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Who Are Truant Youth? Examining Distinctive Profiles of Truant Youth Using Latent Profile Analysis

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Abstract

The present study explored the heterogeneity of truant youth to provide a more nuanced examination of the nature of adolescent truancy and examine distinct profiles of truant youth as they relate to externalizing behaviors. Latent profile analysis was employed to examine the heterogeneity of truant youth by using a nationally representative sample of 1,646 truant adolescents (49.8 % female) from the 2010 National Survey on Drug Use and Health. Five key indicator variables were utilized to identify latent classes: school engagement, participation in school-based activities, grades, parental academic involvement, and number of school days skipped. Additionally, multinomial regression was employed to examine the relationship between latent truant youth classes and externalizing behaviors. Four classes of truant youth were identified: *achievers* (28.55 %), *moderate students* (24.30 %), *academically disengaged* (40.89 %), and *chronic skippers* (6.26 %). Additionally, group membership was found to be associated differentially with marijuana use, fighting, theft and selling drugs. Results from the present study suggest that truant youth are not a homogenous group, but rather present with different risk profiles as they relate to key indicators, demographic characteristics and externalizing behaviors. Implications for practice, policy and future research are discussed.

Keywords

Truancy; Latent profile analysis; Externalizing behaviors

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Conflict of interest The authors report no conflicts of interest.

Introduction

Truancy is a significant and long-standing social and public health issue in the United States. Although the prevalence of truancy is challenging to estimate due to a lack of uniformity in definitions and reporting standards, recent studies using large nationally representative samples have found truancy rates to be at 11 % (Henry 2007; Vaughn et al. 2012), which translates into approximately 2 million students being truant from school at least once in a given month (U.S. Census Bureau 2011). Despite multiple and significant efforts to reduce truancy, patterns of truancy have remained relatively stable over the past decade according to educational data (National Center for Education Statistics 2006), with other indicators showing truancy to be on the rise as demonstrated by a 69 % increase in the number of truancy cases petitioned and handled in juvenile courts in the United States (Stahl 2008). The persistently high rates of truancy, along with the wide and far-reaching life consequences of truancy, suggest the need for further research to better understand truancy and truant youth.

Consequences and Risks Associated with Truancy

Truancy has been described as a “first step to a lifetime of problems” (Garry 1996, p. 1), as truancy has been found to be associated with serious behavioral and academic risk behaviors that can impact negatively the wellbeing and development of youth. Studies have found that students who are absent from school are more likely to drop out of school (Henry et al. 2012) and less likely to be employed 6 months after the end of compulsory schooling, which in turn negatively impacts their earning potential over their lifetime (Attwood and Croll 2006). A substantial body of literature has elucidated the close link of truancy to substance use (Best et al. 2006; Henry 2010); delinquency and crime (Hirschfield and Gasper 2011; Lochner and Moretti 2004); and other health risk behaviors (Pathammavong et al. 2011), with truancy sharing many similar demographic, contextual and relational risk factors that have been identified with delinquency and substance use (Vaughn et al. 2011). Moreover, recent studies provide strong evidence that truancy is part of the externalizing behavior spectrum (Hirschfield and Gasper 2011; Vaughn et al. 2012). Truancy also has been shown to be associated with negative implications for schools and communities. Truancy has been implicated in the loss of school funding, lower school-wide performance, and the loss of learning time and associated costs that result from the time teachers and administrators spend on absent students (Goldstein et al. 2003). The negative impact of truancy and school dropout on communities manifests itself in the financial impact resulting from a less educated workforce, costs associated with higher rates of criminal activity, loss to businesses as a result of youth shoplifting, and higher government spending for social services (Baker et al. 2001). As evident by the far-reaching and negative outcomes associated with truancy, truancy is recognized as a serious problem and has garnered significant attention from researchers, school personnel and the government alike.

Given the continued pervasiveness of truancy and the host of problematic social and health risk behaviors associated with truancy, efforts across various fields and by the US government have focused on both understanding the nature of truancy and developing and implementing intervention and policy efforts to reduce truancy. The study of truancy has been focused primarily on studying the causes and correlates of truancy in various domains, including individual characteristics and risk factors as well as school, family, and community factors. Risk factors in each domain have demonstrated some relationship with truancy. Individual risk factors include demographic variables, such as race, age and socioeconomic status, as well as academic and behavioral characteristics (Vaughn et al. 2012; Corville-Smith et al. 1998), such as poor school performance (Henry and Huizinga 2007; Hunt and Hopko 2009), personality characteristics (Lounsbury et al. 2004) and mental

health and learning disabilities (Southwell 2006). As indicated by the extant literature, a number of individual risk factors have been found to be associated with truancy.

In addition to individual factors, family, school and other contextual factors have been implicated as risk factors for truancy. Family factors include poverty, family conflict, parental education, parental attitudes toward education and parental involvement in their child's school/education (Malcolm et al. 2003; Romero and Lee 2008). School factors identified as causal or correlational to truancy include school culture, curriculum, poor teaching, negative school environment, interpersonal conflict or poor relationships with teachers, dissatisfaction with school, school disciplinary practices, and threats to physical safety such as bullying (Corville-Smith et al. 1998; Malcolm et al. 2003). Some notable community/contextual factors associated with truancy include delinquent peer affiliations (Henry and Huizinga 2007), employment and other opportunities in the community, neighborhood characteristics and the level of organization, levels of social support, community norms, and community violence (Bowen et al. 2002; Lyon and Cotler 2007; MacDonald and Marsh 2007). The growing body of literature on truancy has led to an increased recognition that truancy is a complex and heterogeneous problem that can be influenced by a number of factors in various domains (Kearney 2008; Kim and Streeter 2006; Lauchlan 2003).

The Heterogeneity of Truant Youth

Although truancy is seen as a complex and heterogeneous problem, much of the research examining truant youth seems to assume that truant youth comprise a homogeneous group. Up to this point, little has been done to investigate possible differential typologies of truant youth, which could allow for more specific and targeted interventions designed to meet the needs and risk factors associated with the different typologies of truants. Studies examining characteristics of truant youth or correlates of truancy rarely have attempted to examine the heterogeneity of the truant youth in their sample beyond sociodemographic variables. This may, in part, be due to the small sample sizes and geographically circumscribed non-probability convenience samples that traditionally have plagued truancy research. Furthermore, research in the area of truancy has been primarily descriptive and correlational in nature in attempts to identify global risk factors in particular domains of interest, rather than trying to examine and identify subgroups of truant youth defined by multiple indicators.

There are reasons, however, to believe that truant youth are not a homogeneous group and not all intervention programs may be appropriate for all truant youth. In a study using a large, nationally representative sample, Vaughn et al. (2012), found that truant youth who reported higher rates of skipping were 1.5–2 times more likely than less frequent skippers to report alcohol and drug use, serious fighting at school, carrying a handgun, selling illegal drugs, stealing/trying to steal 3 or more times, and attacking with intent to seriously harm. Likewise, a Canadian study found that students who skipped school more frequently were more likely than less frequent skippers to smoke or have ever tried marijuana and alcohol (Pathammavong et al. 2011). These two studies suggest potential heterogeneity among truant youth around externalizing risk behaviors, albeit as indicated only in the relationship to the frequency of skipping school. Nevertheless, the strong evidence of the heterogeneous nature of truancy, more recent evidence pointing to potential heterogeneity of truant youth and continued pervasiveness of the problem of truancy underscores the need for additional, and more nuanced, examinations of truancy and truant youth.

Present Study Purpose

Truant youth often are discussed in the literature as if they are a homogenous group, yet the problem of truancy has been described as a heterogeneous problem. The discrepancy

between the heterogeneity of the causes and correlates of truancy and the presumed homogeneity of truant youth hampers efforts to effectively understand, prevent and intervene with truant youth. Examining and identifying profiles of truant youth could advance theory and the development and evaluation of prevention and intervention programs and policies by providing an alternative framework and more nuanced understanding, leading to differential interventions targeting the different needs and risk profiles of truant youth.

This study improves upon and expands the current knowledge base on truancy by exploring the presence of heterogeneity among truant youth and examining the relationship between subgroups of truant youth and externalizing behaviors. A nationally representative sample and large data set comprised of an array of variables assessing externalizing behaviors, academic, school engagement, parent involvement and demographic characteristics were utilized in this study. As such, we were able to explore questions that have not yet fully been examined by other investigators. Additionally, the use of latent profile analysis employed in this study permits a level of methodological rigor that, to our knowledge, has not been utilized in the study of truant youth. Specifically, two primary research questions were examined in this study. First, what, if any, profiles of truant youth can be identified among youth ages 12–17 in the United States? Second, to what extent, if any, can differences between profiles of truant youth be identified in terms of externalizing behaviors, such as substance use, aggression and delinquency? We hypothesized that rather than being a homogeneous group, truant youth would fall into relatively distinct clusters, thus providing evidence of heterogeneity. Additionally, we hypothesized that membership in the different classes would be associated differentially with externalizing behaviors reported by truant youth. In examining truant youth in a more in-depth and nuanced way to identify potential subgroups of truant youth, our goal is to extend current understanding and theory to provide potentially new avenues for intervention and research.

Method

Sample and Procedures

This study is based on public-use data from the 2010 National Survey on Drug Use and Health (NSDUH; SAM-HSA 2011). The NSDUH is designed to provide population estimates of substance use and health-related behaviors in the US general population. It utilizes multistage area probability sampling methods to select a representative sample of the US civilian, non-institutionalized population aged 12 years or older for participation in the study. With respect to the NSDUH, all 50 states and the District of Columbia were employed. Study participants include household residents; residents of shelters, rooming houses, and group homes; and civilians residing on military bases. To improve the precision of drug use estimates for subgroups, adolescents aged 12–17 years were oversampled.

National Survey on Drug Use and Health study participants were interviewed in private at their places of residence. Potential participants were assured that their names would not be recorded and that their responses would be kept strictly confidential. Participants were paid thirty dollars for their participation. The NSDUH interview utilizes a computer-assisted interviewing (CAI) methodology to increase the likelihood of valid respondent reports of illicit drug use behaviors (SAMHSA 2011). The CAI methodology includes a combination of computer-assisted personal interviewing (CAPI) and audio computer-assisted self-interviewing (ACASI) methodologies. A more detailed description of the NSDUH sampling and data collection procedures are documented in greater detail elsewhere (SAMHSA 2011).

A total of 68,487 respondents aged 12 years or older completed the 2010 survey. Weighted response rates were 88.8 % for household screening and 74.7 % for interviewing (SAMHSA

2011). Each independent, cross-sectional NSDUH sample was considered representative of the US general population aged 12 years or older. The current study restricted analyses to adolescents aged 12–17 years that reported having skipped one or more days of school during the previous 30-day period (N = 1,646). The mean age of the sample is 15.2 years (SD = 1.6). The respondents were evenly distributed between males (50.2 %) and females (49.8 %), but, in keeping with national averages for adolescents in the general population, are unevenly distributed in terms of race/ethnicity. More than half of the respondents are White (55.5 %), more than two-fifths Hispanic (22.7 %), and 14.1 % are African-American. The remaining 7.8 % of youth reported American Indian or Alaska Native, Asian, other Pacific Islander or Native Hawaiian identities, or more than one race and were categorized as "other" race/ethnicity. The annual family income of 18.3 % of the sample is less than $20,000; 37.9 % have income between $20,000 and $49,999; 17.8 % have income between $50,000 and $74,999; and 25.9 % have more than $75,000 in annual family income.

Measures

Indicator Variables—This study identified subgroups of truant adolescents on the basis of five key indicator variables: school engagement, participation in school-based activities, grades, parental academic involvement, and the number of school days skipped during the previous 30 day period. Preliminary analyses indicated that all five academic indicator variables were significantly correlated with one another with small to medium coefficients. As was expected, the measures of positive school behaviors and outcomes (i.e. school engagement, participation in school activities, grades, and parental academic involvement) were correlated negatively with the frequency of skipping school.

School Engagement: The measure of school engagement is comprised of five items relating to respondents' feelings toward school during the previous 12-month period. Two items tapped the frequency of school engagement moments such as "How often did you feel that the school work you were assigned to do was meaningful and important?" and "How often did your teachers let you know when you were doing a good job with your school work?" Response categories for both of these items included "never", "seldom", "sometimes", and "always". An additional item queried, "How interesting do you think most of your courses at school have been?" with response categories including "very boring" (10.30 %), "somewhat boring" (22.27 %), "somewhat interesting" (49.36 %), and "very interesting" (18.07 %). A fourth item asked, ''How important do you think the things you have learned in school are going to be to you later in life?" with response items including "very unimportant" (4.64 %), "somewhat unimportant" (11.94 %), "somewhat important" (43.00 %), and "very important" (40.42 %). A final item measured overall school attitude and read "Which of the statements below best describes how you felt overall about going to school?" with a 4-item response format that included, "You hated going to school" (10.15 %), "You didn't like going to school very much" (20.19 %), "You kind of liked going to school" (47.15 %), "You liked going to school a lot" (22.51 %). All five items were coded so that lower values represented lower levels of school engagement and higher values represented high levels of school engagement. This five item measure of school engagement was found to have acceptable validity and reliability with all items loading onto a single latent factor and an acceptable Cronbach's Alpha coefficient of 0.765.

Participation in School Activities: Participation in school activities was measured by asking respondents: "How many school-based activities have you been involved in during the previous 12 months?" Respondents were categorized into four ordinal categories that included no activities (20.62 %), one activity (30.51 %), two activities (25.81 %), and three or more activities (23.06 %).

Grades: Grades were measured by asking respondents: “What were your average grades for the last semester or grading period you completed?” Response categories were coded into four ordinal groups including “A” (21.19 %), “B” (38.50 %), “C” (29.90 %), and “D or lower” (10.41 %). Response categories were recoded to range from 1 to 4 with higher values representing greater academic achievement and lower values representing academic difficulty.

Parental Academic Involvement: Parental academic involvement was measured by asking respondents: “During the past 12 months, how often did your parents provide you with help with your homework when you needed it?” Response categories included “never” (16.87 %), “seldom” (15.07 %), “sometimes” (26.42 %), and “always” (41.64 %). Response categories were coded so that lower values represented lower parental help and higher values represented higher parental help.

Number of School Days Skipped: Number of school days skipped was measured by asking respondents: “During the past 30 days, how many days did you miss school because you skipped or ‘cut’ or just didn’t want to be there?” Responses ranged from 1 to 30 days.

Indicator Covariates—Several key sociodemographic variables were included as covariates to refine the identification of subgroups of truant adolescents. The following variables were used: age, gender, race/ethnicity [non-Hispanic white, non-Hispanic black, Hispanic, and other (American Indian or Alaska Native, Asian, other Pacific Islander or Native Hawaiian, and persons reporting more than one race)], total annual family income (less than $20,000, $20,000 to $49,999, $50,000 to $74,999, and $75,000 or more), and father in the household. Family income was ascertained by asking respondents: “Of these income groups, which category best represents your total combined family income during the previous calendar year?” Because adolescents are often unable to provide accurate estimates about family household income, responses from an adult or other household member were provided.

Externalizing Factors

Substance Use: Two items measured adolescent substance use. Specifically, substance use items assessed use in the previous 12-month period of *alcohol* and *marijuana*. Adolescents who had used alcohol (51.66 %) or marijuana (30.57 %) were identified by responding to questions about the frequency of use of each of the aforementioned substances during the previous 12 months. These items were measured by the following questions: “On how many days in the past 12 months did you drink an alcoholic beverage?” and “On how many days in the past 12 months did you use marijuana or hashish?” For each item, youth who responded that they had not used these substances on any days were coded as 0 while youth who reported one or more instances of use were coded as 1. We choose these two substance use behaviors because they are relatively common in comparison to other substances—such as ecstasy, cocaine, or opiates—that have low base rates of use.

Antisocial Behavior: Three measures of past year antisocial behavior were examined in this study: *theft, selling drugs*, and *fighting*. Adolescents who had engaged in these behaviors were identified by responding to questions about the frequency of engagement in violent and delinquent behaviors during the previous 12 months. Adolescents who engaged in theft (8.81 %) were identified by asking, “During the past 12 months, how many times have you stolen or tried to steal anything worth more than $50?” Similarly, adolescents who engaged in selling drugs (7.91 %) were identified by asking, “During the past 12 months, how many times have you sold illegal drugs?” Finally, adolescents who engaged in fighting (30.52 %) were identified based on whether they responded affirmatively to the question, “During the

past 12 months, how many times have you gotten into a serious fight at school or work?" For each item, youth who responded that they had not taken part in each behavior were coded as 0 while youth who reported one or more instances of engagement were coded as 1.

Statistical Analyses

Statistical analyses were carried out in a multistep process. First, latent profile analysis (LPA) was conducted in order to identify subpopulations of youth in the sample. To this end, a series of latent profile models ranging from 1 to 4 classes were carried out using Latent GOLD® 4.5 software (Vermunt and Magidson 2008) in order to identify distinct profiles of truant adolescents. LPA is a statistical procedure that assigns subjects to their most likely subgroups on the basis of observed data. This procedure is conceptually similar to latent class analysis (LCA) with the exception that LPA is used with continuous indicator variables whereas LCA is used for categorical indicator variables. Several criteria were used to identify the best fitting model, including: the Bayesian Information Criterion (BIC), Akaike's Information Criterion (AIC), Consistent Akaike's Information Criterion (CAIC), and Log Likelihood. Simulation studies have demonstrated that the BIC is typically a superior indicator as compared to AIC, CAIC, and other information criterion statistics (Yang 2006); however, a variety of indicators are used frequently in the identification of the number of classes in LPA and other mixture modeling techniques (Nylund et al. 2007). Bootstrapping methods—i.e. the re-running of the model based on 1,000 random iterations—also were employed to examine the differences between the three and four class solutions. The virtue of bootstrapping is that it can be used as a resampling technique that relaxes the assumptions about the distribution of indicator variables and allows for the comparison of fit indices between specified class solutions (Van der Heijden et al. 1997).

In terms of the interpretation of these indicators, lower AIC, CAIC, and BIC values and higher log likelihood values reflect better model fit. Notably, the conceptual meaningfulness and interpretability of various class solutions also were considered to assist in the identification of the final model. As noted by Nylund et al. (2007), in addition to the evaluation of the statistical fit indicators described above, a key criterion for the selection of the number of classes is the degree of congruence between the classes and extant substantive theory. It should be noted that we use the term *class* in the same manner as studies that use latent class analysis, which, as noted above, is similar to latent profile analysis except that the models are specified with dichotomous indicators. Our use of the term relates to the categorical formulation of the latent variable that is common to both analyses. The term does not relate to statistical procedures unless otherwise noted.

Having identified a latent profile solution, subjects subsequently were assigned to classes based on the probability of membership as indicated by the model. This profile solution was, in turn, validated by using multinomial regression to predict class membership based on externalizing adolescent behaviors. The class with the highest overall rates of academic engagement was selected as the reference category. Relative risk ratios and accompanying confidence intervals were estimated. Relative risk ratios refer to the ratio of the absolute risks in two particular groups, that is, the ratio of the probability of the occurrence of an event given a particular condition versus the occurrence of the event given a distinct condition (Polit 2010). In the case of multinomial regression with latent classes, relative risk ratios refer to the likelihood of membership in one particular class versus a specified reference class and are conceptually similar to odds ratios (Zhang and Yu 1998). Statistical procedures involving prevalence estimates and regression models were conducted using Stata 12.1SE survey data functions (StataCorp 2011). This system implements a Taylor series linearization to adjust standard errors of estimates for complex survey sampling design effects including clustered multistage data.

Results

Mean Values of Academic Characteristics

Table 1 presents the mean values of key indicator variables for the truant adolescent sample in general as well as for early and middle/late adolescence subgroupings. In terms of school engagement, the mean value of 2.88 for adolescents in general indicates that, on average, adolescents reported moderate levels of school engagement. While the mean value for school engagement among younger adolescents was slightly higher than that of older adolescents (2.93 vs. 2.85, $p < .05$, $d = 0.13$), these figures indicate that, on average, both younger and older adolescents report moderate levels of school engagement. In terms of participation in school activities, the mean number of activities reported for all adolescents was 1.51 activities. Consistent with school engagement, while the differences were substantively minimal, younger adolescents reported greater participation in school activities than older adolescents (1.72 vs. 1.42, $p < .001$, $d = 0.28$). On average, in terms of academic achievement, the mean letter grade for adolescents in general was between a B and C average (2.63). Younger adolescents tended to report grades that were slightly higher than their older adolescent counterparts, but the general trend in terms of grades was quite similar (2.77 vs. 2.57, $p < .001$, $d = 0.22$). The adolescent mean of 2.95 for the frequency of parental help with homework when needed suggests that parents, on average, somewhat inconsistently provide needed assistance. Notably, younger adolescents reported slightly higher levels of homework assistance than did their older adolescent counterparts (3.17 vs. 2.85 $p < .001$, $d = 0.30$). Finally, in terms of the number of days skipped, the mean value for adolescents in general of 2.65 indicates that, on average, adolescents tended to skip between two and three school days per month. Worthy of note, the mean number of school days skipped among younger adolescents was significantly lower than that of older adolescents (2.24 vs. 2.85, $p < .001$, $d = 0.19$).

Identification of Latent Classes

An analysis of the latent profile models indicated that the four class solution was the statistically and conceptually best fitting model. As revealed in Table 2, the AIC, CAIC, and BIC values for the four class solution were lower and the log likelihood value higher than the respective values of all previous solutions. This evidence was further substantiated by the statistically significant Log Likelihood difference between the three class and the more complex four class solution (LL difference = 195.66, $p < .001$). Additionally, as seen in Figs. 1 and 2, the accelerated flattening of the BIC and Log Likelihood values in the four class solution indicated that the inclusion of additional classes would not be parsimonious. Finally, the conceptual makeup of the four class solution suggested that this solution effectively identified a substantively meaningful and interpretable modeling of the academic heterogeneity of the sample. Overall, the steadily increasing values of the information criterion indicators, the significant Log Likelihood difference using the bootstrapping method, and the accelerated flattening of the information criterion indicators suggested that the four class solution was optimal in terms of identifying a parsimonious, statistically viable, and substantively coherent latent profile solution.

The conceptual fit of the latent profile models was examined by means of plotting the mean values of the five academic characteristics for each of the latent classes. The four class solution is comprised of an *achiever* class (28.55 %, N = 470), a *moderate student class* (24.30 %, N = 400), an *academically disengaged* class (40.89 %, N = 673), and a *chronic skipper* class (6.26 %, N = 103). Figure 3 presents the standardized mean values for each of the indicator variables across the four latent classes. These four classes are clearly distinguishable and conceptually interpretable. As seen in Table 3, the achiever class is characterized by elevated levels of school engagement (M = 15.34, SD = 2.38) as well as the

highest levels of participation in school activities (M = 2.18, SD = 0.93), grades (M = 3.49, SD = 0.55), and parental academic involvement (M = 3.37, SD = 0.93). This class is characterized by the lowest levels of skipping of any class (M = 1.58, SD = 1.04). The moderate student class is also characterized by an overall elevated level of school engagement (M = 17.02, SD = 1.72), but—in contrast with the achiever class—is at mean levels in terms of all other academic characteristics. The academically disengaged class and the chronic skipper class are both very similar in terms of low levels of school engagement, infrequent participation in school activities, poor grades, and comparatively low levels of parental help with homework. However, the mean number of days skipped among members of the academically disengaged class (M = 2.12, SD = 1.40) is similar to that of the achiever (M = 1.58, SD = 1.04) and moderate student (M = 2.17, SD = 1.46) classes while the mean number of days skipped among the chronic skipper class is substantially larger than that of any other class (M = 12.96, SD = 6.60). Notably, the academically disengaged class is the largest class, accounting for more than 2/5 of the sample (40.89 %, N = 673) while the chronic skipper class is markedly smaller than the other classes (6.26 %, N = 103). In all, these four clusters represent a clearly distinguishable, conceptually interpretable, sufficiently parsimonious, and statistically acceptable cluster solution representative of the heterogeneity of the sample.

Sociodemographic Profile of Latent Classes

Table 4 reveals percentages and confidence intervals of sociodemographic characteristics of each latent class. The achiever class stands out as the class with the highest proportion of female youth (70.17 %), White youth (79.09 %), and youth with their father in the home (85.62 %). This class also has the lowest proportion of very low income youth (3.77 %) and the highest proportion of youth living in families with income levels above $75,000 per year (48.37 %). The moderate student class has the highest proportion of male youth (71.01 %), the highest proportion of minority youth (88.34 %), and the largest proportion of youth from families that earn less than $50,000 per year (82.82 %). The academically disengaged class is virtually split in terms of gender (50.24 % male vs. 49.76 % female) and has the second highest proportion of White youth of any class (67.22 %). The chronic skipper class has a substantially larger proportion of youth aged 16–17 than any other class (62.98 %). However, the chronic skipper class is distributed relatively evenly in terms of racial/ethnic identity with substantial proportions of White (40.14 %), African-American (22.04 %), and Hispanic (30.79 %) youth. The vast majority of youth in the chronic skipper class are from families with income levels below $50,000 annually (73.22 %). Finally, the proportion of youth without a father in the household in the chronic skipper class is markedly higher than that of all other classes (52.35 %).

Externalizing Behaviors Associated with Identified Latent Classes

Table 5 displays results of a multinomial logistic regression examining the associations between externalizing behaviors and the identified latent classes with the achiever class serving as the reference. In terms of substance use, while no significant associations were identified between membership in any of the classes and alcohol use, membership in the academically disengaged and chronic skipper classes was associated significantly with marijuana use. Indeed, compared to members of the achiever class, youth in the academically disengaged class were more than two times more likely to have smoked marijuana in the previous year (RR = 2.12, CI = 1.43–3.14). The strength of this association is substantially greater among members of the chronic skipper class as these youth were nearly four times more likely than the achiever class to report marijuana use (RR = 3.98, CI = 1.95–8.15). Membership in the chronic skipper class was also associated with the increased likelihood of participation in delinquent behavior. Compared to members of the achiever class, youth in the chronic skipper class were roughly five times more likely to

have stolen a valuable item (RR = 5.13, CI = 2.09–12.60) and taken part in selling drugs (RR = 4.89, CI = 1.59–15.03). While the strength of the association was weaker, youth in the moderate student class were also significantly more likely than the achiever class to have stolen a valuable item (RR = 2.17, CI = 1.02–4.62). In terms of violence, membership in all three latent classes was strongly associated with the increased likelihood of fighting. More precisely, members of the moderate student, academically disengaged, and chronic skipper classes were all approximately three times more likely to have been in a fight than members of the achiever class.

Discussion

The high prevalence and serious negative developmental outcomes and social and behavioral risks associated with truancy understandably have attracted much attention. Despite substantial efforts to try to better understand and reduce truancy in the US and other countries, truancy remains a significant problem. Although truancy is recognized as a complex and heterogeneous problem, extant research examining truant youth has assumed that truant youth comprise a homogeneous group. The discrepancy between the heterogeneity of the causes and correlates of truancy and the presumed homogeneity of truant youth hampers efforts to effectively understand, prevent and intervene with truant youth. Recent research has suggested some variability amongst truant youth (Pathammavong et al. 2011; Vaughn et al. 2012); however, the studies were limited to examining variability around the frequency of skipping school. Further examination of potential heterogeneity and identification of subgroups of truant youth could lead to better understanding and, ultimately, more effective prevention and intervention efforts.

This study improves upon and extends the current knowledge base on truancy by exploring the presence of heterogeneity among truant youth utilizing multiple indicator variables and examining the relationship between subgroups of truant youth and externalizing behaviors to provide a more nuanced examination of the nature of adolescent truancy. To our knowledge, the heterogeneity of truant youth has not been examined in prior research utilizing a latent profile methodology. Our goal in employing latent profile analysis was to achieve more precise identification and description of distinctive subgroups of truant youth to inform prevention and intervention efforts, theory and research.

Specifically, we hypothesized that, rather than being a homogeneous group, truant youth would separate into latent classes with distinct characteristics. Moreover, we hypothesized that membership in the different classes would be associated differentially with externalizing behaviors reported by truant youth. Consistent with our first hypothesis, the results of the present analysis suggest that truant youth are not a homogeneous group. In this nationally representative sample of youth who reported skipping school in the prior month, four distinct classes, or subgroups, of truant youth emerged: *achievers, moderate students, academically disengaged*, and *chronic skippers*. These four classes of truant youth were distinguished from one another in terms academic and engagement indicators, chronicity of truancy, parental academic involvement, sociodemographic characteristics and externalizing behaviors. Moreover, our second hypothesis, that group membership would be associated differentially with externalizing behaviors, also was supported. Specifically, the achiever group was less likely than the other three groups to report having participated in marijuana use, theft, selling drugs and fighting. The moderate students were more likely than the achievers to report theft and fighting, the academically engaged students were more likely to report marijuana use and fighting, and the chronic skippers were more likely to report marijuana use, theft, selling drugs, and fighting than other classes. Truant youth in this study were differentiated into four different classes based on several indicator and sociodemographic variables. Moreover, the four classes were validated by the use of

substance use and externalizing behavior variables. The characteristics of these four classes of truant youth provide additional insight and specificity into the understanding of a significant social problem.

The achiever subgroup was comprised of students who reported moderate levels of school engagement, the highest number of school activities, highest grades, the highest level of parental academic involvement and the lowest number of days skipped. Other than having skipped school an average of 1.58 days in the prior month, these truant youth appear to be normative in other areas of school and academic achievement. In terms of externalizing behaviors reported by truant youth in this class, these youth reported significantly less externalizing behaviors than the other three classes of truant youth. Additionally, the achiever class is comprised of the highest percentage of White, female students, with family incomes of greater than $75,000 and having a father in the home. So although the youth in the achiever group are skipping school about the same number of days in the previous month as the moderate and academically disengaged groups, this class of truant youth fairs better than the others groups in terms of contextual (e.g., demographics, parental academic involvement) and dispositional (e.g., grades) risk factors and behavioral outcomes.

The class of students who were identified as the moderate students are highly engaged in school, more so than the achiever class, and reported a similar average number of days skipped as the achiever and academically disengaged classes. This group is distinctive, however, in that the number of school activities, grades and level of parental academic involvement fall in the middle of the other classes of truant youth. The moderate students were approximately twice as likely as truant youth in the achiever group to report theft and fighting, but not statistically significantly different in terms of substance use and selling drugs. Additionally, this group of truant youth is comprised of the highest proportion of Hispanic students, the largest proportion of students with family incomes less than $20,000 and the highest proportion of male students. Although this group appears to be highly engaged in school, truant youth in the moderate group present with a relatively greater number of contextual risk factors than the other groups and a relative moderate level of dispositional risk and externalizing behaviors.

The academically disengaged group of truant youth comprises the largest class of truant youth, with 41 % of the truant youth in our sample falling into this group. This group of truant youth report about the same mean number of days skipped as the achievers and moderate students, but report lower school engagement, participating in fewer school activities, lower grades and lower parental academic involvement than the achiever and moderate students. The academically disengaged group was two times more likely to report marijuana use and three times more likely to report fighting than truant youth in the achiever group. Additionally, the sociodemographic characteristics of truant youth in this group are somewhat unremarkable compared to the other groups. This group presents with a relatively higher level of dispositional risk factors and moderate level of contextual risk and externalizing behaviors.

The chronic skipper group of truant youth is distinguished by the high rate of skipping reported and the lowest level of school engagement, grades and participation in school activities compared to the other three classes of truant youth. Moreover, this group was three times more likely to report fighting, almost four times more likely to report marijuana use and about five times more likely to report theft and selling drugs than truant youth in the achiever group. In addition, this group is also more than two times more likely to report the aforementioned externalizing behaviors than the moderate students and academically disengaged classes. This class of truant youth is also comprised of the highest proportion of older adolescents, greater proportion of males, and the highest proportion of youth with no

father in the home. Although this class of truant youth makes up the smallest group (6.26 %), this group's profile, in terms of contextual and dispositional risk factors as well as greater likelihood of engaging in a greater number of externalizing behaviors, points to this group being the most at-risk, or most likely to be on a negative life course trajectory.

From these findings, we would argue that not all truant youth present with the same risk and likelihood of poor developmental outcomes. For youth in the achiever class, truancy may be viewed as a rebellious activity that youth engage in to exert their autonomy (Moffitt 1993; Moffitt and Caspi 2001) rather than a strong indicator of other problematic behaviors. For some youth, like those in the moderate student or academically disengaged classes who appear from the identified profiles to be at relative moderate risk, truancy may be a risk factor or indicator of other comorbid problems, such as substance use, aggression or delinquency. These two groups of youth, however, also present some positive behaviors and protective factors (i.e., higher engagement for moderate students and protective socioeconomic characteristics of the academically disengaged group) that could prevent their dissension toward a negative life course. For youth in the chronic truant group, on the other hand, truancy may be a very strong indicator of comorbid conditions and externalizing behavior problems. Recent research has shown that externalizing, especially at high levels, is concurrent with the increased probability of a range of mental health disorders (Vaughn et al. 2011). For these youth, truancy may be another of many externalizing behaviors that are present, they have fewer protective sociodemographic characteristics and are also the least engaged and doing most poorly in school. Although tentative, our findings suggest that truancy may not, indeed, be the "first step to a lifetime of problems" (Garry 1996, p. 1). Rather, truancy may be one of many behavioral indicators that need to be examined within the context of youth development, relative dispositional and contextual risk and protective factors and other comorbid conditions present for youth. These findings point to the need to further develop a more nuanced understanding of truant youth. Additionally, evidence of heterogeneity amongst truant youth suggests a need to examine our current practices and policies to address truancy. Implications for practice and policy will be discussed in light of our present findings.

Implications for Practice and Policy

The findings from the present study suggest that not all truant youth are the same. Recognizing and understanding that truant youth are not a homogenous group who share the same risk and behavioral profiles and potential life course outcomes is important for practice and policy. Some truant youth present with a relatively lower risk, are doing well academically and do not appear to be at high risk for serious maladjustment. Other truant youth, however, present with clearly higher levels of risk factors and are engaging in substance use, delinquency and aggressive behaviors. The heterogeneity of truant youth in terms of risk and co-morbid conditions found in this study suggests different service needs for truant youth. Additionally, school and public policy approaches often do not adequately consider the complexity and heterogeneity of truant youth, opting instead for a one-size-fits-all strategy to attendance and truancy policies (Kearney 2008). An increased understanding by school officials, juvenile justice jurisdictions and public officials of the nuances and issues presented by truant youth is important for informing the design of policies to more adequately address truancy. Although it is premature to begin prescribing specific interventions or policy recommendations based on the present findings, the findings of this study provide some indication of unique typologies of truant youth, which point to a potential need for differential prevention and intervention responses. Additional research is needed to replicate and build upon our findings.

Future Directions for Research

The findings of the present study provide several implications for future research. First, this study is the first to systematically examine heterogeneity among truant youth relative to academic, school engagement, parental, sociodemographic and externalizing behavior factors. Our findings indicate heterogeneity among youth based on the variables selected for this study. Future research should attempt to replicate these findings to determine whether the pattern of heterogeneity discovered in this investigation of truant youth holds up using other data sets and other variables. Due to the data set utilized for this study, some limitations are present due to the variables measured in the NSDUH study. Future investigators could employ other data sets that include additional variables, such as peer or community context, or include similar variables that may have been measured in different ways. Continuing to examine, refine and add to these preliminary findings is important to better understand truancy and would be a natural extension of this study.

Second, future research could explore the longitudinal trajectory of different latent classes of truant youth. The present study's findings point to differential risk and behavioral profiles of truant youth that, theoretically, may lead to differential outcomes. However, because this study employed a cross-sectional data set, we are unable to ascertain whether youth in the different classes do indeed have different life course trajectories. Following youth over time, or utilizing a longitudinal data set to explore differential outcomes based on latent classes of truant youth, would be an important contribution to truancy research.

Finally, the findings of the present study can be utilized to better inform truancy intervention research. Identifying different profiles of truant youth could assist truancy intervention researchers in examining whether there are differential effects of interventions based on different profiles of the truant youth in the study. Truancy intervention research is currently lacking the specificity of being able to identify which interventions work for whom. By either using risk profiles a priori to assign participants to groups or a posteriori to examine differential responses to treatment based on risk profiles, we can begin to address the nebulous question of what works for whom.

Limitations

The present study is not without limitations and findings from the current investigation should be interpreted accordingly. First, truancy was identified based on a single, self-report measure over a relatively limited time frame. This limitation is not particularly uncommon in truancy research, although it is important to note. Second, the data utilized in this study was cross-sectional, thus preventing not only an assessment of the temporal relationships between variables, but also a temporal look at the unfolding of truancy risk. Moreover, the cross-sectional nature of the data precludes any causal conclusions being inferred from this study. Third, the NSDUH relies on respondent recall and is therefore subject to over- and under-reporting. This can potentially limit the validity of measures influenced by social desirability biases (Holden 2010) such as participation in externalizing behaviors. Moreover, due to limitations of the dataset, the indicator variables used in the latent profile analysis do not measure important relational factors related to truancy such as negative peer affiliation, peer truancy, and peer antisocial beliefs. These omissions are noteworthy given the importance of peer relational factors in adolescent truancy (Henry and Huizinga 2007). Finally, although the NSDUH is a nationally representative sample and broad in scope, it does not include potentially important contextual, situational, precipitating, or biological variables, which are necessary to illuminate more fully the relationship between truancy profiles and risk behavior among truant youth. Future complimentary studies capable of assessing contextual and situational risk of identified correlates are a natural extension of the present investigation.

Conclusion

The extant literature on truancy and truant youth has painted a grim picture of truancy; research to this point has led to a common belief that truancy is a stepping stone leading to a negative developmental pathway. However, the findings from this study shed additional light on truancy and provide a more nuanced understanding of truant youth. The truant youth in this sample comprise four distinct groups who are differentiated from each other on academic and engagement indicators, chronicity of truancy, parental academic involvement, sociodemographic characteristics and externalizing behaviors. Although extant research identifies truancy as a risk indicator for substance use and delinquent behavior, lower academic performance and school engagement (and vice versa), it is apparent from this study that not all truant youth present the same risk for a future of life course problems. Beginning to recognize distinct profiles of truant youth can lead to differentiated and improved interventions. Additionally, as future research investigates truancy to better understand its etiology, developmental course, and consequences, it is our hope that more nuanced and methodologically rigorous approaches will be utilized in the pursuit of understanding and intervening with truant youth.

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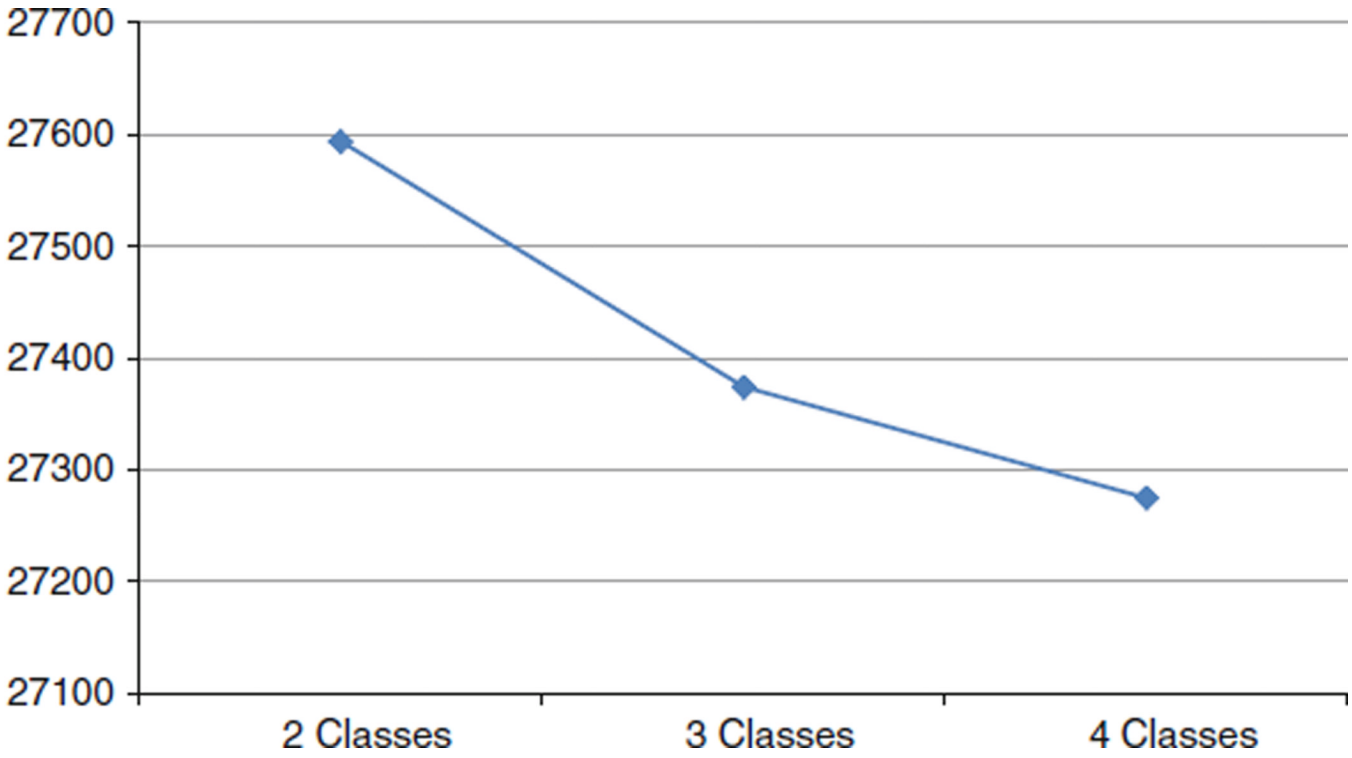

Fig. 1.
Trends in Bayesian information criterion values across latent classes

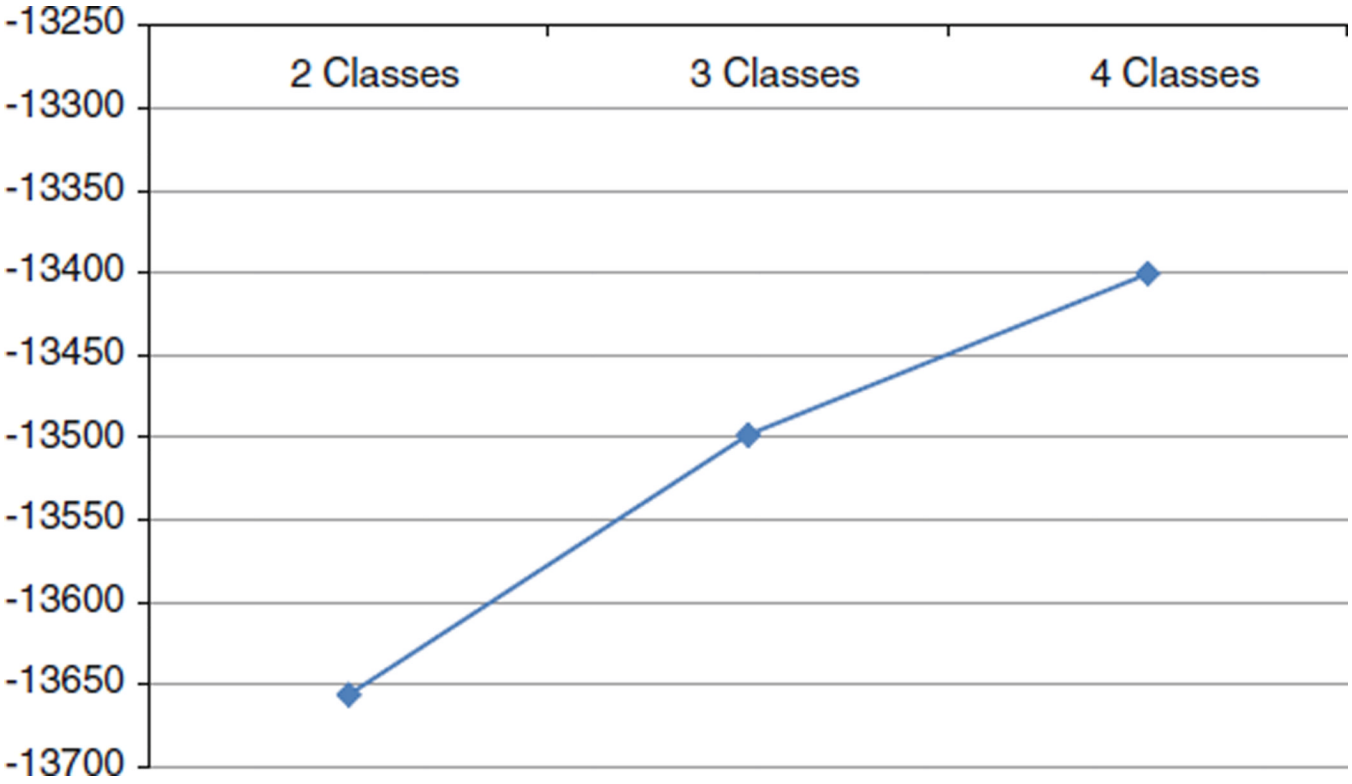

Fig. 2.
Trends in log likelihood values across latent classes

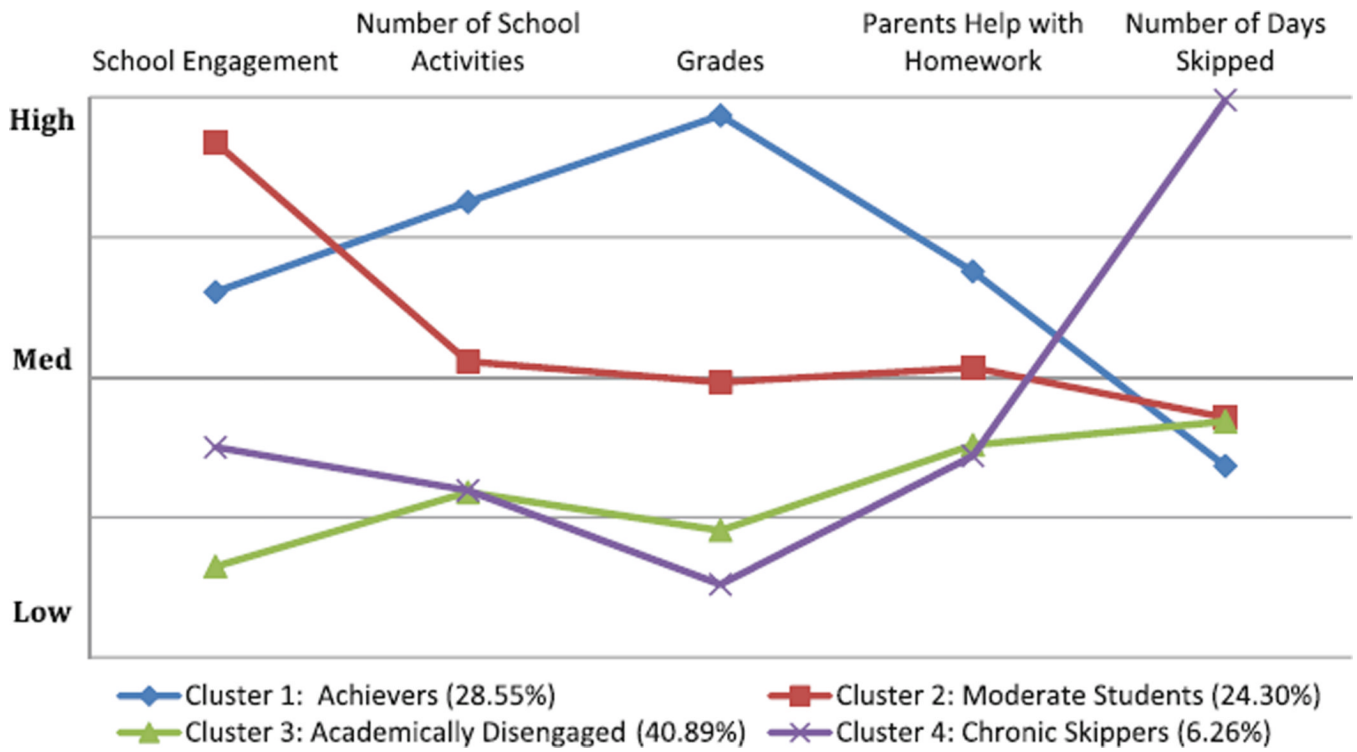

Fig. 3.
Standardized mean academic characteristics of latent classes

Table 1

Mean values of academic characteristics among truant adolescent respondents 12–17

Variables	Full sample (12–17 years)		Younger adolescents (12–14 years)		Older adolescents (15–17 years)		Range
	M	(*SD*)	*M*	(*SD*)	*M*	(*SD*)	
School engagement	2.88	(0.63)	**2.93**	**(0.64)**	2.85	(0.62)	1–4
Number of school activities	1.51	(1.07)	**1.72**	**(1.05)**	1.42	(1.07)	0–3
Grades	2.63	(0.93)	**2.77**	**(0.93)**	2.57	(0.91)	1–4
Parents help with homework	2.95	(1.11)	**3.17**	**(1.01)**	2.85	(1.14)	1–4
Number of days skipped	2.65	(3.39)	2.24	(2.81)	**2.85**	**(3.61)**	1–30

Coefficients in bold indicate statistically significant differences between early and late adolescents at $p < .05$ or lower

Table 2

Fit indices for latent classes

Class solution	BIC	AIC	CAIC	Log likelihood
1 Class	29,293.44	29,158.29	29,318.44	−14,554.13
2 Classes	27,593.72	27,388.29	27,631.72	−13,656.15
3 Classes	27,374.34	27,098.63	27,425.34	−13,498.31
4 Classes	27,274.96	26,928.97	27,338.96	−13,400.49

AIC Akaike's Information Criterion, *BIC* Bayesian Information Criterion, *CAIC* Consistent Akaike's Information Criterion

Table 3

Unstandardized characteristics of latent classes among respondents

Variables	Cluster 1: Achievers	Cluster 2: Moderate students	Cluster 3: Academically disengaged	Cluster 4: Chronic skippers	F statistic	Range
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*		
School engagement	15.34 (2.38)$_a$	17.02 (1.72)$_b$	12.28 (2.66)$_c$	13.61 (3.52)$_d$	345.11*	5–20
Number of school activities	2.18 (0.93)$_a$	1.57 (0.97)$_b$	1.07 (0.96)$_c$	1.08 (1.04)$_c$	129.68*	0–3
Grades	3.49 (0.55)$_a$	2.61 (0.74)$_b$	2.12 (0.76)$_c$	1.95 (0.87)$_c$	359.27*	1–4
Parents help with homework	3.37 (0.93)$_a$	2.99 (1.09)$_b$	2.68 (1.14)$_c$	2.74 (1.12)$_c$	41.15*	1–4
Number of days skipped	1.58 (1.04)$_a$	2.17 (1.46)$_b$	2.12 (1.40)$_c$	12.96 (6.60)$_d$	904.30*	1–30

Means that do not share a subscript are significantly different at $p < .001$

* $p < .001$

Table 4

Sociodemographic characteristics of latent classes

	Class 1: Achievers		Class 2: Moderate students		Class 3: Academically disengaged		Class 4: Chronic skippers		χ^2 significance
	N = 470 (28.55 %)		N = 400 (24.30 %)		N = 673 (40.89 %)		N = 103 (6.26 %)		
	%	95 % CI	%	95 % CI	%	95 % CI	%	95 % CI	
Age									
12–13	26.55	(21.7–32.0)	20.49	(15.2–27.1)	11.30	(8.4–15.0)	11.12	(4.6–24.7)	<.001
14–15	28.10	(23.1–33.7)	30.67	(24.3–37.9)	33.16	(28.5–38.2)	25.90	(16.4–38.4)	
16–17	45.35	(39.4–51.4)	48.84	(41.9–51.8)	55.54	(50.4–60.6)	62.98	(49.2–74.9)	
Gender									
Female	70.17	(64.5–75.3)	28.99	(23.2–35.6)	49.76	(44.6–54.9)	34.65	(24.0–47.1)	<.001
Male	29.83	(24.7–35.5)	71.01	(64.4–76.8)	50.24	(45.1–55.4)	65.35	(52.9–76.0)	
Race/ethnicity									
White	79.09	(73.3–83.9)	11.66	(7.8–17.0)	67.22	(62.2–71.9)	40.14	(27.7–53.9)	<.001
African-American	4.42	(2.2–8.6)	38.94	(32.6–45.6)	4.74	(3.1–7.3)	22.04	(12.8–35.1)	
Hispanic	8.26	(5.1–13.1)	40.28	(33.4–47.5)	21.35	(17.3–26.1)	30.79	(19.4–45.1)	
Other	8.23	(5.7–11.8)	9.12	(5.6–14.5)	6.69	(4.6–9.6)	7.03	(2.3–19.7)	
Family income									
<$20,000	3.77	(2.1–6.6)	37.48	(30.9–44.5)	16.28	(13.2–19.9)	25.70	(16.0–38.5)	<.001
$20,000–$49,000	22.35	(17.9–27.5)	45.34	(38.5–52.4)	43.53	(38.4–48.8)	47.52	(34.2–61.2)	
$50,000–$74,000	25.52	(20.5–31.3)	11.17	(6.87–17.6)	16.74	(13.4–20.7)	13.54	(6.8–25.2)	
>$75,000	48.37	(42.4–54.4)	6.01	(3.80–9.39)	23.45	(19.1–28.4)	13.24	(6.9–24.0)	
Father in home									
Yes	85.62	(81.4–89.0)	58.85	(51.8–65.5)	65.39	(60.4–70.0)	47.65	(34.4–61.3)	<.001
No	14.38	(11.0–18.6)	41.15	(34.5–48.1)	34.61	(30.0–39.6)	52.35	(38.7–65.6)	

Table 5

Externalizing characteristics of latent classes

Variables	Class 2: Moderate students		Class 3: Academically disengaged		Class 4: Chronic skippers	
	RR	**95 % CI**	**RR**	**95 % CI**	**RR**	**95 % CI**
Alcohol use	0.85	(0.57–1.28)	1.40	(0.98–2.00)	1.02	(0.49–2.14)
Marijuana use	1.18	(0.75–1.87)	**2.12**	**(1.43–3.14)**	**3.98**	**(1.95–8.15)**
Theft > $50	**2.17**	**(1.02–4.62)**	1.37	(0.69–2.71)	**5.13**	**(2.09–12.60)**
Drug sales	2.27	(0.97–5.30)	1.49	(0.75–2.96)	**4.89**	**(1.59–15.00)**
Fighting	**2.56**	**(1.65–3.95)**	**3.15**	**(2.14–4.63)**	**3.24**	**(1.69–6.21)**

Reference = Class 1 (Achievers)

Coefficients in bold are statistically significant at $p < .05$ or lower

Risk ratios adjusted for age, gender, race/ethnicity family income, and father in home