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Original article

Socioeconomic Position and Adolescent Trajectories in Smoking, Drinking, and Psychiatric Distress

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A B S T R A C T

Purpose: Smoking, drinking, and psychiatric distress are inter-related and may also be associated with socioeconomic position (SEP). This paper investigates the role of SEP in adolescent development across all three of these outcomes.
Methods: Data were self-reported by adolescents in the Twenty-07 Study (N = 1,515) at ages 15, 17, and 18 years. Latent class analysis was used to identify homogeneous subgroups of adolescents with distinct developmental patterns. Associations between developmental patterns and a range of socioeconomic indicators were then tested.
Results: Five classes were identified. A *Low Risk* class had low levels for all outcomes. A *High Distress* class had persistently high levels of distress, but was otherwise similar to the *Low Risk* group. A *High Drinking* class drank alcohol earlier and more heavily but also had higher levels of distress than the *Low Risk* group. Smokers were grouped in two classes, *Early Smokers* and *Late Smokers*, and both also had raised levels of drinking and distress. *Early Smokers* tended to begin earlier and smoke more heavily than *Late Smokers*. Relative to the *Low Risk* class, adolescents in a disadvantaged SEP were more likely to be *Early Smokers* and somewhat less likely to be in the *High Drinking* class. SEP was not consistently associated with membership in the *High Distress* or *Late Smokers* classes.
Conclusions: Associations with SEP are evident in opposing directions or absent depending on the combination and timing of outcomes, suggesting that a disadvantaged SEP is not a simple common cause for all three outcomes.

IMPLICATIONS AND CONTRIBUTION

A disadvantaged socioeconomic position is specifically associated with a developmental pattern where smoking begins early and higher levels of drinking and distress follow. Outside of this pattern, drinking and distress appear somewhat more common among more affluent adolescents. Such opposing processes are only apparent when examining these outcomes in combination.

Smoking and excessive alcohol consumption (hereafter referred to as drinking) are related to psychiatric distress (or symptoms of anxiety and depression) in both adolescent and adult populations. These behaviors and symptoms usually begin in adolescence and continue into adulthood [1,2]. Prospective data from adolescents suggest reciprocal relationships with distress leading to smoking and drinking and vice versa [3–5]. Alcohol and tobacco may be used as forms of "self-medication" to manage psychiatric distress, and/or the use of these substances may pre-dispose a person to developing psychiatric symptoms, either through the physiological effects of substance use, or via the disruption of social relationships [6–8]. All three outcomes represent important public health problems: all are associated with mortality [9–11], smoking and drinking carry risks for chronic disease [12,13], and psychiatric distress can be disabling [14], so it is important to understand their development. However, considering the prospective associations among these

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outcomes, there could be significant benefits to examining development holistically across all three. This may help provide insights as to when secondary prevention efforts might be most effective, and improve understanding of etiology [7], because the processes that lead to one of these outcomes occurring in isolation may be different from those processes that lead to them occurring together [15].

One potentially important etiological factor is a person's socioeconomic position (SEP), which could influence each outcome via the stratification of social and economic resources or stressors. If SEP is a common cause then this may explain the associations among these outcomes, though an etiological role of SEP does not exclude further pathways linking the outcomes to each other such as those suggested above. Although adolescents in a disadvantaged SEP are more likely to smoke [16] and experience depressed mood [17], studies on SEP and adolescent drinking vary, showing associations in either direction or no relationship at all [16]. However, these studies have tended to treat each outcome individually, without accounting for the relationships among them. The role of SEP may be clearer if these outcomes are examined together.

This paper aims to identify the most common patterns of adolescent development in smoking, drinking, and psychiatric distress and see whether a disadvantaged SEP is associated with all patterns of increased health risk, or only with specific developmental patterns. Latent class analysis [18] is employed to identify distinct groups of adolescents with similar patterns of development, and then relate membership in those groups to SEP. SEP is commonly measured using a variety of indicators, but each may emphasize particular characteristics [19]. A range of SEP measures are employed to assess whether the associations are robust to measurement differences. Gender is also adjusted for as an important adolescent correlate of these outcomes [20,21].

Methods

Sample

Data are from the Twenty-07 Study based in and around Glasgow in the West of Scotland [22]. People in three age cohorts have been followed for 20 years. This paper involves the youngest cohort, who had a baseline response rate of 85%. Baseline interviews with the respondents and their parents were conducted in 1987 (n = 1,515), a postal survey was conducted approximately 1 year later (n = 1,250), and further follow-up interviews took place in 1990 (n = 1,343). The mean age of the respondents was 15.7, 17.1, and 18.6 years respectively at each of these time-points. Ethical approval was obtained for each wave of data collection from the National Health Service (NHS) and/or Glasgow University Ethics Committees. Written parental consent for respondent's participation was obtained at the start of the baseline interview and from the respondents themselves at the follow-up interview. Regarding the postal survey, consent was indicated by return of the questionnaire. Baseline respondents were representative of the general population of the sampled area [23].

Measures

Outcomes. Respondents self-reported each outcome at each measurement point. Regarding smoking and drinking, respondents were asked about their current status and then for further detail on quantity/frequency if they were current smokers/drinkers. For smokers the number of cigarettes smoked daily was obtained (dividing by 7 where respondents had reported weekly amounts). At baseline drinkers reported the frequency of their drinking, while in the two follow-up surveys they reported their drinking in detail over the past 7 days. Psychiatric distress was assessed using the 12-item General Health Questionnaire (GHQ-12) [24].

A four-category measure was constructed for each outcome to cover the range from no use or no symptoms to heavy use or severe symptom levels. Smoking was categorized at each survey into: not currently smoking, smoking fewer than 1-a-day, smoking regularly (1-a-day or more), and smoking heavily (10-a-day or more). At baseline, drinking was categorized according to the available information into: not currently drinking, drinking less than monthly, monthly drinking, and weekly drinking. At the two later surveys, drinking was categorized into: not currently drinking, drinking less than weekly, weekly drinking within UK recommended limits in the past week (14 units for females, 21 for males) [25], and weekly drinking exceeding recommended limits in past week. Psychiatric distress was categorized using GHQ-12 scores into: no (0), mild (1–2), medium (3–4), and severe symptoms (5+). Across all measures, for convenience, the four categories will be referred to as: none, low, medium, and high.

Covariates

Gender was coded 1 for females, 0 for males. All SEP indicators came from the parental interview at baseline, and were based on parental or household characteristics. They are viewed as representing the SEP of the households in which the adolescents were being raised and are thus considered conceptually as antecedent to the outcomes. Household social class was coded according to the UK Registrar General's 1980 classification [26], using the higher status occupation from couple parents, dichotomized into manual and nonmanual categories. Lone parenthood differentiated between respondents who had a single parent and those whose parents were married or co-habiting, and is viewed as a marker for socioeconomic disadvantage. Housing tenure dichotomized those in owned or mortgaged accommodation and those in rented or other types of accommodation. Parental education (taking the higher value from couples) separated those with and without education beyond the age of 16 years. Parental employment status was coded in three categories for the most economically active parent in the household: full-time, part-time, or not employed. Parents reported whether their weekly household income after tax was less than £50, £50–99, £100–149, £150–199, £200–249, £250–299, £300–349, £350–399, £400–449, £450–499 or greater than £500. The mid-point of the chosen band was equivalized for household composition [27], and the equivalized household income variable was split into tertiles. Area deprivation was based on Carstairs scores for baseline postcode sectors (average population = 5,000) derived from the closest Census information (1991) [28]. Carstairs scores provide an index of deprivation based on proportions of: households in the area that are overcrowded; heads of household in the area who are in social classes IV and V; male heads of household in the area who are unemployed; and households in the area that do not have access to a car. Scores are commonly split into seven groups referred to as deprivation categories. These were further grouped into: least deprived (1–2); middling (3–5); and most deprived (6–7).