

# Odd Jobs, Bad Habits, and Ethical Implications: Smoking-Related Outcomes of Children's Early Employment Intensity

Amy L. Bergenwall, E. Kevin Kelloway & Julian Barling

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# Odd Jobs, Bad Habits, and Ethical Implications: Smoking-Related Outcomes of Children's Early Employment Intensity

Amy L. Bergenwall · E. Kevin Kelloway ·  
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**Abstract** Considerable interest has long existed in two separate phenomena of considerable social interest, namely children's early exposure to employment outside of any organizational, legislative, or collective bargaining protection, and teenage smoking. We used data from a large national survey to address possible direct and indirect links between children's early employment intensity and smoking (both intent and history) because of significant long-term implications of the link between work and well-being in a vulnerable population. Fifth to ninth grade children's ( $N = 19,018$ ) informal employment intensity (number of odd jobs) was related to both smoking history and smoking intent, and these effects were partially mediated by the amount of weekly spending money and self-esteem. The number of one's parents and friends who smoke separately moderated the relationships between self-esteem and weekly spending money, and smoking behavior. These findings illustrate the complex consequences of young children's exposure to early employment, and emphasize the need for research on the ethical implications of pre- and early teenagers who are employed outside of the formal employment context.

**Keywords** Self-esteem · Substance use · Young workers · Youth employment

Young workers continue to participate in the paid labor force at an unprecedented rate (Bureau of Labor Statistics 2010; Kelloway and Barling 1999; Rothstein 2001). This should perhaps not be surprising as adults and parents have long valued and encouraged youth employment (see Furnham and Thomas 1984; Greenberger and Steinberg 1986; Phillips and Sandstrom 1990), viewing early employment intensity (the frequency and duration of work) and experiences as a critical socialization process (Kelloway and Harvey 1999) that leads to the development of desirable personal characteristics such as responsibility, maturity, and appropriate money management. Nevertheless, available data suggest that the outcomes related to this vulnerable population are complex, with potentially important implications both for the youth involved and society at large (Kelloway and Barling 1999) and that raise critical ethical issues. While young people may learn skills through early employment that will be crucial for later success (Mortimer et al. 1991), they are exposed to the hazards of adult employment including issues of work stress (Loughlin and Lang 2005), workplace aggression (Dupre et al. 2006; Tucker and Loughlin 2006), and occupational health and safety (Castillo 1999; Frone 1999); employment intensity may increase the likelihood of graduating high school, but it also decreases the probability of pursuing post-secondary education (Lee and Orazem 2010), and can negatively affect academic performance (see Frone 1999).

While research slowly accumulates on the nature and effects of youth employment, the studies are dominated by one feature that has limited knowledge of the phenomenon

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of youth employment. Specifically, researchers continue to focus almost exclusively on children between the ages of 15 and 24 (Barling and Kelloway 1999), and a paradox exists: While most of the research on youth employment focuses on children between the ages of 15 and 24, much of employment is conducted by children younger than 15 years old. This omission might be a function of several factors, including the false assumption that individuals under the age of 15 do not participate in the labor market, the fact that child labor is illegal in most jurisdictions (Tucker and Loughlin 2006), ethical dilemmas for researchers in accessing young children involved in legally questionable employment, or researchers being unwilling to address vulnerable populations operating at the edge of legally questionable behavior both in and for organizations. Whatever the reason, the omission is unacceptable and can no longer continue: Youth employment does exist under the age of 15 (Covell and Howe 1999; Ferman 1990; Rothstein 2001). Young children are often engaged in paper routes, agriculture, construction, or restaurant work, where they are responsible to a formal employer who represents an organization. More often, however, children are engaged in yard work and baby-sitting, for example, where their employment relationship is informal and work is unstructured (Weller et al. 2003). This work is not being performed by 18-year-olds protected by labor regulations, but by 8-year-olds where it passes unnoticed, unregulated, and barely understood.

Thus, continuing to exclude children below the age of 15 from research on early employment might have considerable organizational, developmental, and ethical consequences. First, despite the lack of visibility accorded to this group in public policy initiatives and empirical research, the number of children involved is considerable and extensive. For example, pre-teenagers are active participants in paid employment in the USA (Covell and Howe 1999; Mortimer et al. 1990), and the United Kingdom (White and O'Donnell 2001). Moreover, this phenomenon is widespread: Data from a large-scale representative sample in the USA show that 56 % of a representative sample of 3,008 sixth through eighth grade school children were employed on a part-time basis (Weller et al. 2003), working an average of 7.7 h per week, with 4.9 % employed for more than 20 h per week. Ferman (1990) reported that children as young as 8 years of age were participants in economic activities. Even though these "hidden" workers remain unregulated, it is clear that society needs and uses these workers, resulting in a highly complex and ethically challenging context.

Second, young children involved in employment engage in activities that potentially have significant short- (e.g., Frone 1999) and long-term socializing and developmental effects (both positive and negative), thus leaving a

meaningful gap in our understanding of a potentially vulnerable group of workers. Formal employment is almost invariably preceded by employment in the informal economy and short-term, temporary jobs in the formal economy. This is of significant concern, because children's early employment experiences (whether in the formal or informal economy) shape later expectations about, and reactions to, their work as adults in formal businesses (Barling and Kelloway 1999).

Last, young children's employment is not without physical consequences. Weller et al. (2003) analyzed the effects of employment intensity for 6th through 8th grade school children. Of the 3,008 school children who were employed, 773 (25 %) experienced a workplace injury. Moreover, these injuries were not trivial: 30 % of the injured school children were hurt badly enough to require medical attention, with 40 % of those experiencing an injury missing between 1 and 7 days of school, and 7 % losing more than 8 days of school due to the injury.

While relevant data are scarce, what Weller et al.'s findings highlight is how little we know about the nature and consequences of *young* children's early employment. The majority of young pre-teen children, who are among the most vulnerable members of our society, are being exposed to employment that might have positive benefits but could leave them physically and psychologically compromised, without the formal legislative, organizational or collective bargaining protection routinely offered to employees aged 15 and above. The care of vulnerable groups presents a significant ethical challenge, and the goal of this study is to provide additional data to guide evidence-based policy decisions regarding children's employment.

## The Current Study

One frequently investigated consequence of youth employment that is of considerable social importance is substance use (see Frone 1999, 2003; Mihalic and Elliot 1997; Valois et al. 1999; Wu et al. 2003). In this study, we focus on the link between early employment intensity and one particular substance, namely tobacco use. Several factors motivated this specific focus. First, most research on teenagers' employment has focused on the quantity of employment, invariably in terms of the number of hours worked per week. Our measure of employment intensity is the number of odd jobs per week in which the young children were involved (e.g., yard work, baby-sitting, paper route). Second, while it is illegal to sell tobacco to our entire study population (young persons under the age of 18 in Canada; Tobacco Act of Canada 1997), it is arguably one of the most likely substances to be available to young



children because of its price and accessibility relative to other illicit drugs. Third, access to illicit drugs would presumably be extremely difficult for young children. Fourth, the long-term health effects of tobacco smoking are well documented (Bartechhi et al. 1994; Mathers et al. 2006). Fifth, tobacco has been conceptualized as a “gateway drug,” as young people who begin smoking are more likely to use other illicit drugs (Bailey 1992; Henningfield et al. 1990), and are more likely to abuse alcohol (Ellickson et al. 2001). Sixth, youth's early tobacco use has been related to several other behavioral and health outcomes such as mental health problems (McGee et al. 2000), depression and anxiety (Brook et al. 2002), frequent sleep problems (Patten et al. 2000), and crime (Ellickson et al. 2001).

Research shows that cigarette smoking, and both alcohol and illicit drug use, have been linked to youth employment (Frone 1999). Aside from the immediate adverse social- and health-related consequences of early substance use, there is also evidence that adolescent employment may result in substance use that persists into adulthood (Mihalic and Elliot 1997). Most studies show a significant link between youth employment intensity and cigarette and substance use (Frone 1999; Ramchand et al. 2007; Wu et al. 2003), and there is some evidence that this relationship is stronger among younger teenagers (Breslin and Adlaf 2002). Our study extends findings from prior research by focusing on the possible link between early employment intensity and smoking behavior in younger children in grades five through nine—a group ignored in this prior research.

Throughout our research, we focus on two aspects of smoking behavior, namely smoking history (whether the child had ever smoked previously), and future smoking intention (among those children who had not previously smoked). Previous research shows consistently that smoking intentions predict smoking behaviors (Conrad et al. 1992). We hypothesize that:

**H1a** The number of odd jobs a child participates in will be positively associated with prior smoking history.

**H1b** The number of odd jobs a child participates in will be positively associated with intent to smoke in the future.

While consistent with prior research, the first hypothesis merely proposes the existence of a link between young children's early employment intensity and tobacco smoking; empirically based explanations of *how* employment intensity affects behavioral outcomes remain sparse. In this study, we investigate the processes underlying the link. To do so, we first introduce the possibility of two different mediators between young children's early employment and their smoking behavior, namely weekly spending money

and self-esteem. In doing so, we highlight the complexity of this relationship, as these two mediators exert opposite effects on smoking history and intentions. The possible role of both of these mediators can be better understood by placing them in the context of Jahoda's (1982) notion of the manifest and latent consequences of employment; financial outcomes are the manifest functions of employment, and psychological outcomes (e.g., self-esteem, time structure) constitute the latent functions of employment. Like adults, young children would seek employment to fulfill both their needs for financial and psychological outcomes; in turn, how employment intensity relates to the manifest and latent consequences of children's employment will affect their smoking behaviors.

With respect to the mediating role of spending money, we argue that there will be a positive relationship between employment intensity and spending money. Compensation for odd jobs completed by young children would most likely be based either on the number of odd jobs, or on the amount of time taken to complete the work. In either event, there would be a meaningful link between employment intensity and the amount of spending money available. This is important, as cigarettes are costly, perhaps especially for young children with their relatively limited access to money. Thus, over-and-above any regular allowance, any income earned could be available for the purchase of cigarettes; among adults there is a positive relationship between income and substance use (Frone 2008). Perhaps the most prosaic explanation for the hypothesized link between young children's early employment and smoking behavior is that employment intensity, reflected in the number of odd jobs completed, results in increased discretionary spending money. The availability of discretionary spending money acts as a mechanism through which early employment intensity influences cigarette use.

**H2** Weekly spending money will partially mediate the relationship between young children's early employment intensity and smoking behavior.

Our second explanation for the link between young children's early employment intensity and cigarette smoking is consistent with Jahoda's (1982) latent (or psychological) consequences of employment. Jahoda (1982) identified self-esteem as one of the major latent consequences of employment. Self-esteem is associated with adults' employment and unemployment experiences (Croghan et al. 2006). In addition, young adults and teenagers who are engaged in employment report higher self-esteem than those who are not (e.g., Barling et al. 1995; Prause and Dooley 1997), and adolescent employment intensity is consistently associated with self-esteem (e.g., Conrad et al. 1992; Ploeger 1997). What gives this finding added importance is that any benefits to self-esteem may be

long-lasting. Based on cross-sectional and retrospective data, Kelloway and Thun (2006) reported a significant correlation between the number of odd jobs held as a child and self-efficacy as a young adult.

At the same time, adolescents' poor self-esteem predicts their involvement in illicit substance use. Voelkl and Frone (2000) showed that even after taking demographic, personality, academic, and expectancy variables into account, adolescents' self-esteem was negatively associated with the frequency of marijuana (but not alcohol or smoking) use. In addition, analysis of a large longitudinal database showed that adolescents' low self-esteem predicted tobacco dependence some 10 years later (Trzesniewski et al. 2006). Thus, we hypothesize that:

**H3** Self-esteem will partially mediate the relationship between young children's early employment intensity and smoking behavior.

Thus far we have focused on how two mediating variables will aid in understanding the relationship between young children's employment intensity and their smoking behavior. To understand how young children's early employment results in smoking behavior, we also accord a moderating role to significant others that is consistent with young children's psychosocial development. Specifically, both parents and peers are crucial influences on children's behavior, and are also among the most significant early influences in the decision to initiate and maintain smoking behavior (Simons-Morton et al. 2004). First, and consistent with the tenets of social learning theory (Bandura 1973), individuals learn from watching the behaviors enacted by salient role models, and when they do not see those same behaviors punished, they are more likely to enact the behaviors themselves (Bandura 1965). It should not be surprising then, that parents' smoking is associated with their children's initiation and progression of smoking (Conrad et al. 1992). From this, we suggest that parental smoking status will moderate the relationships between weekly spending money and self-esteem, and smoking behavior. Specifically, in the presence of parents who smoke cigarettes, the relationships between both discretionary spending money and poor self-esteem, and smoking behavior, will be greater than in the presence of non-smoking parental models.

Second, as children develop, the influence of peer groups increases (Harris 1995), and peers are a significant influence on smoking behavior (Simons-Morton et al. 2004). Considerable research exists investigating what aspects of peer groups influence individuals so powerfully. Research has pointed to descriptive norms rather than normative appeals as powerful influences over individual behavior (Cialdini 2006; Goldstein et al. 2008). Within the smoking context, this might help explain why exhortations

by authority figures about the negative personal effects of smoking are not more effective. In contrast, descriptive norms provide specific information about what behaviors salient others engage in, and importantly, individuals do not need to be aware of this influence for it to be effective (Nolan et al. 2008), which might be especially important in influencing children's behavior. Thus, we suggest that descriptive social norms will moderate the relationships between both spending money and poor self-esteem, and smoking behavior. Specifically, the relationships between poor self-esteem and spending money, and smoking behavior will be greater the higher the proportion of one's peer group that engages in smoking. With a larger proportion of peers involved in smoking, excess spending money is more likely to be used to purchase cigarettes as the individual yields to social norms. A higher proportion of peers involved in smoking might also impact the effects of self-esteem on smoking; while self-esteem is generally negatively related to substance use (e.g., Voelkl and Frone 2000), the effects may be lessened in the presence of peers who smoke; when self-esteem is already low and an individual is exposed to peer smoking, they are much more likely to succumb to social influence (McGuire 1968). Thus, we predict that:

**H4a** Parental smoking will moderate the relationship between young children's spending money and smoking behavior, strengthening the relationship.

**H4b** Parental smoking will moderate the relationship between young children's self-esteem and smoking behavior, weakening the relationship.

**H5a** The proportion of one's peer group who smoke will moderate the relationship between children's spending money and smoking behavior, strengthening the relationship.

**H5b** The proportion of one's peer group who smoke will moderate the relationship between children's self-esteem and smoking behavior, weakening the relationship.

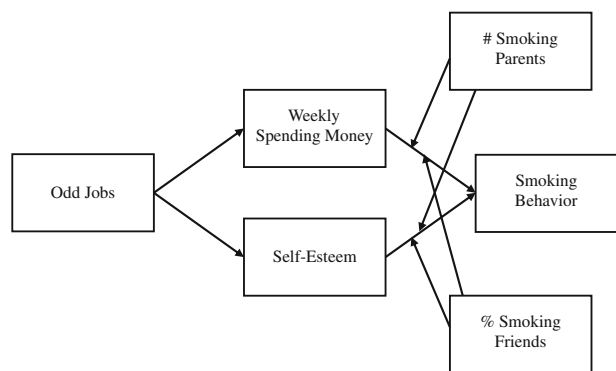
A visual representation of our model can be found in Fig. 1.

## Method

### Respondents and Procedure

We used data from the Youth Smoking Survey (Statistics Canada 2002), which provided interviews with over 19,000 students between Grade 5 and Grade 9, of a large and nationally (Canadian) representative sample. Complete details of the sampling procedure and data collection

Proposed conceptual model



**Fig. 1** Proposed conceptual model

methods are provided in Statistics Canada (2002). The sample was selected through a three-level stratification process in which the first stratification was to select school boards within provinces, the second was to select schools within school boards, and the third was to select classes within each school. In total 1,070 classes in 982 schools situated in 327 school boards participated in the study.

Approximately equal numbers were sampled from each grade (i.e., Grade 5 = 3,544; Grade 6 = 3,717; Grade 7 = 3,725; Grade 8 = 3,960; Grade 9 = 4,072). The sample was evenly split between male (50.1 %,  $n = 9,530$ ) and female (49.9 %,  $n = 9,488$ ) respondents. Respondents were drawn from all provinces of Canada, and the sample is representative of the most populous areas of the country; the source publication (Statistics Canada 2002) notes that respondents in remote communities and those in small ( $N < 10$ ) classes are underrepresented in the dataset.

**Measures**

All items for the current study were taken from the Youth Smoking Survey (Statistics Canada 2002). (a) Employment intensity was assessed with one item asking, on a weekly basis “how often have you done odd jobs (a paper route, babysitting, etc.)” Responses were on a 4-point scale (1 = never; 2 = less than 1/week; 3 = 1–3 times/week; 4 = four or more times a week). This is comparable to a measure used by Mortimer et al. (1994) categorizing hours worked per week. (b) Weekly spending money was also assessed with one item, which asked, “about how much money do you usually get each week to spend on yourself or to save? (include money from allowances and from jobs)” (1 = \$0–\$9; 2 = \$10–\$24; 3 = \$25–\$49; 4 = \$50–\$74; 5 = \$75 or more). (c) Children completed a five item ( $\alpha = .80$ ) measure of self-esteem (e.g., “I like the way I am”, “When I do something, I do it well”) adapted for this survey from the National Longitudinal Study of Children and Youth). Each item was rated along a five-point response

scale (1 = false, 2 = mostly false, 3 = sometimes false/sometimes true, 4 = mostly true, 5 = true). (d) Students were asked about the smoking behaviors of their parents (“Does your father smoke?”, “Does your mother smoke?” 1 = Yes, 0 = No for each), from which the number of parents who smoke was derived. (e) Students were also asked to indicate the number of close friends they have, and the number of close friends who smoke; we used these data to determine the proportion of close friends who smoke. (f) Last, two questions asked respondents about smoking. The first asked, “Have you ever tried cigarette smoking, even just a few puffs?” (Yes = 4,488; No = 14,530). Thereafter, those who responded “no” to having tried smoking were asked, “Have you ever seriously thought about trying smoking?” (Yes = 1,459, No = 13,004). These questions represented smoking history and smoking intent in the current analyses. While the use of these single-item measures is less than ideal, similar measures have been validated and successfully used in similar youth smoking research (e.g., Gidwani et al. 2002; Patrick et al. 1994).

Finally, a number of control variables were used throughout our analysis: gender, age, and province. Age and gender are common control variables when predicting youth smoking (e.g., Gidwani et al. 2002; Mermelstein and the Tobacco Control Network Writing Group 1999). Geographic location has been shown to be a significant contextual factor in youth smoking initiation, thus province was also controlled for (Frohlich et al. 2002).

**Results**

Table 1 presents descriptive statistics on the distribution of child employment in the current sample. Approximately 62 % of the sample participated in odd jobs. Female students held more odd jobs than did male students ( $M = 2.31$ ,  $SD = .96$  vs.  $M = 2.14$ ,  $SD = 1.03$ ,  $t(18,884) = 11.79$ ,  $p < 0.01$ ), but reported less weekly spending money ( $M = 1.89$ ,  $SD = 1.01$  vs.  $M = 2.01$ ,  $SD = 1.18$ ,  $t(14,529) = 6.59$ ,  $p < 0.01$ ). As would be expected, employment intensity increased across grade level: Children in elementary school (Grades 5 and 6;  $M = 1.99$ ,  $SD = 1.01$ ) reported having fewer jobs than did children in junior high (Grades 7–9,  $M = 2.37$ ,  $SD = 0.96$ ,  $t(18,885) = 25.92$ ,  $p < 0.01$ ). Table 2 presents the descriptive statistics and correlations for all study variables.

To assess the proposed hypotheses, we followed Preacher et al.’s (2007) method for testing moderated mediation using Hayes’s (2012) PROCESS computational procedure in SPSS to simultaneously test both proposed mediators and moderated mediators. The PROCESS procedure improves upon many of the recently highlighted drawbacks of Baron and Kenny’s (1986) tests for

**Table 1** Employment intensity by grade level and gender

	Ever done odd jobs (% responding)				N
	Never	<1/week	2–3/week	4+/week	
Grade 5					
Male	49.1	24.5	15.7	10.8	1,758
Female	45.0	28.1	17.0	9.9	1,758
Overall	47.1	26.3	16.3	10.3	3,493
Grade 6					
Male	41.0	28.9	19.1	11.0	1,860
Female	30.8	34.6	23.6	11.0	1,813
Overall	36.0	31.7	21.3	11.0	3,673
Grade 7					
Male	32.6	33.0	22.2	12.2	1,835
Female	17.9	36.3	31.7	14.1	1,871
Overall	25.2	34.7	27.0	13.1	3,706
Grade 8					
Male	24.7	35.1	25.0	15.1	1,981
Female	12.4	38.1	34.9	14.6	1,967
Overall	18.6	36.6	30.0	14.9	3,948
Grade 9					
Male	24.1	33.3	28.0	14.6	2,024
Female	12.2	39.4	35.5	12.8	2,043
Overall	18.1	36.3	31.8	13.7	4,067

mediation (Hayes 2009; Zhao et al. 2010), produces conditional indirect effects in moderated mediation models, and bootstrapped confidence intervals, and detects and implements logistic regression for dichotomous outcomes (i.e., smoking history and intent). In each analysis, relevant demographic variables were controlled. Smoking history and smoking intent were assessed in separate models due to the nature of the data. Mediation was tested in each using bootstrapping with 1,000 bootstrapped samples.

Tables 3, 4, and 5 present the results of the analyses. All variables were centered to control for multicollinearity among interaction terms and improve the interpretability of the results. Employment intensity was significantly and positively associated with both smoking history and smoking intent after controlling for sex, grade, and province, supporting hypothesis 1 (Table 3). Early employment intensity was positively related to both self-esteem and spending money (Table 4), self-esteem was negatively related and spending money was positively related to both smoking history and intent in the final model (Table 5), and all confidence intervals produced by bootstrapping for spending money and self-esteem did not include zero for both smoking history and smoking intent, supporting mediation (H2 and H3).

We also assessed whether the mediating relationships were moderated by the extent to which parents smoked, and the proportion of the children's friends who smoked.

Thus four separate interaction variables were included in the final regression (see Table 5). Partial support for hypotheses 4 and 5 was found. Parental smoking did not moderate the mediating path of spending money for either outcome, but did moderate the mediating path of self-esteem for smoking intent (H4). Friend smoking did not moderate the mediating path of self-esteem for either outcome, but did moderate the mediating path of spending money for both smoking history and intent.

The PROCESS computational tool probes the moderated mediation by producing bootstrapped confidence intervals and total effect sizes at varying combinations of moderator levels. Results of this analysis appear in Table 6. Illustrations of the directional impact of the significant moderations appear in Fig. 2. The number of parents who smoked moderated the relationship between self-esteem and smoking intent, such that the negative relationship between self-esteem and smoking is lower when the number of parents who smoke is higher. The proportion of friends who smoked significantly moderated the relationships between spending money and both smoking history and intent, but in the opposite direction than was expected: In both cases, the relationship between spending money and smoking behavior was weaker (but still positive) when more of the friends smoked.

## Discussion

Understanding young children's decisions to engage in early employment intensity or smoking are of considerable social and health-related interest, as both early employment intensity or smoking could exert significant immediate and long-term developmental effects. Thus, our goal in the current study was to investigate whether, and how, children's early employment intensity is associated with smoking intention and history. The results of the current study offer full support for the first three hypotheses. Early employment intensity was positively related to smoking history and smoking intent (H1); the greater the number of odd jobs that children complete is positively related to the probability that they have smoked in the past or intend to smoke in the future. Mediated relationships were found for both spending money (H2) and self-esteem (H3), as the number of odd jobs was positively related to both spending money and self-esteem, and spending money was positively related to smoking behavior and negatively related to self-esteem. This begins to shed light on the highly complex effects of early employment intensity, as odd jobs maintained not only an overall positive relationship with smoking behaviors, but also a mitigating mediating relationship with self-esteem. Hypothesis four was partially supported, as parental smoking moderated the relationship



**Table 2** Intercorrelations for all study variables

	1	2	3a	3b	3c	3d	3e	3f	3g
1. Grade									
2. Sex	0.00								
3. Prov									
3a. Alb	0.00	-0.01							
3b. Sask	0.02*	0.02*	-0.09**						
3c. Man	0.01	-0.01	-0.09**	-0.09**					
3d. Ont	-0.02*	0.02*	-0.12**	-0.12**	-0.12**				
3e. Que	-0.02*	0.00	-0.13**	-0.14**	-0.13**	-0.18**			
3f. NB	0.01	-0.01	-0.09**	-0.10**	-0.09**	-0.12**	-0.14**		
3g. NS	0.00	0.00	-0.09**	-0.10**	-0.10**	-0.13**	-0.15**	-0.10**	
3h. PEI	0.00	-0.01	-0.07**	-0.08**	-0.07**	-0.10**	-0.11**	-0.08**	-0.08**
3i. NFLD	-0.01	0.00	-0.09**	-0.09**	-0.09**	-0.12**	-0.14**	-0.09**	-0.10**
4. Smoke history	0.31**	-0.01	-0.03**	0.01	-0.03**	-0.07*	0.15**	0.00	0.01
5. Smoke intent	0.10**	0.00	-0.01	-0.02*	-0.01	0.02*	0.03**	0.00	0.01
6. Weekly money	0.29**	-0.06**	0.00	0.02*	0.00	-0.02*	-0.05**	0.03**	0.00
7. Self-esteem	-0.15**	-0.06**	0.00	0.03**	0.01	-0.01	-0.03**	-0.01	0.01
8. # Odd jobs	0.19*	0.09**	-0.01	0.04**	-0.01	0.00	0.02**	0.00	-0.01
9. # Parent smoke	0.02*	0.02*	-0.01	0.02*	-0.02**	-0.04**	0.03**	0.02**	0.02**
10. % Friends smoke	0.27**	0.01	-0.06**	-0.02**	-0.02**	-0.06**	0.13**	0.02**	0.01
Mean	7.07	-	-	-	-	-	-	-	-
SD	1.42	-	-	-	-	-	-	-	-
	3h	3i	4	5	6	7	8	9	10
1. Grade									
2. Sex									
3. Prov									
3a. Alb									
3b. Sask									
3c. Man									
3d. Ont									
3e. Que									
3f. NB									
3g. NS									
3h. PEI									
3i. NFLD	-0.07**								
4. Smoke history	-0.04**	0.03**							
5. Smoke intent	-0.02	0.00	- <sup>a</sup>						
6. Weekly money	0.04**	0.04**	0.21**	0.08**					
7. Self-esteem	0.03**	-0.01	-0.23**	-0.16**	-0.05**				
8. # Odd jobs	0.03**	-0.01	0.11**	0.04**	0.25**	0.01			
9. # Parent smoke	0.00	0.03**	0.21**	0.05**	0.10**	-0.11**	0.03**		
10. % Friends smoke	-0.03**	0.05**	0.48**	0.18**	0.22*	-0.19**	0.10**	0.18**	
Mean	-	-	-	-	1.95	12.13	2.23	0.52	0.12
SD	-	-	-	-	1.10	2.80	1.00	0.72	0.24

\*\*  $p < 0.01$ , \*  $p < 0.05$

<sup>a</sup> Correlation cannot be computed, children were only asked about intent if they had no smoking history

**Table 3** Results of the logistic regression of employment intensity on smoking outcomes

Predictor	History			Intent		
	$\beta$	SE	Exp( $\beta$ )	$\beta$	SE	Exp( $\beta$ )
Grade	0.595**	0.015	1.813	0.217**	0.021	1.242
Sex	-0.080*	0.037	0.923	0.024	0.056	1.024
Province						
Alberta	0.321**	0.091	1.378	0.006	0.130	1.006
Sask	0.609**	0.084	1.838	-0.113	0.130	0.893
Manitoba	0.312**	0.090	1.366	0.001	0.128	1.001
Ontario	0.104	0.081	1.110	0.296**	0.104	1.345
Quebec	1.359**	0.071	3.894	0.433**	0.104	1.542
NB	0.578**	0.085	1.783	0.195	0.122	1.216
NS	0.664**	0.083	1.943	0.213	0.120	1.237
PEI	0.141	0.103	1.152	-0.067	0.145	0.935
NFLD	0.823**	0.084	2.278	0.237	0.126	1.268
Number of odd jobs	0.138**	0.019	1.148	0.074**	0.028	1.077
Constant	-1.409**	0.021	0.244	-2.172**	0.028	0.114

\*  $p < 0.05$ ; \*\*  $p < 0.01$

between self-esteem and smoking behavior (H4b); the greater number of parents who smoke, the less impact that self-esteem has on a child's intention to smoke. Put another way, parents who smoke significantly reduce the positive effects of self-esteem, increasing the odds that their child will smoke. Finally, hypothesis 5 was partially supported as peer smoking moderated the relationship between spending

money and smoking behavior but opposite the hypothesized direction (H5a)—the more smoking friends that children have, the weaker the mediating effect of spending money. These results, discussed further below, further our understanding of the process underlying the link between children's early employment intensity and smoking intentions and behaviors, and achieve considerable importance given the large-scale nature of the nationally representative sample, and the vulnerable population on which they are based.

We began this research with the observation that although very young children are engaged in economic activities (e.g., Ferman 1990), little is known about the contemporaneous or long-term consequences of these experiences. The current results suggest that this form of economic participation is an appropriate focus of future research: Early employment intensity of young people exerts complex effects, both positive (i.e., the enhancement of self-esteem) and negative (i.e., the development of smoking behavior). Moreover, these effects likely carry-over into later adolescent and adult life in many cases, suggesting the need to understand the nature and consequences of early employment experiences more fully.

To the extent that early employment intensity (i.e., engaging in odd jobs) is associated with adverse behaviors, the current data suggest that this effect is only partially mediated by the amount of weekly spending money available to children, pointing to the need to further investigate the effects of early employment and how such experiences may be linked to smoking and other

**Table 4** Results of the regression on mediators

Predictor	Mediator: self-esteem				Mediator: money			
	History		Intent		History		Intent	
	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE
Grade	-0.324**	0.018	-0.226**	0.019	0.196**	0.007	0.166**	0.007
Sex	-0.353**	0.048	-0.120**	0.052	-0.167**	0.018	-0.139**	0.020
Province								
Alberta	-0.133	0.110	-0.039	0.115	0.065	0.041	0.082	0.043
Sask	0.126	0.107	0.250*	0.113	0.041	0.040	0.056	0.043
Manitoba	-0.046	0.110	0.104	0.115	0.069	0.041	0.047	0.043
Ontario	-0.237*	0.095	-0.221*	0.097	0.012	0.036	0.010	0.037
Quebec	-0.395**	0.090	-0.193	0.100	-0.089**	0.034	-0.100**	0.037
NB	-0.205	0.107	0.149	0.113	0.131**	0.040	0.130**	0.043
NS	-0.110	0.103	0.011	0.110	0.045	0.039	0.052	0.041
PEI	0.167	0.123	0.264	0.127	0.149**	0.046	0.116*	0.048
NFLD	-0.350**	0.106	-0.028*	0.114	0.212**	0.040	0.186**	0.043
Number of odd jobs	0.141**	0.025	0.181**	0.027	0.238**	0.009	0.222**	0.010
Constant	0.061*	0.024	0.388**	0.026	-0.017	0.009	-0.098**	0.010

\*  $p < 0.05$ ; \*\*  $p < 0.01$

**Table 5** Results of full logistic regression analysis

Predictor	Full model					
	History			Intent		
	$\beta$	SE	Exp( $\beta$ )	$\beta$	SE	Exp( $\beta$ )
Grade	0.423**	0.020	1.527	0.133**	0.027	1.142
Sex	-0.214**	0.050	0.808	0.012	0.070	1.012
Province						
Alberta	0.502**	0.119	1.652	0.177	0.159	1.194
Saskatchewan	0.630**	0.113	1.878	0.037	0.162	1.038
Manitoba	0.292*	0.123	1.339	-0.065	0.168	0.937
Ontario	0.103	0.108	1.108	0.397**	0.131	1.487
Quebec	1.152**	0.097	3.164	0.304*	0.135	1.355
New Brunswick	0.322**	0.118	1.380	0.19	0.155	1.209
Nova Scotia	0.514**	0.111	1.672	0.184	0.151	1.203
PEI	0.038	0.139	1.039	-0.169	0.190	0.844
Newfoundland	0.475**	0.114	1.608	0.335*	0.151	1.397
Number of parents who smoke	0.517**	0.034	1.678	0.154**	0.050	1.166
Proportion of friends who smoke	3.359**	0.113	27.770	2.045**	0.163	7.728
Number of odd jobs	0.079**	0.026	1.082	0.084*	0.036	1.087
Self-esteem	-0.138**	0.009	0.871	-0.181**	0.012	0.834
Weekly spending money	0.200**	0.023	1.222	0.145**	0.033	1.156
Parents $\times$ self-esteem	-0.008	0.012	0.992	0.044**	0.017	1.045
Parents $\times$ money	-0.039	0.028	0.962	-0.007	0.043	1.007
Friends $\times$ self-esteem	-0.073	0.038	0.930	0.034	0.054	1.035
Friends $\times$ money	-0.217*	0.085	0.805	-0.312*	0.127	0.732
Constant	-1.498**	0.029	0.224	-2.081**	0.037	0.125

\*  $p < 0.05$ ; \*\*  $p < 0.01$ 

developmentally significant outcomes. The effects of spending money on both smoking history and intention were moderated by the proportion of a child's friends who smoke, suggesting that children are less likely to spend their money on cigarettes when their friends smoke. While in the opposite direction than what was predicted, we offer the following explanation based on a post-hoc analysis: The Youth Smoking Survey included information on children's sources of cigarettes, and not surprisingly, the most common source of cigarettes was purchasing them from friends (30%), followed closely by being given cigarettes by friends (27%). It could be that the larger proportion of friends who smoke, the greater the availability of free cigarettes, while those with a smaller proportion of peers who smoke must purchase them from other sources. Either way, these results emphasize the strong effects that a children's peer group has on their behaviors. The results also emphasize the importance of early parental socialization of responsible monetary management for children (Kelloway and Harvey 1999), and suggest that monitoring the amount of weekly spending money and how

it is used, might be important from a preventive and intervention perspective.

The findings of this study also provide some data relevant to the widespread assumption (Goodnow 1988; Kelloway and Harvey 1999) that economic involvement has beneficial effects for children. In the current case, early employment intensity was associated both with positive and negative outcomes. Clearly, any policy initiatives on the topic need to be guided more by research findings than assumptions.

Despite the potential social significance of these findings, these results may underestimate the effects of early employment on smoking, as intensity reflects only one dimension of early employment; and there are some suggestions that employment intensity may not be the most important dimension. Specifically, youth employment varies not only in terms of its intensity (number of hours or odd jobs) but also in terms of the quality of employment experiences (e.g., role stressors, exposure to leadership, injuries) as is clear from both empirical research (Barling and Kelloway 1999; Frone 1999; Mortimer et al. 1992) and

**Table 6** Conditional indirect effects at values of moderators

Parents smoke value	Friends smoke value	Mediator: self-esteem				Mediator: spending money			
		Effect	Boot SE	Boot LLCI	Boot ULCI	Effect	Boot SE	Boot LLCI	Boot ULCI
Outcome: smoking history									
-0.715	-0.239	-0.016	0.004	-0.025	-0.010	0.067	0.010	0.048	0.086
-0.715	0.003	-0.019	0.004	-0.027	-0.012	0.054	0.008	0.038	0.068
-0.715	0.245	-0.021	0.005	-0.032	-0.013	0.042	0.010	0.024	0.061
0.009	-0.239	-0.017	0.004	-0.025	-0.011	0.060	0.008	0.043	0.075
0.009	0.003	-0.020	0.004	-0.028	-0.013	0.047	0.005	0.037	0.058
0.009	0.245	-0.022	0.005	-0.032	-0.014	0.035	0.008	0.021	0.050
0.734	-0.239	-0.018	0.004	-0.027	-0.011	0.053	0.010	0.035	0.072
0.734	0.003	-0.020	0.004	-0.029	-0.013	0.041	0.007	0.028	0.056
0.734	0.245	-0.023	0.005	-0.033	-0.015	0.028	0.009	0.013	0.045
Outcome: smoking intent									
-0.761	-0.220	-0.040	0.007	-0.057	-0.028	0.046	0.012	0.024	0.070
-0.761	-0.064	-0.039	0.007	-0.054	-0.027	0.036	0.010	0.015	0.056
-0.761	0.091	-0.038	0.007	-0.052	-0.026	0.025	0.011	0.005	0.047
-0.081	-0.220	-0.035	0.006	-0.048	-0.024	0.047	0.010	0.028	0.068
-0.081	-0.064	-0.034	0.006	-0.045	-0.023	0.037	0.008	0.021	0.051
-0.081	0.091	-0.033	0.006	-0.045	-0.022	0.026	0.008	0.010	0.041
0.600	-0.220	-0.029	0.006	-0.043	-0.019	0.049	0.012	0.025	0.072
0.600	-0.064	-0.029	0.006	-0.040	-0.019	0.038	0.010	0.019	0.057
0.600	0.091	-0.028	0.005	-0.039	-0.018	0.027	0.009	0.010	0.046

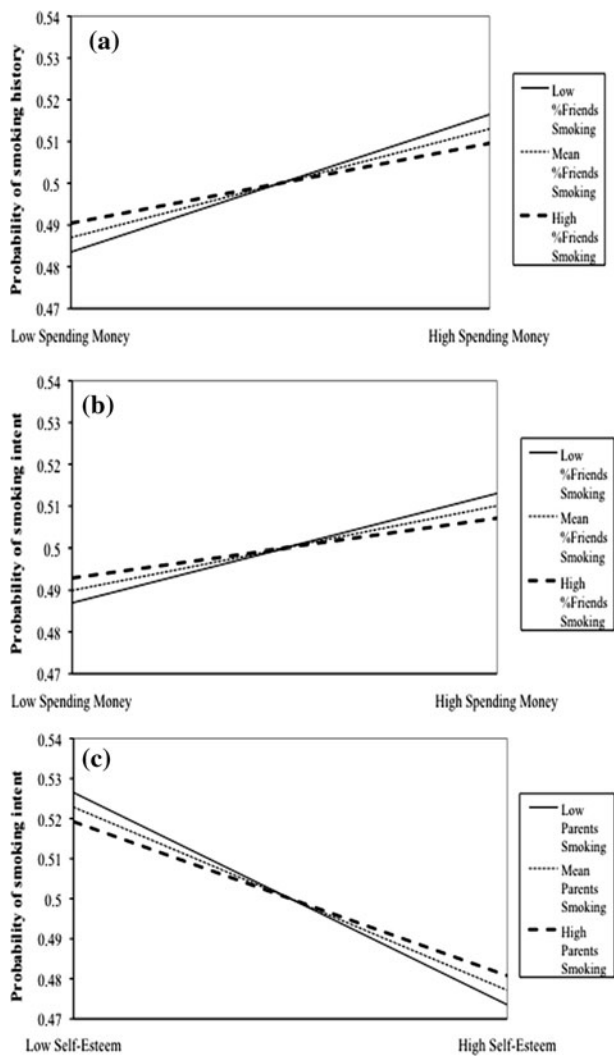
anecdotal reports (Schlosser 2002). Thus, employment intensity—as reflected by work hours or number of odd jobs—is an incomplete and uni-dimensional reflection of young children. Odd jobs completed by young children are also likely to be characterized by minimal training with potentially large variations in skill use and responsibility (e.g., baby-sitting), isolation from peers, and working before sunrise or after sunset (e.g., newspaper delivery). In short, young children most likely engage in low-quality jobs for which they receive inadequate preparation and minimal regulatory protection. Thus, any future research linking early employment intensity with smoking behavior might beneficially focus both on early employment intensity, quality, and form of employment. Furthermore, we emphasize again that this work is largely completed in the informal economy, where it escapes any and all regulation—the negative outcomes associated with early employment further highlight the need for organizational and governmental intervention.

Why has research continued to emphasize employment intensity at the expense of the quality of the employment experience? One possible reason is that most prior research has been conducted by developmental, social, or clinical psychologists, whose focus is primarily on the outcomes of early employment (e.g., Greenberger and Steinberg 1986). In contrast, when research has been conducted by

organizational psychologists (e.g., Barling et al. 1995, 2002; Dekker et al. 1998; Frone 1998, 2000, 2003; Loughlin and Barling 1999), the focus has understandably turned more to the quality of employment experiences given the centrality of subjective work experiences within organizational psychology. Irrespective of the reason, future research should focus both on early employment intensity and experiences, especially because the quality of employment experiences may be a better predictor of mediators such as self-esteem than is employment intensity.

In addition to focusing on employment experiences, several questions remain open to future research. First, given the broad array of developmental outcomes linked to adolescents' employment (see Frone 1999), understanding whether young children's employment intensity or quality influence academic performance or counterproductive behaviors (e.g., engagement in substance abuse) should be investigated. Second, the nature of the odd job might make a difference: Some odd jobs such as baby-sitting utilize interpersonal skills and require high levels of responsibility; others (e.g., lawn mowing, snow shoveling) involve social isolation and monotony. Third, parents serve as more than external models from whom children learn: the quality of parent-child communication regarding tobacco use also influences children's decisions involvement in tobacco use.





**Fig. 2** **a** Smoking history predicted by spending money moderated by proportion of friends who smoke, holding parents who smoke constant. **b** Smoking intent predicted by spending money moderated by proportion of friends who smoke, holding parents who smoke constant. **c** Smoking intent predicted by self-esteem moderated by number of parents who smoke, holding friends who smoke constant. Low = 1 SD below the mean, High = 1 SD above the mean

Notwithstanding the large and nationally representative sample on which our analyses were based, potential limitations of the current data need to be confronted. First, the data used were derived from a cross-sectional survey, limiting any causal inferences that can be made from the data. Despite the fact that alternative explanations were tested and excluded, longitudinal data remain necessary in order to optimally contrast “selection” and “socialization” hypotheses (e.g., Simons-Morton et al. 2004). Second, while the archival nature of this study allowed us access to a large and nationally representative sample, we were necessarily limited to the pre-selected items already available. Thus, the variable assessing the amount of money available to the employed children did not provide a

unique assessment of income earned from employment, as it could have also included money from allowances not necessarily linked to employment. In addition, given that the reasons why teenagers choose to work are critical in predicting subsequent outcomes (Dupre et al. 2006), future research might assess whether young children choose to engage in employment specifically to fund this habit.

Third, the effect sizes yielded in the current study are very small, but we suggest that the applied significance of the current findings should not be understated by the statistical effect sizes. Small effect sizes can be meaningful in some circumstances (Prentice and Miller 1992), and we suggest that the effect of early employment intensity on cigarette use is important for several reasons. First, the serious adverse consequences of tobacco use are well documented (e.g., Max 2000) and community health efforts are increasingly aimed at preventing smoking (e.g., Lantz et al. 2000). Identifying correlates or predictors of young children’s smoking may result in more focused prevention and intervention initiatives. Second, early involvement in tobacco smoking as a function of employment predicts later involvement (Mihalic and Elliot 1997). Third, the percentage of explained variance may be a misleading criterion when the phenomenon under investigation can be expected to cumulate over time (Abelson 1985); and the increasing negative health effects of smoking reflects one such situation.

One last finding that was not a central focus in this study should not pass without comment. Female students reported engaging in a greater number of odd jobs—but less weekly spending money than did male students. While recognizing that the current data were collected in the fall of 2002, the early emergence of this gender effect highlights the different value assigned to “male” and “female” tasks, even for the youngest of workers (Desmarais and Curtis 1999). Discrimination based on gender is not only salient in adult life, but it also exists at a very young age. To the extent that early employment experience shapes later expectations (Desmarais and Curtis 1999), this disparity suggest that women may be socialized at a very early age to expect less remuneration for tasks than is offered to males, and reinforces the need for further research on the nature and consequences of early employment experiences.

### Conclusion

We investigated the effect of early employment intensity on tobacco use among an unregulated, vulnerable population of young children in Grades 5 through 9. Consistent with earlier observations, children were found to engage in employment at a very young age. More than 50 % of the Grade 5 respondents were involved in some odd jobs; by

Grade 8, over 80 % of the sample was participating in the irregular economy. Participation in odd jobs was linked both to using tobacco and intent to use tobacco through enhanced self-esteem and availability of discretionary spending money. These findings demonstrate that early employment intensity has important, ethical, and complex effects for children, and supports the need for further research that extends the construct of youth employment to include early employment experiences, and to include much younger children than those currently the focus of research and policy. If the current findings are replicated by longitudinal research, and extended to include subjective employment experiences and a broader range of mediator and moderator variables, valuable conceptual, research and policy implications will ensue.

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