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## Work intensity and substance use among adolescents employed part-time in entry-level jobs

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### Abstract

This study investigated the relationship between number of hours worked, or work intensity, and substance use in a sample of adolescent employees of a supermarket chain. Employees working half-time or more per week (high-intensity hours) were over three times as likely to smoke compared to those working an average of 10 hours or less per week (low-intensity hours). Males working a high intensity number of hours were more than twice as likely to drink compared to males working at low intensity. Utilizing participants drawn from a uniform employment setting, the research findings add to the growing body of evidence linking work intensity with adolescent substance use.

**Keywords:** Work intensity, substance use, adolescent, alcohol, cigarettes, public health.

### Introduction

During the adolescent years, a large number of youth are employed in a variety of work settings. Potential benefits of part-time employment include gaining valuable work experience and learning how to handle new responsibilities. Work experiences may also facilitate a sense of independence, identity development, and promote other developmental goals of adolescence. However, for some youth employment may provide increased opportunities to engage in risk behaviors. In fact, evidence is accumulating that there is a positive association between employment and substance use among young people in the workforce. Work intensity, the number of hours worked, has been found in several studies to be positively associated with tobacco use (1-4) and alcohol use (1,2,4,5).

A number of additional studies have identified subgroup differences in the relationship between work intensity and substance use. Some research has examined whether this relationship depends on the

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specific substance examined. Although the findings are mixed, there is some evidence that the link between work intensity and alcohol use is stronger than the corresponding link with tobacco use (6). Other researchers have identified differences in the relationship between work intensity and substance use according to race/ethnicity and/or gender. Johnson (7) found that more hours worked was positively associated with substance use among white adolescents, but was not consistently related among minority adolescents. A small number of studies have examined gender differences, finding hours worked to be associated with cigarette smoking for white males, but not for white females (2), or a weaker association between work intensity and alcohol use for females, compared to males (1).

In order to fully understand the relationship between work intensity and substance use, it is important to recognize that workplaces and job types are likely to differ in a number of relevant ways. Indeed, as stated by Zimmer-Gembeck and Mortimer (8) "The experience of adolescent work, including tasks and responsibilities, rewards, workplace relationships, and the meanings of these experiences, take fundamentally different forms in distinct historical, sociocultural, institutional, and social class contexts". Some work contexts provide the opportunity to develop work-related technical skills, interpersonal skills in areas such as management and conflict resolution, and/or provide extensive adult mentorship and supervision, and these positions may be associated with less antisocial behavior (9). Some youth that work in family-owned businesses have been found to use substances less than others (10). On the other hand, many employers hire large numbers of young people for unskilled or low-skilled labor for relatively brief periods of time and therefore may be less likely to provide training, mentorship, or adult supervision. Adolescents whose work experiences do not provide opportunities for skill development and/or access to adult role models or mentors, such as in the low-wage retail and service positions commonly available to adolescents, may be at greater risk for substance use. For example, youth employed in low-wage, service sector jobs have been found to have a heightened risk for delinquency (11).

In light of this, it is important to more closely examine not only the extent of employment and its

relation to adolescent problem behavior, but also investigate this relationship in particular workplace contexts. A limitation of most studies on this topic is that they draw from large national databases (i.e., National Longitudinal Study of Adolescent Health) and/or school-based samples, in which youth are employed in a variety of industries and job types. A goal of the present study is to examine the relationship between work intensity and substance use in a particular work setting/industry among employees of a common job type – that is, entry-level, low-skilled, part-time positions in a large supermarket chain. This paper examines the relationship between work intensity and cigarette and alcohol use in this sample, as well as potential gender differences in this association.

## Methods

The sample included 648 adolescent and young adult employees at a large supermarket chain in the northeast. All subjects were between the ages of 15 and 20 years old, with a mean age of 18.38 (SD=1.13). More than half 344 (53.1%) of the subjects were male and 304 (46.9%) were female. The majority of the sample (94.6%) was not of Hispanic/Latino descent, and included the following racial characteristics: 91.8% White, 6.3% Black/African American, 3.5% American Indian, 1.1% Native Hawaiian or other Pacific Islander, 1.7% Asian, and .3% Alaska Native.

The majority of the subjects 508 (78.4%) reported being currently enrolled in school either full-time or part-time. Education levels of participants were as follows: 351 (54.1%) less than high school degree; 142 (22%) highest level of education was a high school degree; 97 (15.0%) coursework after high school but no degree; 12 (1.8%) obtained an Associates or Bachelor's degree; 2 (.3%) reported graduate coursework but no degree; and 44 (6.8%) did not provide data on education level. The majority 587 (90.6%) of the subjects were never married and 597 (92.1%) lived at home with a parent(s) or foster parent(s).

Participants worked in urban (33.3%), suburban (37.8%), and rural (28.9%) worksites (N=20). Participants worked part-time and held positions such

as grocery bagger, grocery cashier, grocery stocker, produce clerk, and food preparation worker. Although data on income was not collected, these positions are traditionally considered entry-level and low-wage. Additionally, these positions require few skills and offer limited access to adult mentors. Employees who held managerial roles (i.e., department manager, assistant manager) were not included in the present sample. Approximately half of the sample (48.3%) worked at their current position for less than one year.

The sample examined in this study was part of a larger study that included young people up to the age of 24 years. In this paper, we restricted the sample to those subjects under 21 years of age in order to focus on predictors of smoking and underage drinking. Those participants that provided information on gender, date of birth, substance use, and the number of hours worked in the past month were included in the present analysis.

## **Procedures**

Study participants were recruited as part of a randomized control trial evaluating a workplace-based substance use prevention program. The data for the present study were drawn from the baseline data collection, prior to any intervention. Project field staff recruited subjects using posters at the worksites and flyers attached to employees' paychecks. Field staff distributed and collected consent forms and surveys on site at each worksite. All subjects completed consent forms and parental consent was obtained for minors. The consent form included a description of the larger study, which involved attendance in a skills-based wellness workshop and the completion of several follow-up assessments. Additionally, the consent form indicated that participation in the study would not impact employment status and that individual survey responses would not be shared with their employer or parents. All procedures were approved by an Institutional Review Board.

## **Measures**

The twenty-minute, paper-and-pencil survey included standard demographic items and scales assessing

substance use, work variables, and intervention specific variables. Demographic items included age, gender, race, ethnicity, marital status, education level, and household composition. In order to assess lifetime use of cigarettes and alcohol, participants were asked to indicate yes/no to "Have you ever smoked all or part of a cigarette?" and "Have you ever, even once, had a drink of any type of alcoholic beverage?" To assess past 30-day substance use, participants were asked "How long has it been since you last smoked part or all of a cigarette?" and "How long has it been since you last drank an alcoholic beverage?" with response options of within the past 30 days, more than 30 days ago, but within the past 12 months, and more than 12 months ago. Similar items were used to assess smokeless tobacco use, marijuana use, and the use of other illicit drugs, although this data is not included in this study. Demographic items and substance use items were drawn from well-established tools such as the National Outcome Measures (NOMS), the Government Performance and Results Act (GPRA), and the National Survey on Drug Use and Health (NSDUH). Subjects were also asked to indicate the number of hours worked in the past four weeks along with other items from the World Health Organization Health and Work Performance Questionnaire (HPQ; Kessler et al., 2003). There is little consensus in the literature regarding the classification of work intensity. Some researchers have used a cutoff of 20 or more hours worked per week (5, 13), others have categorized hours worked in five-hour increments (2, 14), and others have categorized hours worked in ten-hour increments (3, 4). In light of some research suggesting that working ten hours or less per week may be protective in terms of risk of substance use (3), work intensity is classified here as "low-intensity" for those working 10 or less hours per week (1-40 hours per month), "moderate-intensity" for those working more than 10 but no more than 20 hours per week (41-80 hours per month), and "high-intensity" for those working 21 or more hours per week (81-140 hours per month) as a part time employee.

## **Results**

Chi-square analyses were run to examine the prevalence of lifetime and past 30-day cigarette and

alcohol use among male and female participants. As indicated in table 1, females had higher frequencies of lifetime cigarette use chi-square (2, N = 146) = 5.84,  $p < .05$  and alcohol use chi-square (2, N = 229) = 9.97,  $p < .01$  than males. Although not significant, this gender difference existed for past 30-day cigarette use, but not for past 30-day alcohol use.

An additional chi-square analysis was run to determine if there were any significant differences in

the frequency of number of hours worked in the past four weeks between males and females. Self-reported number of hours worked in the past four weeks was collapsed into a categorical variable with three levels (1-40 hours, 41-80 hours, and 81-140 hours). There were no statistically significant differences chi-square (2, N = 146) = .89 (see table 2).

**Table 1. Prevalence of lifetime and past 30 Day cigarette and alcohol use**

Substance	Gender		
	Males [N=344]	Females [N=304]	Chi-square
<b>Lifetime</b>			
Cigarettes	133 (38.7)	146 (48.0)	5.84*
Alcohol	219 (63.7)	229 (75.3)	9.97**
<b>Past 30 Day</b>			
Cigarettes	59 (17.2)	70 (23.0)	3.49+
Alcohol	116 (33.7)	118 (38.8)	1.82

Note: + $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ .

**Table 2. Hours worked past month**

Hours	Gender	
	Males [N=344]	Females [N=304]
1-40	99 (28.8)	97 (31.9)
41-80	131 (38.1)	107 (35.2)
81-140	114 (33.1)	100 (32.9)

Binary logistic regression analyses were used to predict male and female participants' current cigarette and alcohol use based on number of hours worked in the past four weeks. The dependent variables used for these analyses were dichotomous self-report past 30-day cigarette and alcohol use scores.

These variables were coded as either 1 for reported use or 0 for non-use. As seen in table 3, working between 81 and 140 hours significantly predicted cigarette use for males (OR = 3.32, 95% CI = 1.53, 7.20). Alcohol use among male participants was also significantly predicted by

number of hours worked. Working between 41 and 80 hours in the past four weeks significantly predicted current alcohol use (OR = 1.89, 95% CI = 1.04, 3.43), as did working between 81 and 140 hours (OR = 2.54, 95% CI = 1.39, 4.65).

For female participants, working 81 to 140 hours in the past four weeks significantly predicted current cigarette use (OR = 3.19, 95% CI = 1.59, 6.43) (see table 4).

**Table 3. Logistic regression analysis predicting males' current cigarette and alcohol use**

Variable	N	B	S.E.	OR (95% CI)	R <sup>2</sup>
<b>Cigarettes</b>					.058
1-40 hours	99				
41-80 hours	131	.35	.42	1.42 (.62, 3.22)	
81-140 hours	114	1.20**	.39	3.32 (1.53, 7.20)	
<b>Alcohol</b>					.039
1-40 hours	99				
41-80 hours	131	.64*	.30	1.89 (1.04, 3.43)	
81-140 hours	114	.93**	.31	2.54 (1.39, 4.65)	

Note: \*p<.05, \*\*p<.01.

**Table 4. Logistic regression analysis predicting females' current cigarette and alcohol use**

Variable	N	B	S.E.	OR (95% CI)	R <sup>2</sup>
<b>Cigarettes</b>					.061
1-40 hours	97				
41-80 hours	107	.37	.38	1.45 (.69, 3.04)	
81-140 hours	100	1.16**	.36	3.19 (1.59, 6.43)	
<b>Alcohol</b>					.011
1-40 hours	97				
41-80 hours	107	-.11	.29	.90 (.51, 1.59)	
81-140 hours	100	.33	.29	1.39 (.78, 2.45)	

Note: \*\*p<.01.

## Discussion

As adolescents explore new roles and negotiate various developmental challenges, they increasingly begin to make independent decisions about their own behaviors in a variety of domains. Many young people decide to enter the workforce and obtain part-time employment outside the home. Historically, adolescent employment was more likely to consist of apprenticeship-type jobs, working on the family farm, or jobs taken to help a family through difficult economic times. However, in recent years, adolescents typically work part-time to make spending money for themselves or to save for their education rather than to develop a vocational identity or contribute to the family income. This is particularly

true of the participants in this study, who worked in low-skilled, entry-level jobs.

In the present study, we found that young male and female employees working high-intensity hours (81 to 140 hours per month) were more than three times as likely to smoke cigarettes compared to those working low-intensity hours (40 hours or less per month). Furthermore, young men working moderate- or high-intensity hours were more likely to drink alcohol compared to young men working low-intensity hours, although work intensity was not associated with alcohol use for young women. These findings provide some evidence that employment in low-skill, entry-level jobs at certain levels of work intensity, is associated with an elevated risk of substance use for youth. Male employees may be at particular risk for alcohol use at moderate- and high-

intensity work hours. The absence of a relationship between hours worked and substance use at low-intensity work hours suggests that the number of hours worked is a critical factor in understanding risk of substance use among adolescent and young adult employees.

Our findings are consistent with a growing number of studies that have found higher rates of cigarette use, alcohol use, illicit drug use, and heavy substance among employed adolescents (1-3,5,15-16). These findings, along with other studies linking the intensity of hours worked to increases in risk for sexual risk-taking (17), delinquency (13) and psychological distress (4), suggest that youth who work are an important target population for preventive interventions. Research is needed to test the feasibility and effectiveness of preventive interventions targeting youth in the workplace.

A limitation of this study is the cross-sectional design, which limits the ability to examine the direction of effects. Work environments may increase substance use behavior through socialization processes such as workplace norms supporting use, greater availability of drugs from older coworkers, substance use at after-work social gatherings, and the availability of spending money that teens may decide to spend on drugs (18,19). On the other hand, adolescents with specific characteristics or behaviors may choose to work longer hours, and such selection processes may help explain the link between work intensity and substance use. Research has shown that students who receive poor grades or do not plan to attend college were more likely to want and attain higher levels of work intensity (14), and that disengagement from school often predicts entry into the workforce (13). Students who desire to work long hours have been found to engage in substance use and that this desire often exists prior to entering the workforce (14).

In contrast, some studies have found increases in problem behaviors among employed adolescents even after considering pre-employment differences. For example, Ramchand, Ialongo and Chilcoat (3) reported increased rates of tobacco use initiation among employed adolescents independent of selection effects. Steinberg, Fegley and Dornbusch (13) found support for both selection effects and socialization processes. These authors state that "In essence the

operative process is not selection or socialization, but a dynamic and reciprocal process, in which adolescents both actively choose and are at the same time affected by the environments they encounter" (p. 178). Future research should use longitudinal designs to further examine the relative importance of selection and socialization processes in workplace substance use among youth.

In summary, the present findings suggest that for some adolescents, working more than half-time in low-skilled, entry-level positions can be associated with increased substance use risk. Workplace substance use prevention initiatives for this segment of the workforce may be warranted. More research is needed to help identify the work contexts, job types, and job responsibilities for which long work hours are related to adolescent substance use risk. This research would help to inform prevention efforts and assist policy makers in addressing this issue.

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