).

When evaluating the percent of students injured by job and tasks, the percentage ranged from a low of 18% to a high of 71%. The jobs and tasks with the greatest percentage of students injured included roofing (71%), driver/courier/delivery person (60%), construction (58%), manufacturing (56%), and carpentry (56%).

### School Performance and Behavior

Table 3 reports the school performance and behavioral characteristics of the SSW students, stratified by number of jobs. SSW students with multiple jobs were more likely to cut/skip classes 3 or more times (43% vs 28%,  $P=0.002$ ), expect not to graduate (9% vs 4%,  $P=0.028$ ), and have parents/guardians who would not prevent them from working if their job was dangerous to their safety and health (21% vs 14%,  $P=0.048$ ).

### Logistic Regression Findings

Table 4 presents the odds ratios and adjusted odds ratios (AOR) for the outcomes of interest. When adjusting for race, age, and gender, compared with SSW students who worked multiple jobs, SSW students who worked only 1 job were significantly less likely to be injured at work (AOR=0.43, 95% CI=0.26 - 0.72), have a near-miss incident at work (AOR=0.54, 95% CI=0.33 - 0.89), and cut or skip school 3 or more times (AOR=0.55, 95% CI=0.36 - 0.84). While not significant at the  $P=0.05$  level, students who worked 1 job were less likely to perform a dangerous task (AOR=0.54, 95% CI=0.29 - 1.01), more likely to spend time on homework outside of school (AOR=2.05, 95% CI=0.90 - 4.70), and more likely to expect to graduate from high school (AOR=2.16, 95% CI=0.94 - 4.97).

**Table 3.** School Characteristics of SSW Students (N=461)

Characteristic	Levels	Worked 1 Job (n=250)	Worked >1 Job (n=204)	P-value
Late for school	NR	28 (11%)	18 (9%)	0.892
	< 3 times	128 (51%)	106 (52%)	
	≥ 3 times	94 (38%)	80 (39%)	
Cut/skipped classes	NR	28 (11%)	16 (8%)	0.002
	< 3 times	152 (61%)	100 (49%)	
	≥ 3 times	70 (28%)	88 (43%)	
Unexcused absence	NR	29 (12%)	16 (8%)	0.17
	< 3 times	129 (52%)	97 (48%)	
	≥ 3 times	92 (37%)	91 (45%)	
Time spent on homework IN school	NR	29 (12%)	17 (8%)	0.509
	> 90 minutes	14 (6%)	15 (7%)	
	≤ 90 minutes	207 (83%)	172 (84%)	
Time spent on homework OUT of school	NR	27 (11%)	17 (8%)	0.092
	> 120 minutes	10 (4%)	16 (8%)	
	≤ 120 minutes	213 (85%)	171 (84%)	
GPA > 2.0	NR	32 (13%)	18 (9%)	0.597
	GPA ≤ 2.0	40 (16%)	38 (19%)	
	GPA > 2.0	178 (71%)	148 (73%)	
Expect to graduate	NR	31 (12%)	18 (9%)	0.028
	No	10 (4%)	19 (9%)	
	Yes	209 (84%)	167 (82%)	
Parents prevented child from working because of grades	NR	31 (12%)	21 (10%)	0.587
	Yes	155 (62%)	134 (66%)	
	No	64 (26%)	49 (24%)	
Parents prevented child from working because of safety and health	NR	32 (13%)	20 (10%)	0.048
	Yes	184 (74%)	141 (69%)	
	No	34 (14%)	43 (21%)	

When adjusting for the additional variables described in the methods section, SSW students who worked 1 job were less likely to be injured at work (AOR=0.64, 95% CI=0.34 - 1.20), have a near-miss incident (AOR=0.64 95% CI=0.37,-1.11), perform a dangerous task (AOR=0.62, 95% CI=0.30 - 1.29), and cut or skip school 3 or more times (AOR=0.65, 95% CI=0.40-1.08), although these findings were not statistically significant.

### DISCUSSION

This study is the first to evaluate the effect of multiple jobs on students enrolled in SSW programs. SSW programs were developed with the idea of preparing youth for transitioning into the workforce upon high school graduation. These programs combine school-based activities with work-based activities so that youth are trained with the skills necessary to succeed in the workplace. In this study, we compared injury and school performance among students who worked only in the SSW job (54%) and students who worked in the SSW job plus

**Table 4.** Outcome Comparison of SSW Students Working 1 Job vs. SSW Students Working Multiple Jobs

Injury Outcomes of Interest	Unadjusted OR (95% CI)	Adjusted OR <sup>a</sup> (95% CI)	Adjusted OR <sup>b</sup> (95% CI)
	1 Job vs >1 Job	1 Job vs >1 Job	1 Job vs >1 Job
Informed of legal rights and responsibilities	1.44 (0.88, 2.36), 0.151	1.43 (0.85, 2.42), 0.174	0.97 (0.51, 1.87), 0.937
Received safety training	1.02 (0.66, 1.56), 0.928	1.11 (0.71, 1.72), 0.651	0.90 (0.53, 1.53), 0.690
Performed a dangerous task	0.47 (0.25, 0.85), 0.013	0.54 (0.29, 1.01), 0.055	0.62 (0.30, 1.29), 0.201
Near-miss incident	0.55 (0.34, 0.89), 0.014	0.54 (0.33, 0.89), 0.015	0.64 (0.37, 1.11), 0.112
Injured at work	0.49 (0.31, 0.79), 0.004	0.43 (0.26, 0.72), 0.001	0.64 (0.34, 1.20), 0.165
Injury affected normal activity (>3 days)	0.81 (0.33, 1.98), 0.642	0.60 (0.22, 1.63), 0.320	1.42 (0.26, 7.67), 0.686
School Performance Outcomes of Interest	Unadjusted OR (95% CI)	Adjusted OR <sup>a</sup> (95% CI)	Adjusted OR <sup>c</sup> (95% CI)
Cut/skipped classes (3 or more times)	0.52 (0.35, 0.78), 0.002	0.55 (0.36, 0.84), 0.005	0.65 (0.40, 1.08), 0.094
Absent from school (3 or more times)	0.76 (0.51, 1.12), 0.170	0.74 (0.50, 1.11), 0.148	1.00 (0.62, 1.61), 0.993
Expect to graduate	2.38 (1.08, 5.25), 0.032	2.16 (0.94, 4.97), 0.071	0.91 (0.31, 2.63), 0.860
Time spent on homework in school (≤ 90 mins)	1.29 (0.61, 2.75), 0.510	1.40 (0.65, 3.03), 0.395	1.03 (0.40, 2.67), 0.949
Time spent on homework outside of school (≤ 120 mins)	1.99 (0.88, 4.50), 0.097	2.05 (0.90, 4.70), 0.089	2.20 (0.79, 6.16), 0.132
GPA > 2.0	1.14 (0.70, 1.87), 0.597	1.20 (0.72, 2.01), 0.485	1.00 (0.55, 1.82), 0.991

Referent Group = teens with one job

<sup>a</sup> Adjusted for age, gender, and race.

<sup>b</sup> Adjusted for age, gender, race, hours worked per week, how late at night worked, and the injury outcome variables.

<sup>c</sup> Adjusted for age, gender, race, hours worked per week, how late at night worked, and the school performance variables.

Abbreviation: OR = odds ratio.

other jobs (44%). This study was undertaken because there is limited information regarding SSW programs, and the majority of information available is description of demographic profiles of the schools involved in such programs. No research has evaluated the health and safety of students in SSW programs nor looked at the school performance outcomes of students in SSW programs.

Clearly, students who are working multiple jobs are more likely to be in circumstances that are potentially harmful to themselves and their school performance. In our study, students working multiple jobs were more likely to work over 40 hours per week, more likely to work after 11 PM during the school week, more likely to be asked to do a dangerous task, and more likely to report having a near-miss incident at work. When controlling for the differences in work characteristics between SSW students with 1 job and SSW students with multiple jobs, those students working multiple jobs were 1.6 times more likely to be injured compared to those working 1 job. While this is not a statistically significant finding, the elevated odds ratio does indicate that working multiple jobs has an effect on work-related injury.

Additional explanations for the difference in injury can be found by looking at the job profiles of students working only the SSW job compared with students working multiple jobs. Many of the jobs considered more hazardous on the list are being worked by students who work multiple jobs. For example, compare multiple vs 1 job: construction (9.3% versus 2%), tree/shrub trimming or cutting (5.4% vs 0.80%), roofing (8.3% vs 2.4%), and carpentry (8.8% vs 3.2%).

Based on the concept of SSW programs where an apprenticeship model is used, we would expect that students enrolled in the program receive occupational safety and health training, which would include information regarding child labor laws. While more than 70% of both SSW groups reported receiving safety training, and greater than 75% reported being informed of their legal rights, SSW students working multiple jobs were violating various labor laws that put their safety at risk. The question that arises then, is who is responsible for ensuring that labor laws regarding the number of hours worked per week, night-time hours worked, and jobs being done are followed by SSW students? Do we expect that employers are solely responsible or do the schools have a role in protecting students who take part in SSW programs, even in multiple jobs? Or should we expect a combination of school and employer responsibility?

The *Wisconsin Work-Based Learning Guide* clearly defines the roles of both students and employers in SSW programs. For employers, for example, it is mandated that they abide by federal child labor laws; ensure that any work performed under the label of hazardous occupation shall be under the direct and close supervision of a qualified and experienced person; ensure that the work of a youth apprentice, or any other student learner, in any occupation labeled as hazardous should be periodic and of short duration; and ensure that all safety instruction will be provided and understood by the youth apprentice.<sup>7</sup> This guide discusses the SSW jobs, but for SSW students working multiple jobs, where is the assurance that labor laws are being followed once the student leaves the SSW job and goes to work at another job?

In this study, parents of students who worked multiple jobs were less likely to prevent their children from working if the job affected their safety and health. This points to the fact that parents of teens cannot be relied on to ensure that labor laws are being followed and that youth are safe at work. Parents may not know labor laws, may not be informed of what the teen is doing at work, or simply may not care. Either way, protection of young workers must come from elsewhere.

In addition to workplace safety, many of the academic performance outcomes were worse for students who worked multiple jobs. For example, among students working multiple jobs, 9% did not expect to graduate, 43% cut or skipped classes 3 or more times, and 45% had 3 or more unexcused absences. This is in sharp contrast with students who worked 1 job, where 4% did not expect to graduate, 28% cut or skipped classes 3 or more times, and 37% had 3 or more unexcused absences. While the SSW program promotes work experience, it also needs to promote academic performance so that youth learn and graduate. The Act clearly states that its purpose is “to help all students attain high academic and occupational standards” and “to motivate all youths, including low-achieving youths, school dropouts, and youths with disabilities, to stay in or return to school or a classroom setting.”<sup>2</sup> Allowing students to slip by because they are in work programs does not benefit the student or the employer, particularly in an ever-changing economy where job stability is not certain. A high school education is needed so that youth have the opportunity to transition jobs or return to education in the future.

This study did have some limitations. There may be selection bias, as this study was conducted with students in 1 state. There was a wide variety of schools selected to participate in the study; however, because Wisconsin was a model for the federal School-To-Work Opportunities Act, it may have some SSW programs available to students that other states do not. Because we did not focus specifically on the type of SSW program and focused only on the overall participation, we believe that the bias is limited. Another limitation of the data is that we cannot specifically determine what jobs or tasks were associated with a reported injury. During the survey, students selected multiple jobs and tasks, and there is no possible way of deciphering which job or task led to the reported injury. However, we are able to evaluate the jobs and tasks and compare the profiles to evaluate whether SSW students working multiple jobs were greatly different than SSW students working 1 job. Furthermore, we presented the jobs and tasks with the highest percentage of injuries for both working groups. An additional limitation of this study is that the SSW data was collected in 2003 but not analyzed until 2009. While the majority of teens predominately work in the service sector, there may be some

differences of jobs or work characteristics in 2011, due to the change in the economic climate. Additionally, there may have been some changes to the SSW programs. The final limitation of this study may be that the minority population in Wisconsin is small compared to many other states. In 2009, the minority population made up 10.6% of Wisconsin.<sup>11</sup>

This study has shed light on students in SSW programs, clearly noting that many SSW students are employed in multiple jobs. Because many SSW students are working multiple jobs and suffering injury and some poorer school outcomes, compared to SSW students working a single job, we must concern ourselves with the importance of labor laws, safety and health, and school performance for these students. Much more research is needed to understand both work-related safety and the education of students working multiple jobs who are part of the SSW programs.

**Funding/Support:** This study was funded by NIOSH grant R03OH008957–“Safety and Injury Among Teens Enrolled in School-To-Work Apprenticeship Programs.”

**Financial Disclosure:** None declared.

---

## REFERENCES

1. US General Accounting Office. Child labor: Labor can strengthen its efforts to protect children who work. Washington, DC; 2002.
2. School-To-Work Opportunities Act of 1994 [Online]. <http://www.fessler.com/SBE/act.htm>. Accessed June 30, 2011.
3. Joyce M, Neumark D. School-to-Work programs: information from two surveys. *Monthly Labor Rev.* 2001;8:38-50.
4. Visher MG, Lauen D, Merola L, Medrich E. School-To-Work in the 1990s. a look at programs and practices in American high schools. Berkeley, CA: MPR Associates, Inc;1998.
5. US Department of Education. School and Staffing Survey, Public School Questionnaire 2003-2004. Washington, DC;2004.
6. US General Accounting Office. Transition from School to Work: States are Developing New Strategies to Prepare Students for Jobs. Washington, DC;1993.
7. *Wisconsin Work-Based Learning Guide*. Wisconsin Department of Public Instruction [Online]. Available at: <http://dpi.wi.gov/cte/pdf/wblguid2.pdf>. Accessed June 30, 2011.
8. Gore S, Kadish S, Aseeltine RH. Career centered high school education and post-high school career adaptation. *Am J Community Psychol.* 2003;32:77-88.
9. Neumark D, Rothstein D. Do School-to-Work Programs Help the “Forgotten Half?” Cambridge, MA: National Bureau of Economic Research, Working Paper 11636;2005.
10. Hughes KL, Bailey TR, Mechur MJ. School-to-Work: Making a Difference in Education. A Research Report to America. New York, NY: Institute of Education and the Economy, Columbia University;2001.
11. US Census Bureau [Online]. <http://quickfacts.census.gov/qfd/states/55000.html>. Accessed June 30, 2011.

advancing the art & science of medicine in the midwest

**WMJ**

*WMJ* (ISSN 1098-1861) is published through a collaboration between The Medical College of Wisconsin and The University of Wisconsin School of Medicine and Public Health. The mission of *WMJ* is to provide an opportunity to publish original research, case reports, review articles, and essays about current medical and public health issues.

© 2011 Board of Regents of the University of Wisconsin System and The Medical College of Wisconsin, Inc.

**Visit [www.wmjonline.org](http://www.wmjonline.org) to learn more.**