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Abstract

In this study, we model the schooling choice and smoking decision of an individual as a function of time preference. Using high school graduate cohort data from the Korean Education and Employment Panel (KEEP) survey 2004-2005, we estimate the effect of smoking during the senior year of high school on academic achievement in terms of the Korean Scholastic Aptitude Test (KSAT) score and college attendance. We perform the Two Stage Least Squares (2SLS) estimation to incorporate the possible endogeneity of smoking status due to unobserved individual heterogeneity. Further, we conduct three identification tests to confirm the validity of our choice of instrumental variables for smoking variable. Findings uniformly show that heavy smoking during the school year is negatively associated with test scores and college attendance. The usual OLS estimates for the cost of youth smoking in educational outcomes are found underestimated.

Keywords: smoking; schooling choice; Korea; high school graduate; identification tests

JEL classification: C12, I12, I21

Introduction

The negative correlation between schooling and unhealthy behaviors such as smoking is one of the stylized facts in health economics. Grossman (1972) hypothesizes that schooling, as a human capital investment, increases the individual's efficiency in producing health. Warner (1982) also explicates that more educated people are more efficient producer of health as their marginal cost of acquiring and understanding health knowledge and value of medical care is lower than less educated people. Thus, highly educated people are more likely to avoid unhealthy lifestyle, such as smoking and as a consequence, to maintain better health status. This view have received empirical support from Grossman (1976), Berger and Leigh (1989), Kenkel (1991) and Sanders (1995).

Farrell and Fuchs (1982), on the other hand, renounce the Grossman's approach to schooling-to-health causality, and suggest that time preference may be the true causing factor to both schooling and health. The individual decision on educational investment may be influenced by each individual's assessment on the present value of the future (Mincer, 1974; Card, 1999). People with lower (higher) discount rates would invest more (less) on education by forgoing the present earnings and also invest more (less) on health by avoiding cigarette smoking or other health-impairing activities, than those who discount more (less) the future. Grossman's view on the schooling-health causality is challenged by Farrell and Fuchs's observation that smoking at age 24 is determined at age 17 before the schooling is obtained. Thus, individuals may make decisions on smoking and school in a sequential fashion according to their discount rates. Since time preference of an individual is not directly observed, smoking habit in the past is often considered as the observable realization of discount rate of an individual in examining its relationship with the future educational outcomes (Fuchs, 1982; Brunello, 2002; Fersterer and Winder-Ebmer, 2003).

In this study, we examine the smoking-to-schooling relation by both theoretical and empirical approaches. We consider cigarette smoking in the past as a good indicator for discount rates of individuals and thus, a good predictor for schooling outcomes later on (Evans and Montgomery, 1994; Chevalier and Walker, 2001; Fersterer and Winter-Ebmer, 2003). We first develop a theoretical model to illustrate how time preference connects schooling decision and smoking status of an individual. Our theoretical model predicts that when smoking decision

reflects high time preference of an individual, he/she who chooses to smoke will be likely to achieve lower educational outcomes than the counterpart individual with low time preference.

We explore data from the Korean Education and Employment Panel (KEEP) survey 2004-2005 in order to assess what differences would be produced by the smoking habits during high school years in regard to the Korean Scholastic Ability Test (KSAT) scores and college attendance status among high school graduate cohort of year 2004.

Recognizing the potential endogeneity of smoking variable, we perform the Two-Stage Least Squares (2SLS) estimation using information on peer pressure, physical and mental stress. The influences of student attributes, family background, school and region-specific conditions controlled for.

Findings show that smoking in the senior year of high school has a statistically significant and negative association with educational outcomes in the KSAT scores and college attendance. Validity tests on the instrumental variables (Anderson, 1951; Cragg and Donald, 1994; Hayashi, 2000; Stock and Yogo, 2005) confirm that these 2SLS results are robust to weak instruments bias. We conclude that smoking at schooling age addresses economic costs in later years in terms of academic performance and this cost is not attributable to individual, family, or school-related factors.

The remainder of this paper is organized as follows: Section II presents the theoretical model of smoking and schooling choice linked by individual time preference. Section III explains the empirical methodology and the choice of instrumental variables. Section IV describes data and sample. Section V presents the estimation results, and Section VI concludes.

Theoretical Framework

We model the schooling choice of an individual following Festerer and Winter-Ebmer (2003) and Card (1999). Individuals choose the optimal years of schooling (S) by maximizing the present value of future earnings, $V(S)$ defined as follows:

$$V(S) = \int_S^{\infty} E(S)e^{-\rho t} dt = \frac{E(S)e^{-\rho S}}{\rho},$$

where $E(S)$ indicates the average yearly earnings that individuals would receive after completing S years of education and ρ denotes the individual-specific discount rates.

The optimal level of schooling will be determined by the first order condition that equates the marginal return to the future earnings to the marginal cost of additional education:

$$\frac{E'(S)}{E(S)} = \rho. \quad (1)$$

We assume that the marginal return to the future earnings, $\frac{E'(S)}{E(S)}$ depends on individual characteristics and decreases with the level of schooling as follows:

$$\frac{E'(S)}{E(S)} = X_i\beta - \gamma S + \varepsilon_i \text{ where } \gamma > 0 \quad (2)$$

Then, the optimization condition (1) is rewritten as:

$$X_i\beta - \gamma S + \varepsilon_i = \rho$$

(3) In equation (3), we predict that the optimal level of schooling is negatively associated with high value of ρ .

In the line with Culter and Glaeser (2005), we further assume that individuals choose the amount of smoking (C) (where $C = 0$ means non-smoking) and also decide when to initiate smoking (T). We define $\varphi(C, T)$ as the average net benefit of cigarette smoking for an individual to receive per year after T :

$$\varphi(C, T) = R(C) + \Pi(T)s(C)e^{-\rho}$$

where $R(C)$ is individual-specific net utility to smoking ($R'(C) > 0, R''(C) < 0$) and $s(C)$ is the probability of survival to the next period ($s'(C) < 0$). $\Pi(T)$ indicates the value of survival to the next period with $\Pi'(T) < 0$, assuming that the value of additional year of life decreases with the smoking initiating age of an individual. Then, individual decisions on C and T are determined to maximize the discounted value of lifetime benefit of smoking, $U(C, T)$:

$$U(C, T) = \int_T^{\infty} \varphi(C, T)e^{-\rho t} dt = \frac{\varphi(C, T)e^{-\rho T}}{\rho},$$

where ρ denotes the discount rate.

From the log utility function, $\log U(C, T) = \log \varphi(C, T) - \rho T - \log \rho$, we derive the first order conditions for T and C as follows:

$$\left. \frac{\varphi'(C, T)}{\varphi(C, T)} \right|_T = 0, \text{ and } \left. \frac{\varphi'(C, T)}{\varphi(C, T)} \right|_C = \rho. \quad (4)$$

Solving two equations in (4), we obtain the following:

$$V(T) = \frac{R'(C)}{s'(C)e^{-\rho}} \equiv V^*(C). \quad (5)$$

By inserting (5) into the second equation in (4), we are given:

$$\rho = \frac{V^*(C)s(C)s'(C)e^{-\rho}}{R(C)s'(C) - R'(C)s(C)} \equiv h(C). \quad (6)$$

We now assume that the marginal utility of smoking is individual-specific and linearly depends on smoking:

$$h(C) = \delta C_i + u_i. \quad (7)$$

Equation (6) and (7) predict that high time preference, thus, high value of ρ , is positively associated with smoking behavior.

Combining (3), (6) and (7), we obtain the equation of the optimal level of education, S^* :

$$S^* = X_i \tilde{\beta} - \tilde{\delta} C_i + e_i, \quad (8)$$

where $\tilde{\beta} = \frac{\beta}{\gamma}$, $\tilde{\delta} = \frac{\delta}{\gamma}$, and $e_i = \frac{\varepsilon_i - u_i}{\gamma}$. Equation (8) formulates the regression equation we estimate to examine the relationship between smoking status and schooling outcomes.

Estimation Methods

The empirical analysis of equation (8) is complicated by the potential endogeneity of smoking status which may be caused by the possibility that there exist an unobserved factor simultaneously affecting smoking decision and schooling choice of an individual. To address the selection bias in the conventional linear estimation model, we apply the Two Stage Least Squares (2SLS)¹ and conduct validity tests for our choice of instrumental variables.

The validity of instruments is confirmed in three aspects. First, instrumental variables, Z , should be correctly excluded from the schooling choice equation and uncorrelated with its error. This 'exclusion restriction' is verified using Sargan-Hansen' overidentification test (Hayashi, 2000). Secondly, Z should be correlated with the endogenous variable. If not, we have an underidentification problem, which can be tested using Anderson's LM test (Anderson, 1951).

¹ Unlike KSAT scores, college attendance status is measured as a binary variable. Thus, we assume the linear probability model and apply the 2SLS technique to the estimation of college attendance equation.

In general, the correlation between Z and the error term is highly plausible when the error term comprehends individual-fixed factors. Then, the overidentifying restrictions to exclude Z become invalid, and as a consequence, cause the asymptotic bias in the IV estimator. If the correlation between Z and the endogenous variable is fairly sizable, however, the consistency of IV estimators may be preserved even when there is an overidentification problem. Hence, the weak correlation between the Z and the endogenous variable, or the weak IV problem may raise a serious issue of inconsistency in IV estimators. To establish the robustness of our 2SLS estimates, we perform the weak identification test using Cragg-Donald (1993) F-statistic and apply the Stock and Yogo (2005) critical values to this test statistic.

We speculate three categories of factors which may affect a student's smoking behavior but not schooling outcomes: peer pressure, physical and mental stress, and ignorance of value in health and healthy lifestyle. We select a set of instrumental variables which pass all of three validity tests: (1) gender of a student (being male) (MALE)² and characters of close friends are our proxies for peer effect on smoking (FRIEND); (2) feeling anxiety on school life/family matters/friendship (CONCERN), having a serious impulse to commit suicide (SUICIDE), having interest in school life (INTEREST), and having a trustworthy relationship with teachers (TEACHER), and the extra hours of sleep per day exceeding to the average sleep hours among our sample students (EX_SLEEP) are our choice of proxies to measure physical and mental stress a student may bear in daily life; (3) having an experience of sexual intercourse (SEX), whether to have breakfast every day (BFAST_ALLDAY) and the status of being overweight (OVERWGT) are our measures for healthy lifestyle. BFAST_ALLDAY, OVERWGT, and EX_SLEEP variable are the included instruments since the overidentification test suggests invalidity of excluding these variables. The full description of variable definitions is presented in Tables A1 and A2. For comparison, we report the OLS and 2SLS estimates and assess if the OLS estimates are biased due to the unobserved heterogeneity in smoking and schooling decisions.

Data and Sample

² MALE variable is found to be a relevant determinant for college attendance status by the overidentification test, so that is included in the main equation of college attendance.

We use data from the Korean Education and Employment Panel (KEEP). The KEEP is a longitudinal survey of a nationally representative sample of middle and high school students in Korea, conducted by the Korea Research Institute for Vocational Education and Training (KRIVET). Launched in 2004. The KEEP randomly select total 6,000 students around the country, including 2,000 senior middle school students, 2,000 senior vocational high school students, and 2,000 senior general high school students. The survey questionnaires consist of four sections, student components, household components, teacher component, and school administrator component, which collect a comprehensive set of information regarding student's school life, relationship with parents and friends, academic achievement, career plan, educational environment at home, parents' employment status, family income, assets and expenditure, school management and facility, and teacher qualification. The survey for 2004 wave is conducted during March – August, 2008.

We limit our sample to senior high school students graduated in 2004 for the purpose of examining the relationship between their smoking behavior in 3rd year of high school and academic performance. Dependent variables are the KSAT scores and college attendance status to represent educational outcomes of a student. The KSAT scores are available for students, who agreed to release their scores and did take the test on November, 2008. Total KSAT scores are computed by aggregating the scores of 8 different subjects, such as Korean literature, mathematics, English, liberal arts, natural science and foreign language. Information on college attendance of a student is available through the KEEP 2005 wave.

Table 1 summarizes the composition and characteristics of our sample. The rate of college attendance is 70.6%: 69.6% of the general high school students and 53.3% of the vocational high school students. 95.4% of students graduating from the general high schools reported college attendance as their plan after graduation (N=1715) and 81.1% of the planned students did attend college (N=1391). In the case of students from the vocational high schools, 68.4% of students planned to go to college (N=1367) and 77.9% of planned students did enter college (N=1065). The average KSAT scores are 163.6 for students from the vocational high schools and 325.9 for those from the general high schools.

Table 2 presents the smoking patterns among the high school senior students. There are 623 students who reported as smokers (15.6%): 23% for the vocational high school students and 8.2% of the general high school students, which suggests that the school type may be an

important condition for students' decision on smoking. The average smoking intensity is about 3 packs per week among smokers. We control various confounding factors such as student effort, family attributes, healthy lifestyle, school attributes, and region-specific conditions (Tables A2).

Results

Table 3 reports the regression estimates for covariates of the KSAT scores of high school students.

Student effort and healthy lifestyle

We find that students who planned to go to college and who desired higher educational level actually achieved higher scores in the KSAT (51.1 and 38.2, respectively, $p < 0.01$). These variables represent students' motivation to pursue further education, which may have empowered them to study hard precisely focusing to college entrance. In this regard, student's plan and desire for higher education may capture their time preference, which renders the effect of smoking habit on the KSAT score more likely be interpreted as the 'cost' of smoking.

Hours of self-study and the number of books read are also positively related with the KSAT scores (14.6 and 12.1, respectively, $p < 0.01$). Hours of private tutoring, on the other hand, have a small negative effect on the KSAT scores (-1.59, $p < 0.05$). These findings indicate that expensive private tutoring is almost of no use to obtain high test scores. As the conventional wisdom in education suggests, students who read more books in various subjects such as literature, history, natural and social science, and who can effectively study on their own would achieve better academic performance.

If students are dating with boy/girl friend, they are more likely to achieve lower KSAT scores than those who do not date (-29.8, $p < 0.01$). This implies that dating may be a distracting factor for high school students. Healthy lifestyle, such as having breakfast every day (28.9, $p < 0.01$) and maintaining the normal body weight (24.0, $p < 0.01$) are the promoting factors for the KSAT score achievement, as expected.

Family, school and regional attributes

Family background of students is measured by parents' educational attainment variables, which we expect to capture the genetic factor of students' academic ability. We find that the education level of parents does not have a statistically meaningful effect on the KSAT scores of students, except for the mother's education as college or more (31.0, $p < 0.05$).

A more important factor is found to be parents' attention paid on students' school life and friends, although the magnitude of this effect (2.32, $p < 0.05$) is minimal relative to student effort factors. Household income and school attributes are mostly insignificant except for the school type and the co-education status: attending a vocational high school (-78.0, $p < 0.01$) and a school of co-education (-18.3, $p < 0.01$) is negatively associated with the KSAT scores. It suggests that as the vocational high schools primarily focus on providing practical knowledge and skills immediately useful at workplace, students in those schools may experience lack of resources and thus, difficulties in achieving high test scores for college entrance.

Residing in metropolitan cities and other city areas, thus, attending schools located in these cities is a highly positive and significant factor for the KSAT score achievement (43.8 and 48.6, respectively, $p < 0.01$). Students in rural area may have limited resources to support their study as library, museum, online and offline access to studying materials may be relatively constrained in those regions.

Smoking, test Scores, and college attendance

In Table 4, we present the results from the OLS and 2SLS estimations of smoking decision equation. We find that if students smoke one more pack of cigarettes per week, they are likely to achieve lower test scores by 14.7 points, which is the OLS estimate. The 2SLS estimate is even larger, 36.3 points. Anderson's underidentification test rejects that our choice of instruments are uncorrelated with smoking variable. Cragg-Donald test for weak identification suggests that our instrumental variables have a fairly strong correlation with the smoking variable, so that our 2SLS estimators are consistent. Sargan-Hansen test for overidentification says that exclusion of our choice of instruments is statistically valid ($p = 0.595$).

When we estimate the college attendance equation (Table 5), one additional pack of cigarettes smoked per week is found to reduce the probability of attending college by .018 (OLS) and by .064 (2SLS). Again, our instrumental variables are confirmed valid by three identification tests. Findings in Tables 4 and 5 uniformly suggest that smoking during the school year negatively affects the test score at the end of school year and college attendance among high school students.

A major empirical challenge in studies on the connection between schooling and smoking is that they can cause each other. In our study, this raises an issue that smoking behavior could be affected by educational performance. We mitigate this problem by using information on smoking

during the school year of high school graduates and associating it with test scores at the end of year. Since our sample individuals are educational cohort, differences in schooling are unlikely to account for differences in their smoking behaviors. Moreover, their educational outcomes (both test scores and college attendance) are determined after their smoking status is identified, thus, impossible to affect their smoking decisions in the past months.

Conclusions

The results of this study indicate that smoking impedes academic performance of high school students. We provide both theoretical framework and empirical evidence that smoking and educational outcomes are connected by time preference and smoking during school year may cause lower achievement in test scores and also in college entrance. We deal with endogeneity issue of schooling and smoking by the 2SLS method. Also, the time lag between smoking status and educational outcomes enables us to interpret the result with little contamination from endogeneity bias.

According to our utility maximization framework, individuals make the rational decisions regarding healthy behaviors and educational choice based on their time preference. In these decision-making, they are involved only with 'private' benefit and costs, ignoring externality to the society their behaviors would generate. As smoking is a well-known cause for negative externality to population health, productivity of labor force, and medical costs shared by non-smokers, the socially optimal level of smoking would be lower than the privately chosen level of smoking. Thus, any collective action to promote anti-smoking may trespass individuals' optimal choice.

One limitation of this study is that the social value of lower educational outcomes among smokers is not addressed to lead policy implications on public health promotion. Further study is warranted to examine how much of social costs may be generated by individuals' rational decisions on smoking. The long-term consequences of smoking among students need also further analysis to investigate the connection between smoking at young ages and outcomes in later years of life, for example, in terms of wages (Hersch and Viscusi, 1990; Levine, Gustafson, and Velenchik, 1997; Viscusi and Hersch, 2001; Fersterer and Winter-Ebmer, 2003) and health risks (Izumi, Tsuji, and et al., 2001). Provided that the average educational outcomes in the population, particularly in the young population is one of the most important resources for a country's

economic growth and that smoking is addictive (Chaloupka, 1991) and raises health risk, it is an important issue in public health that anti-smoking policy should target the population of schooling age. In this regard, the Korean government appears to play its legitimate role by continuously increasing cigarette tax and ratifying the Framework Convention on Tobacco Control (FCTC).

References

Anderson, T. W. (1951). Estimating linear restrictions on regression coefficients for multivariate normal distributions. *Annals of Mathematical Statistics*, 22, 327-351.

Berger, M. C., & Leigh, J. P. (1989). School, self-selection and health. *Journal of Human Resources*, 24(3), 433-455.

Brunello, G. (2002). Absolute risk aversion and the returns to education. *Educational Economic Review*, 21(6), 635-640.

Card, D. (1999). The Causal effect of education on earnings. In Orley Ashenfelter, & David Card (Eds.), *Handbook of Labor Economics*, Vol. 3. Amsterdam: North-Holland.

Chaloupka, F. (1991). Rational addictive behavior and cigarette smoking. *Journal of Political Economy*, 99(4), 722-742.

Chevalier, A., & Walker, I. (2001). Further results on the returns to education in the UK. In Colm Harmon, Ian Walker, & Niels Westergaard-Nielsen (Eds.), *Education and Earnings in Europe: A Cross Country Analysis of the Returns to Education*. Edward Elgar Publishing, Cheltenham: UK, pp. 302-330.

Cragg, J. G., & Donald, S. G. (1993). Testing identifiability and specification in instrumental variable models. *Econometric Theory*, 9, 222-240.

Culter, D., & Glaeser, E. (2005). What explains differences in smoking, drinking, and other health-related behaviors? *American Economic Review*, 95(2), 238-242.

Evans, W. N., & Montgomery, E. (1994). Education and health: where there's smoke there's an instrument. NBER WP 4949.

Farrell, P., & Fuchs, V. R. (1982). Schooling and health: the cigarette connection. *Journal of Health Economics*, 1, 217-230.

Fersterer, J., & Winter-Ebmer, R. (2003). Smoking, discount rates, and returns to education. *Economics of Education Review*, 22, 561-566.

Fersterer, J., & Winter-Ebmer, R. (2003). Are Austrian returns to education falling over time? *Labour Economics*, 10(1), 73-89.

- Fuchs, V. R. (1982). Time preference and health: an explanatory study. In Victor R. Fuchs (Eds.), *Economic Aspects of Health*. Chicago: University of Chicago Press.
- Grossman, M. (1972). *The Demand for Health*. New York: National Bureau of Economic Research.
- Grossman, M. (1975). The correlation between health and smoking. In Nester E. Terlecky (Eds.), *Household Production and Consumption*. New York: Columbia University Press (for National Bureau of Economic Research).
- Hayashi, F. (2000). *Econometrics*. Princeton: Princeton University Press.
- Hersch, J., & Viscusi, W. K. (1990). Cigarette smoking, seatbelt use, and differences in wage-risk tradeoffs. *Journal of Human Resources*, 25(2), 202-227.
- Kenkel, D. S. (1991). Health behavior, health knowledge, and schooling. *Journal of Political Economy*, 99(2), 287-305.
- Levine, P. B., Gustafson, T. A., & Velenchik, A. D. (1997). More bad news for smokers? the effects of cigarette smoking on wages. *Industrial and Labor Relations Review*, 50(3), 493-509.
- Mincer, J. (1974). *Schooling, Experience and Earnings*. New York: National Bureau of Economic Research.
- Sanders, W. (1995). Schooling and quitting smoking. *Review of Economics and Statistics*, 77(1), 191-199.
- Stock, J. H., & Yogo, M. (2005). Testing for weak instruments in linear IV regression. In D. W. K. Andrews & J. H. Stock (Eds.), *Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg*. Cambridge: Cambridge University Press.
- Viscusi, W. K., & Hersch, J. (2001). Cigarette smokers as job risk takers. *Review of Economics and Statistics*, 83(2), 269-280.
- Warner, K. E. (1982). Smoking and schooling: in search of missing link. *Journal of Health Economics*, 1, 291-298.

Table 1. Sample of High School Graduates Cohort

School type	Sample size	Plan to attend college (%)	KSAT score (Scale: 0~800) (N= 2,158)*		College attendance (%)
			Average	Maximum	
Vocational	2000	1367 (68.4%)	163.6	483	1065 (53.3%) [77.9%]
General	2000	1907 (95.4%)	325.9	768	1391 (69.6%) [81.1%]
Total	4000	3274 (81.9%)	292.6	768	2456 (70.6%) [75.0%]

Notes: * Information on whether a student registered for the KSAT test and the KSAT score he/she achieved is collected upon the agreement of students: 3,856 out of 4,000 surveyed students agreed to release their KSAT scores. 2,305 students who agreed to information release actually registered for the tests and there were 146 registered students who were absent for the test. Hence, the KSAT scores are available only for 2,158 students.

Table 2. Smoking Status of High School Graduates

School type	Sample size	Smoking rate (%)	The number of packs smoked per week*	
			Average	Maximum
Vocational	2000	459 (23.0%)	3.04	13
General	2000	164 (8.20%)	2.72	10
Total	4000	623 (15.6%)	2.96	13

Notes: * Calculated for smokers only.

Table 3. Estimates for the Effects of Control Variables on KSAT Scores

	OLS		IV	
	Coeff.	Std.err.	Coeff.	Std.err.
Student effort				
PLAN_COLLEGE	51.1**	14.7	48.7**	14.8
DESIRE_EDU	38.2**	4.48	37.5**	4.51
STUDYHR	14.6**	1.56	14.2**	1.58
TUTORHR	-1.59*	.619	-1.49**	.623
BOOK	12.1**	1.59	12.4**	1.60
DATING	-29.8**	9.06	-21.0*	9.86
EX_SLEEP	-12.2*	5.80	-9.95	5.91
Healthy lifestyle				
BFAST_ALLDAY	28.9**	6.41	25.7**	6.58
OVERWGT	-24.0**	9.07	-23.6**	9.11
Family attributes				
F_EDU2	3.63	9.38	3.12	9.42
F_EDU3	12.4	11.6	12.0	11.7
M_EDU2	-11.3	8.43	-10.9	8.46
M_EDU3	31.0*	13.4	31.8*	13.4
ATTENTION	2.32*	.970	2.08*	.979
SUPPORT	.606	.547	.527	.550
HHINCOME	-.023	.018	-.015	.018
School attributes				
TYPE	78.0**	8.87	75.5**	8.97
HARDWARE	-.156	1.30	-.197	1.30
SOFTWARE	1.71	1.01	1.78	1.01
COED	-18.3**	6.36	-17.9**	6.38
Region-specific condition				
REGION1	43.8**	9.27	45.5**	9.33
REGION2	48.6**	9.43	49.5**	9.47
Constant	-178.0**	37.8	-163.4**	38.5

Notes: ** and * indicate the 1% and 5% statistical significance, respectively.

Table 4. Smoking and KSAT Scores

Type of School	OLS	IV
The number of packs smoked per week	-14.7 (3.44)**	-36.3 (9.95)**
Adjusted R-sq	0.373	0.368
Anderson LM test for underidentification		229.9**
Cragg-Donald F test for weak identification		36.8^
Sargan-Hansen test for overidentification		4.61
Partial R-sq for excluded instruments		0.12

Notes: ** and * indicate the 5% and 1% statistical significant, respectively.

^ Stock and Yogo critical values are as follows: 19.85 = 5% maximal IV relative bias, 11.29 = 10% maximal IV relative bias; 31.50 = 10% maximal IV size, 17.38 = 15% maximal IV size.

Table 5. Smoking and College Attendance

Type of School	OLS	IV
The number of packs smoked per week	-.018 (.007)**	-.064 (.018)**
Adjusted R-sq	0.147	0.141
Anderson LM test for underidentification		384.9**
Cragg-Donald F test for weak identification		72.9^
Sargan-Hansen test for overidentification		4.48
Partial R-sq for excluded instruments		0.13

Notes: ** and * indicate the 5% and 1% statistical significant, respectively.

^ Stock and Yogo critical values are as follows: 19.28 = 5% maximal IV relative bias, 11.12 = 10% maximal IV relative bias; 29.18 = 10% maximal IV size, 16.23 = 15% maximal IV size.

Appendix

Table A1. Variable Definitions (Excluded Instruments Only)

Variable name	Definition
Peer pressure	
MALE	Gender of the student (1= male, 0= female)
FRIEND	Characters of close friends (6 attributes; each scaled 1 not at all – 5 very much)
Physical/mental stress	
CONCERN	Feeling anxiety on school life and relationship with family/friend/teachers
SUICIDE	Having a serious impulse to commit suicide
INTEREST	Having interest in school life
TEACHER	Having a trustworthy relationship with teachers
Healthy lifestyle	
SEX	Having an experience of sexual intercourse

Table A2. Variable Definitions (Control Variables)

Variable name	Definition
Student effort	
PLAN_COLLEGE	College education is the plan after graduation (1= yes, 0= no)
DESIRE_EDU	Desired level of education (1= high school, 2 = 2-year college, 3= 4-year university, 4= Master's degree, and 5= Doctorate degree)
STUDYHR	Average hours of self-study per week
TUTORHR	Total hours of private tutoring per week
BOOK	The number of books read during high school years
DATING	Currently dating with boy/girl friend (1= yes, 0= no)
EX_SLEEP	Extra hours of sleep (more than 6 hrs per day)
Healthy lifestyle	
BFAST_ALLDAY	Having breakfast every day (1= yes, 2= no, sometimes or never)
OVERWGT	Being overweight (BMI>25)
Family attributes	
F_EDU#	Dummy variables for father's education level (# =1 less than high school (base); =2 high school graduation; =3 college or more)
M_EDU#	Dummy variables for mother's education level (# =1 less than high school (base); =2 high school graduation; =3 college or more)
ATTENTION	Parents knowing well about student's life (6 attributes; each scaled 1not at all – 5 very well)
SUPPORT	Student's evaluation on the relationship with parents (5 attributes; each scaled 1 not at all – 5 very much)
HHINCOME	Household income per month (in KW10000)
School attributes	
TYPE	Dummy variable for school type (1= general, 0= vocational)
HARDWARE	Quality of school facilities/physical condition evaluated by teachers (4 attributes; each scaled 1 very poor – 5 very good)
SOFTWARE	Qualitative attributes of school evaluated by teachers (7 attributes, each scaled 1 very poor – 5 very good)
COED	Dummy variable for school being of co-education (1= yes, 0= no)
Region-specific condition	
REGION1	Dummy variable for the residence in metropolitan cities (특별시, 광역시)
REGION2	Dummy variable for the residence in city/county area (시, 군, 구)
REGION3	Dummy variable for the residence in small town/island/mountain area (읍, 면, 도서벽지) (base)

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