

Americans: use of focus groups for questionnaire development. *Ethn Dis*. 1998;8(2):184–197.

37. McGee BB, Richardson V, Johnson GS, et al. Perceptions of factors influencing healthful food consumption behavior in the Lower Mississippi Delta: focus group findings. *J Nutr Educ Behav*. 2008;40(2):102–109.

38. Dietz W. Focus group data pertinent to the prevention of obesity in African Americans. *Am J Med Sci*. 2001;322(5):286–289.

39. Miller ST, Mushi C, Ahmed NU, Larson C, McClellan L, Marrs M. Using focus groups to understand health-related practices and perceptions of African Americans: Nashville REACH 2010 preliminary findings. *Ethn Dis*. 2004;14(3 suppl 1):S70–S76.

40. El-Kebbi IM, Bacha GA, Ziemer DC, et al. Diabetes in urban African Americans, V: use of discussion groups to identify barriers to dietary therapy among low-income individuals with non-insulin-dependent diabetes mellitus. *Diabetes Educ*. 1996;22(5):488–492.

41. Kumanyika S. Nutrition and chronic disease prevention: priorities for US minority groups. *Nutr Rev*. 2006;64(2 pt 2):S9–S14.

42. Centers for Disease Control and Prevention. Fruit and vegetable consumption among adults—United States, 2005. *MMWR Morb Mortal Wkly Rep*. 2007;56(10):213–217.

43. Westenhoefer J. Age and gender dependent profile of food choice. *Forum Nutr*. 2005;57:44–51.

44. D'Andre R. *The Development of Cognitive Anthropology*. Cambridge, England: Cambridge University Press; 1995.

45. Spradley JP. *The Ethnographic Interview*. New York, NY: Holt, Rinehart, & Winston; 1979.

46. Romney AK, Weller SC, Batchelder WH. Culture as consensus: a theory of culture and informant accuracy. *Am Anthropol*. 1986;88(2):313–338.

47. Center for Community Partnerships, University of Pennsylvania Library System, Cartographic Modeling Laboratory at the University of Pennsylvania, Wharton GIS Laboratory. West Philadelphia data and information resources (West Philly data). Available at: http://westphillydata.library.upenn.edu/info_R_Neigh_Cobbscreek.htm. Accessed June 4, 2008.

48. Weller SC, Romney AK. *Systematic Data Collection*. Newbury Park, CA: Sage; 1988.

49. Schrauf RW. English use among older bilingual immigrants in linguistically concentrated neighborhoods: social proficiency and internal speech as intracultural variation. *J Cross Cult Gerontol*. 2009;24(2):157–179.

50. Fehr B. Prototype analysis of the concepts of love and commitment. *J Pers Soc Psychol*. 1988;55:557–559.

51. Smith JJ, Borgatti SP. Saliency counts—and so does accuracy: correcting and updating a measure for free-list-item saliency. *J Linguist Anthropol*. 1998;7(2):208–209.

52. Glanz K, Basil M, Maibach E, Goldberg J, Snyder D. Why Americans eat what they do: taste, nutrition, cost, convenience, and weight control concerns as influences on food consumption. *J Am Diet Assoc*. 1998;98(10):1118–1126.

53. Hargreaves MK, Schlundt DG, Buchowski MS. Contextual factors influencing the eating behaviours of African American women: a focus group investigation. *Ethn Health*. 2002;7(3):133–147.

Effects of Work Permits on Illegal Employment Among Youth Workers: Findings of a School-Based Survey on Child Labor Violations

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We compared self-reported child labor violations between teenagers with and without work permits. Data were obtained from a school-based survey of working teenagers in 16 randomly selected high schools in North Carolina. We examined associations between work hour violations (performance of illegal tasks), and possession of a work permit. Work permits appear to be protective against performance of illegal tasks but not against work hour violations, demonstrating the need for stricter enforcement policies and improvements in work permit screening processes. (*Am J Public Health*. 2010;100:635–637. doi:10.2105/AJPH.2009.160812)

North Carolina is one of 41 states requiring working minors younger than 18 years to obtain work permits.¹ To date, there have been no systematic evaluations of existing federal and state work permit regulations designed to protect young people from the deleterious effects of illegal employment.² Although 1 study revealed that 40% of adolescents were working in violation of work permit requirements and 2% to 11% were working in violation of hour provisions, that study lacked an adequate sample size of adolescents younger than 16 years, thus violations in this subcategory were underestimated.³

We examined differences in self-reported work hour violations and hazardous order

violations between teenagers in North Carolina with work permits and those without permits. Findings such as those from this study have implications for interventions and policies related to youth workers in other states that mandate the issuance of work permits.

METHODS

Cross-sectional surveys of students from 16 high schools in North Carolina were conducted in fall 2005. Details of the survey methods and the sociodemographic variables assessed are described elsewhere.⁴ Respondents reported whether they had a work permit for the paid job in which they had worked the most hours in the 2 years prior to the survey (they could also respond “don’t know”). They were asked to refer to this job when responding to all questions related to work experience.

Hazardous order violations were defined as performance by adolescents younger than 18 years of any of 11 illegal tasks and use of equipment prohibited by North Carolina and federal child labor laws. Work hour violations were defined as reported violations of the daily and weekly work hour standards for adolescents aged 14 to 15 years and of hour restrictions on school nights for adolescents younger than 18 years.

Teenagers younger than 16 years were queried about work during and outside of the school year. In the case of working late on a school night, we applied the federal and state standard of working no later than 7 PM for adolescents younger than 16 years⁵ and the state standard of 11 PM for adolescents aged 16 to 17 years.⁶

We weighted our data to adjust for differences in selection probabilities.⁷ Using survey logistic procedures and SAS software,⁸ we conducted univariate analyses to test the effects of work permits on violations.

RESULTS

The sample consisted of 844 eligible working students. We calculated response rates using the Council of American Survey Research Organizations method, which adjusts for the number of ineligible nonrespondents; our response rates ranged from 73.8% to 86.6%. Details on response rate

TABLE 1—Numbers and Percentages of Participants Reporting Work Hours Considered Violations for Adolescents Younger Than 16 Years: North Carolina, 2005

	Participants Younger Than 16 Years, No. (%)	Participants Aged 16–17 Years, No. (%)
Worked less than 18 h/wk (during a school week)		
Never	97 (47.31)	137 (38.40)
1–4 wk/mo	49 (23.87)	117 (32.86)
Every week in a month	59 (28.82)	102 (28.74)
Most hours worked on a school day		
≤3	62 (31.67)	50 (14.55)
4–5	52 (26.53)	115 (33.65)
≥6	82 (41.80)	178 (51.81)
Worked after 7 PM on a school night		
Never	94 (45.75)	73 (20.00)
1–4 nights/wk	82 (39.87)	209 (57.52)
≥5 nights/wk	30 (14.38)	82 (22.49)
Worked after 11 PM on a school night ^a		
Never	169 (86.76)	284 (85.52)
1–2 nights/wk	12 (6.02)	27 (8.15)
≥3 nights/wk	14 (7.22)	21 (6.34)
Worked more than 40 h/wk (during a nonschool week)		
Never	164 (56.23)	286 (67.26)
<1–2 wk/mo	41 (13.91)	67 (15.79)
≥3 wk/mo	87 (29.85)	72 (16.96)
Worked more than 8 hours on a weekend day		
Never	85 (31.60)	117 (29.06)
1–2 d/mo	52 (19.39)	96 (23.84)
≥3 d/mo	72 (26.91)	115 (28.76)
Every weekend in a month	60 (22.10)	74 (18.34)

Note. Data are weighted. “Don’t know” and “not applicable” responses were not included in the analyses, and thus percentages do not sum to 100%. Missing values are not shown and were not included in the denominators of calculated percentages.

^aThese work hours are considered reported violations not only for adolescents younger than 16 years but also for older adolescents aged 16 to 17 years.

calculations and descriptive statistics are provided elsewhere.⁴

Many adolescents younger than 16 years had work hour violations (Table 1). Work permits had no protective effect with regard to working late on school nights, nor did they have an impact in terms of violations of daily and weekly work hours when school was in session (Table 2).

As can be seen in Table 2, young people without work permits were 3.5 times as likely as those with work permits to use a power saw (odds ratio [OR]=1.54; 95% confidence interval [CI]=1.74, 7.09), 2.1 times as likely to operate other power tools or appliances (OR=2.08; 95% CI=1.54, 2.79), 2.2 times as likely to use forklifts (OR=2.22; 95%

CI=1.10, 4.47), and 3 times as likely to use power nail guns or staplers (OR=2.97; 95% CI=2.03, 4.33).

DISCUSSION

Work permits have a protective effect with regard to selected illegal hazardous tasks. However, our findings that type-of-work violations continue to occur in some cases among adolescents with work permits suggest that current screening processes do not adequately determine whether young people are working in legal occupations. Also, violations may result when employers switch young workers from an initial job they can legally perform to an illegal one.

We found that, irrespective of work permit issuance, young people worked long and late hours in violation of child labor laws. This shortcoming is not surprising given that the current employment certificate in North Carolina requires employers to describe a job but not the hours associated with it.

Despite their limitations, work permits appear to confer benefits in that they are negatively associated with several prohibited occupations. By listing restrictions, they can help inform young people about labor laws and their legal rights.

Effective December 1, 2009, a new statute enacted by North Carolina increased the maximum allowable penalty from \$250 to \$500 for the first child labor violation and to \$1000 for each subsequent violation.⁹ This statute retained the guideline that the amount of the penalty takes into account the gravity of the violation and the size of the employer’s business.

On the basis of our findings, we recommend that the North Carolina Department of Labor implement this new law by assigning sufficient gravity to all child labor violations, including failure to obtain a work permit, so that the resulting penalties are increased to levels sufficiently high to ensure maximum compliance.⁹ Enforcement should be supplemented by other compliance efforts, namely education and outreach, public awareness campaigns, and partnerships. Designating commendable workplaces that provide healthy, safe, and beneficial environments for young workers is recommended to encourage employers to improve working conditions.

The beneficial effects of work permits could also be improved by distribution of better educational materials through the permit issuance process, including improved training of permit issuers, employers, and young workers. Educational initiatives and outreach activities, referred to as compliance assistance, that target teachers and parents as well as employers are examples of potential approaches.¹⁰

Screening for work hour restrictions in the work permit system is a logical next step for increasing work hour compliance. A requirement should be added to work permit applications for listing the proposed numbers of daily and weekly hours of work and the daily end time of work so that violations of work hour restrictions can be prevented. To achieve greater use of and compliance with work permits, the US

TABLE 2—Associations Between Reported Issuance of a Work Permit and Child Labor Violations: North Carolina, 2005

Type of Violation	OR (95% CI)	P
Work hour violations among adolescents younger than 16 y		
Worked >18 h/wk (n=203)	0.49 (0.28, 0.86)	.013
Worked more than 3 hours on a school day (n=195)	0.51 (0.25, 1.06)	.07
Worked after 7 PM on a school night (n=205)	0.69 (0.36, 1.31)	.255
Worked after 11 PM on a school night ^a (n=518)	0.89 (0.57, 1.38)	.602
Worked more than 40 hours during a nonschool week (n=289)	1.60 (0.97, 2.64)	.066
Worked more than 8 hours on a weekend day (n=267)	0.86 (0.47, 1.57)	.621
Hazardous order violations among adolescents younger than 18 y		
Used a power saw (n=609)	3.52 (1.74, 7.09)	<.001
Used a power slicer or grinder ^b (n=167)	1.54 (0.87, 2.73)	.135
Used a power dough or rolling machine ^b (n=166)	3.61 (1.51, 8.61)	.004
Used other power tools or appliances (n=615)	2.08 (1.54, 2.79)	<.001
Used a forklift (n=599)	2.22 (1.10, 4.47)	.025
Used power nail guns or staple guns (n=607)	2.97 (2.03, 4.33)	<.001
Used a box crusher (n=605)	0.69 (0.33, 1.43)	.295
Worked on a demolition crew (n=594)	5.16 (0.81, 33.03)	.054

Note. CI=confidence interval; OR=odds ratio. Results are expressed in terms of the odds of having worked in violation of child labor laws among participants without work permits relative to those with work permits.

^aThis is a violation not only for adolescents younger than 16 years but also for adolescents aged 16–17 years. In this analysis, all participants younger than 18 years were included.

^bRestricted to participants who worked in food service establishments.

Department of Labor's Wage and Hour Division could devise strategies to maximize the effects of its resources, including focusing investigations on the industries that employ the most children and involve the most serious and greatest number of violations and injuries. ■

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Contributors

J.A. Dal Santo designed the study, provided the data, was involved in all aspects of data analysis and interpretation, and wrote the article. J.M. Bowling assisted in all aspects of survey design, data analysis, and data interpretation and contributed to the review and writing of the article. T.A. Harris helped with survey design and interpretation of data in relation to state violations and labor laws and contributed to the review and writing of the article. All of the authors reviewed and edited drafts of the article.

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Human Participant Protection

This study was approved by the University of North Carolina institutional review board. Passive parental consent procedures were used, and respondents signed assent forms prior to survey administration.

References

- 29 CFR 570.9–570.10 (2009).
- Committee on the Health and Safety Implications of Child Labor, National Research Council, Institute of Medicine. *Protecting Youth at Work: Health, Safety and Development of Working Children and Adolescents in the United States*. Washington, DC: National Academy Press; 1998.
- Rauscher KJ, Runyan CW, Bowling MJ, Schulman M, Bowling M. US child labor violations in the retail and service industries: findings from a national survey of working adolescents. *Am J Public Health*. 2008;98(9):1693–1699.
- Abboud Dal Santo J, Bowling MJ. Characteristics of teens with and without work permits. *Am J Ind Med*. 2009;52(11):841–849.

- 29 CFR 570.35 (2009).
- North Carolina General Statutes 95-25.5(a1) (2009).
- Amrhein R. *Design and Analysis of Probability Surveys Course Notes*. Cary, NC: SAS Institute Inc; 2002.
- SAS [computer program]. Version 9.1.3. Cary, NC: SAS Institute, Inc; 2004.
- North Carolina Session Laws C.351, S.1 (2009).
- Labor Can Strengthen Its Efforts to Protect Children Who Work*. Washington, DC: US General Accounting Office; 2002.