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Birth order and participation in school sports and other extracurricular activities

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Abstract

Argys, L.M., Rees, D.I., Averett S.L., & Witoonchart, B. (2006). Birth order and risky adolescent behavior. *Economic Inquiry*, *44*(2), 215–233 demonstrated that a strong link exists between birth order and adolescent risky behavior. Using data on 10th graders from the National Education Longitudinal Study of 1988, we extend the work of Argys et al. by examining the relationship between birth order and participation in school sports and other extracurricular activities. Our results suggest that having an older sibling is associated with an increased probability that males played baseball and football, were members of the school swim team, and participated in cheerleading. Female 10th graders with older siblings were less likely to engage in a variety of extracurricular activities including school band, community service, and yearbook. These results provide additional evidence that birth order is related to adolescent behavior.

JEL classification: I20; J12; J13

Keyword: Educational economics

1. Introduction

A recent spate of studies has produced new evidence of birth-order effects. For instance, work by Price (2006) suggests that parents tend to spend more time with first-born children as compared to second-born children; Argys, Rees, Averett, and Witoonchart (2006) and Ouyang (2004) find that adolescents with older siblings are more likely to engage in a variety of risky behaviors as compared to firstborns; and Black, Devereux, and Salvanes (2005), Booth and Kee (2006), Conley and Glauber (2005), and Gary-Bobo, Picard, and Prieto (2006) show that birth order is negatively related to educational attainment.

Using data on 10th graders from the National Education Longitudinal Study of 1988 (NELS88), we investigate whether there is empirical evidence for yet another birth-order effect: namely, whether birth order is related to participation in high school sports and other extracurricular activities such as student government, school band, and yearbook.

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To our knowledge, no prior study has examined the relationship between birth order and extracurricular activities.

There are a number of plausible explanations for why birth order might be linked to participation in such activities. Older siblings could act as role models or even actively encourage their younger siblings to become involved in sports or take up certain hobbies.[1] Alternatively, the (uneven) distribution of family resources among siblings could lead to differences in participation rates. For instance, if, as suggested by Price's (2006) results, birth order is negatively related to the amount of time a child spends with his or her parents, then we might expect firstborns to possess a wider set of skills and interests than their younger siblings. Finally, it may be the case that birth order affects how children interact with their friends and peers (Soetevent & Kooreman, 2005). If younger siblings hone their interpersonal skills by observing or negotiating with their older brothers and sisters, then the returns to participation in extracurricular activities that require cooperation or teamwork may be positively related to birth order.

Our results suggest that birth order is, in fact, related to the probability that 10th graders participated in a number of extracurricular activities, although the direction of the effect depends on gender and the activity in question. Specifically, we find that males with older siblings were more likely to play football, baseball, and be a member of the swim team than their firstborn counterparts. However, males with older siblings were less likely to join a youth group or to engage in music, art or dance activities. For females, having an older sibling is associated with reductions in the probability of participation in a wide variety of extracurricular activities including school yearbook, community service, and school band or orchestra.

2. Background

Until recently, there was only limited support for the notion that birth order could affect quantifiable measures of success (Kessler, 1991). However, research conducted over the past few years may force social scientists to reevaluate the role of birth order. For example, Black et al. (2005) and others have documented a negative relationship between birth order and educational attainment, while Argys et al. (2006) found that adolescents with older siblings were more likely to drink, smoke cigarettes, use marijuana, and have sex as compared to their firstborn counterparts.

These studies suggest that the effects of birth order may be broader than heretofore documented. If birth order is an important determinant of educational attainment, substance use and sexual activity, then perhaps it is related to additional behaviors that contribute to (or detract from) an individual's chances at of achieving economic success as an adult.

There is, in fact, a fair amount of evidence that participation in at least one extracurricular activity—school athletics—leads to success as an adult. For example, Long and Caudill (1991) found that males who lettered in a sport at college earned 4% more than males who did not letter in a sport, a result that is consistent with claims that sports participation builds character and self-esteem, and teaches individuals how to perform as part of a team. Sports participation has also been linked to positive occupational outcomes (Barber, Eccles, & Stone, 2001), and there is evidence that females athletes are less likely to be sexually active and less likely to experience a teen pregnancy than female non-athletes (Sabo, Miller, Farrell, Barnes, & Melnick, 1998).[2]

However, it should be noted that none of the above studies treated sports participation as an endogenous variable. If unobserved ability is correlated with both the decision to participate in school athletics and the outcome under study, then ordinary least-squares estimates of the effect of sports participation will be biased.

Two studies have attempted to account for this potential problem. Using an instrumental variables framework, Barron, Ewing, and Waddell (2000) found that high school sports participation led to higher educational attainment among males. Using a similar empirical approach, Eide and Ronan (2001) found that the estimated effect of sports participation varied according to the gender

[1] Haynie and McHugh (2003, p. 357) discuss how siblings might influence one another's behavior, and provide a number of references. They note that such influence "occurs through a process of socialization, helping behaviors, cooperative tasks and activities … All of these processes suggest that siblings … may exert direct influence on behaviors … by serving as standards of conduct or role models."

[2] On the other hand, at least two studies have found that athletes were more likely to consume alcohol than non-athletes (Barber et al., 2001; Eccles & Barber, 1999).