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All Things in Moderation? Threshold Effects in Adolescent Extracurricular Participation Intensity and Behavioral Problems

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Abstract

BACKGROUND: School-based extracurricular activity participation is one of the primary avenues for prosocial activity engagement during adolescence. In this study, we test the “overscheduling hypothesis” or whether the negative relationship between structured activity intensity (ie, hours) and adolescent bullying and fighting levels off or declines at moderate to high intensity (ie, threshold effects).

METHODS: This study uses the Dane County Youth Survey (N = 14,124) to investigate the relationship between school-based extracurricular activity participation intensity and bullying perpetration and physical fighting and whether there are threshold effects of activity participation intensity.

RESULTS: The results indicate that there is a negative relationship between extracurricular activity participation intensity and bullying perpetration and physical fighting and that there are threshold effects in these relationships at 3 to 4 hours per week. Results also suggest that low-income adolescents engage in more fighting than other youth and the negative relationship

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Human Subjects Approval Statement

The authors of this manuscript have no conflicts of interest to report. This study utilized deidentified data that was collected as part of the educational practices of the district. Thus, it was exempt from IRB approval.

between activity participation intensity and physical fighting was mainly concentrated among low-income adolescents.

CONCLUSIONS: School-based extracurricular activity participation — in moderation (ie, up to 3–4 hours per week) — may provide a positive, supportive context that could be a promising prevention strategy for bullying and fighting. Implications for future research on how school-based extracurricular activity participation intensity benefits adolescent functioning are discussed.

Keywords

extracurricular activities; bullying; fighting; threshold effects

Bullying and fighting among youth are significant public health concerns. In 2015, 20% of highschool students reported being bullied and 22.6% of high school students had been in a physical fight one or more times on school property in the prior year.¹ The Centers for Disease Control and Prevention (CDC) defines bullying as a form of youth violence that involves any unwanted aggressive behavior by another youth or group of youth that involves observed or perceived power imbalance and is repeated multiple times.² Youth who report bullying victimization are at an increased risk for anxiety, depression, and school difficulties.³ Youth who report being in a physical fight are at increased risk for injury. Approximately, 3% of youth who report being in a physical fight had to be treated by a doctor or a nurse.¹ In addition, there are sex differences in the prevalence of bullying and physical fighting. More school-age girls report bullying behavior compared to boys, while school-age boys report more physical fighting compared to girls.¹ There are also family income differences in reports of physical fighting with adolescents from low-income families reporting more physical fighting than adolescents in middle- to high-income families.⁴ The results are mixed on family income differences in bullying behaviors.⁵

Given that youth report bullying and physical fighting on school property, the school environment may be important in preventing both behaviors. While many schools have anti-bullying programs and policies,⁶ other facets of the school environment that promote positive youth development may serve as additional bullying and fighting prevention strategies. School-based structured activities, particularly extracurricular activities, tend to have a positive influence on adolescents.⁷ School-based extracurricular activity participation is one of the primary avenues for prosocial activity engagement during adolescence. Research on the benefits of participation in school-based extracurricular activities is generally positive.^{7,8} Riese et al⁹ found that extracurricular activity participation was related to less bullying behavior among school-age students. In other studies, school-based extracurricular activity participation is associated with lower rates of a range externalizing behaviors that includes physical fighting,^{10–12} while other research has found no association.^{13,14}

Extracurricular activities may influence whether youth engage in bullying and fighting behavior because it limits the amount of unsupervised time with peers when those behaviors are more likely to occur.⁹ In addition, extracurricular activities often have an adult present who may teach youth how to respectfully interact with their peers and help youth resolve conflict.^{9,15} In fact, research suggests that the number of hours spent in structured activities

(ie, participation intensity) with prosocial peers can shape opportunities to engage in fighting and bullying.¹² However, it may be important to account for the number of hours that youth spend in extracurricular activities.

Recognizing that there are a limited number of hours in a day, researchers are beginning to explicitly test the “overscheduling hypothesis,” or whether the relationship between structured activity intensity and adolescent functioning levels off or declines at moderate to high intensity (ie, threshold effects).¹⁶ Spending a large amount of time in extracurricular activities, whether by choice or not, may result in feelings of stress. This stress may result in youth externalizing this stress in the form of fighting and bullying. To date, few studies have specifically tested whether threshold effects exist in school-based extracurricular activity participation. A notable exception is Randall and Bohnert’s study,¹⁷ which found evidence for threshold effects in that any benefits of participation on social and mental health outcomes leveled off at 5 to 7 hours a week among a sample of high-achieving adolescents.

Previous research also indicates that the relationship between extracurricular activity participation and fighting and bullying varies by sex and family income. Boys tend to participate in more sports activities, while girls tend to participate in more academic clubs.⁸ Stemming from inherent differences in such activities, there may also be differential relationships between activity participation and physical fighting and bullying for boys and girls.

There may also be differential effects of extracurricular activity participation by family income.¹⁸ Low-income adolescents tend to reside in neighborhoods that contain fewer economic resources, community and family services, more delinquent peer groups, and higher rates of violent crime compared to other adolescents.¹⁹ Extracurricular activity participation may protect adolescents in low-income communities from exposure to delinquent peer groups and violent neighborhoods. Nevertheless, a study by Schwartz et al²⁰ suggests that there may be threshold effects of extracurricular activity participation for adolescents from low-income families, despite their benefits for this subpopulation of youth.

Based on the findings from these previous studies, the relationship between school-based extracurricular activity participation intensity and bullying and fighting may vary by sex and family income. However, to date, there is a dearth of research regarding the nature of threshold effects for extracurricular activity participation on bullying and fighting among diverse samples. Thus, the current study aimed to fill several gaps in the field. First, we tested whether school-based activity participation intensity was negatively related to physical fighting and bullying perpetration. Second, we explicitly tested whether threshold effects exist in this relationship. In line with previous research, we hypothesized that there will be a negative relationship between school-based activity participation intensity and fighting and bullying behavior. According to the overscheduling hypothesis, we further hypothesized that there will be threshold effects in these relationships at moderate to high school-based activity participation intensity. Finally, we explored whether there were sex and family income differences in the relationship between school-based extracurricular activity participation intensity and fighting and bullying behavior.

METHODS

Participants

In 2008, the self-report Dane County Youth Survey (DCYS)²¹ was administered to students at all 29 middle and high schools in one county in the Midwest (N = 14,124). The DCYS is collected as part of the educational practices of the district. We obtained de-identified data from the district and was exempt from Institutional Review Board (IRB) approval. The response rate ranged from 90% to 95%. The sample was diverse in terms of sex (47% male and 53% female), age (mean = 14.95; SD = 1.73), and race/ethnicity (White [80%], Black [4%], Hispanic [4%], and other [12%]). The county was also geographically diverse, with some urban/suburban (77% of the sample) and some rural schools (23% of the sample).

Outcome Variables

Bullying perpetration.—The Bullying Subscale²² was used to assess bullying behavior and was constructed by averaging responses to 9 items that assessed the frequency with which students participated in bullying behaviors in the prior 30 days. These behaviors included teasing, upsetting other students for the fun of it, harassing, excluding socially, name calling, rumor spreading, and encouraging fights. Responses ranged from 0 (Never) to 4 (7 or more times; mean = 0.28; SD = 0.44; $\alpha = 0.87$).

Physical fighting.—Fighting was measured based on the following: “How many times did you get into a physical fight in the last 30 days?” Responses ranged from 0 (Never) to 4 (7 or more times). We constructed a dichotomous variable in that those who reported getting into at least one physical fight during the past 30 days were coded as a “1” (10% of students), and “0” otherwise.

Independent Variables

Extracurricular activity participation intensity.—The time that adolescents spent engaging in any type of school-based extracurricular activities was assessed by: “How many hours per week are you involved in extracurricular activities in school?” Response options ranged from 0 (0 hours per week); 1 (1 to 2 hours per week); 2 (2 to 4 hours per week); and 3 (5 or more hours per week; mean = 1.17 (ie, 2 to 4 hours per week); SD = 1.12; Range = 0 to 4). In order to assess whether there were threshold effects, we also created a quadratic participation intensity variable.

Family income.—Family income was measured using student responses indicating whether they received free or reduced school lunches (1 = received free/reduced lunch [29% of students]; 0 = otherwise).

Control variables.—Seven demographic characteristics and time spent in other types of structured activities were included in this study: (1) sex (0 = male; 1 = female); (2) age in years; (3) race (dichotomous indicators for White, Black, Hispanic, and other); (4) hours of club sports participation (occurring outside of school; mean = 0.46; SD = 1.01); (5) hours of unstructured activity time (watching television and playing video games; mean = 1.38; SD =

0.64); (6) dichotomous indicators for part-time (22%) or full-time (3%) employment; and (7) a dichotomous indicator for student volunteering (8%).

Data Analysis

To maximize the sample retained used in the analyses, we constructed 2 separate subsamples based on nonmissing responses for the bullying scale and fighting behavior. For the bullying perpetration analyses, 1622 respondents (11.5%) were excluded from the sample because they did not fully complete the bullying scale or extracurricular activities, resulting in a sample size of 12,502 for the bullying model. For the fighting behavior analyses, 1721 respondents (12.2%) were excluded from the sample, because they were missing data on fighting or extracurricular activities; this resulted in a sample size of 12,403. Those students included in the subsamples did not significantly differ from those excluded on demographic characteristics.

To determine if there were significant sex and family income mean differences on the dependent and independent variables, 1-way analysis of variances were performed with Bonferroni post hoc comparisons. In order to assess whether there were threshold effects, we estimated a series of regression models using Stata along with the “utest” module that explicitly tests for a u-shaped relationship between the quadratic extracurricular activity intensity variable and the outcome variables.²³

For the multivariate models, the nested structure of the data (ie, students within schools) requires the need to account for the clustering of the data, and we used Stata’s clustering correction to estimate the models. We estimated 2 separate sets of models for both bullying and fighting. The first model explicitly tested our first hypothesis on whether there was a threshold effect in extracurricular activity participation by including the extracurricular activity participation intensity variable along with the quadratic term along with the control variables. The second model tested our exploratory questions on whether there were sex and income differences in the benefits to extracurricular activity participation intensity and whether there are threshold effects by including four interaction terms: (1) intensity \times female; (2) intensity² \times female; (3) intensity \times free/reduced lunch; and (4) intensity² \times free/reduced lunch. Linear regression models were used to estimate the bullying models, and logistic regression models were used to estimate the fighting models.

RESULTS

Descriptive Analyses

Table 1 provides the descriptive results by sex and family income. There were significant sex differences on all of the variables with females reporting significantly less bullying and fighting behaviors compared to males. Females also reported significantly more activity participation intensity, volunteer hours, and part-time work compared to males. Males reported significantly more club sports hours, more time in unstructured activities, and a greater proportion reported working full-time compared to females.

In terms of family income, there were no significant differences on bullying or time spent participating in club sports between those students who did and those who did not receive

free or reduced lunch. However, low-income students reported significantly more fighting and unstructured activity hours compared to other students. Furthermore, higher income students reported significantly more hours in extracurricular activities, more volunteering, and more part-time and full-time work compared to low-income students.

In both the bullying and fighting models, we found support for our hypotheses in that there was a significant and negative relationship between extracurricular activity participation intensity and the dependent variables. In addition, there was a threshold effect in the relationship between school-based extracurricular activity participation intensity and bullying and fighting ($t = 4.24$; $p < .001$ and $t = 2.76$; $p < .05$, respectively), lending support to our overscheduling hypothesis. Figure 1 illustrates this relationship for both outcomes: reports of bullying and fighting behavior are higher when school-based extracurricular activity participation intensity is low (0 hours), decrease when extracurricular activity participation intensity is moderate (1 to 4 hours per week), and increase slightly at higher participation hours (5 or more hours per week). In other words, there is not a linear, negative relationship between school-based extracurricular activity participation intensity as the hours increase from moderate (1 to 4 hours per week) to high levels (5 or more hour per week).

Multivariate Analyses

Table 2 presents the multivariate results for bullying. For the model without sex and income interaction terms, sex, age, race, school-based extracurricular activity participation intensity, the activity participation quadratic term, unstructured activity hours, and full-time employment were significantly related to student reports of bullying. Females reported less bullying perpetration, while older students, black, and other minority students reported more bullying perpetration. In addition, there was a significant positive relationship between time spent in unstructured activities and full-time employment and bullying perpetration. Finally, there was a significant negative relationship between school-based extracurricular activity participation intensity and bullying perpetration. The quadratic term was also significant in the multivariate model, providing evidence for the over-scheduling hypothesis (ie, bullying was highest among those reporting no participation, lowest among those reporting between 1 and 4 hours of participation per week, and increased slightly among those reporting 5 or more hours per week). Hispanic ethnicity, free/reduced lunch status, club sports participation, volunteer time, and employment status were not significantly related to adolescent reports of bullying perpetration.

In the fighting model, (presented in Table 3) all of the variables, except for volunteer status and part-time work, were significantly related to the log-odds of fighting. Specifically, females and younger adolescents were less likely to report getting into a physical fight. However, minority students and low-income students were more likely to report physical fighting. In particular, black, Hispanic, and other minority and low-income students were more likely to report physical fighting. School-based extracurricular activity participation intensity and club sports hours were significantly related to a lower log-odd of fighting behavior. In other words, fighting behavior was highest among those reporting no participation, and lowest among those reporting between 1 and 4 hours of activity participation per week. In addition, the quadratic term was significant in the multivariate

fight model, providing evidence for the overscheduling hypothesis. On the other hand, unstructured time and full-time employment were related to higher log-odds of physical fighting.

Our last research question explored whether sex or family income moderated the linear and u-shaped relationship between school-based extracurricular activity participation intensity and bullying and fighting. Family income did moderate the relationship between school-based extracurricular activity participation intensity and fighting behavior. The interaction between family income and the quadratic participation intensity term was also significant in the fighting model (Figure 2). The figure shows that the negative relationship between school-based extracurricular activity participation intensity and fighting is concentrated among low-income students.

DISCUSSION

Bullying and physical fighting among youth are significant public health concerns. The school environment, and in particular, school-based extracurricular activities may provide adolescents with opportunities to engage in prosocial behaviors with their peers under the supervision of adults. This may limit their opportunities to engage in bullying and fighting. Nevertheless, the overscheduling hypothesis states that there are limited hours in a day and that spending too much time in extracurricular activities may serve as a potential stressor. As a result, there may be diminishing returns to the potential benefits of participation when youth spend a high number of hours in those activities.

Our results indicate that there are benefits to participation in that there was a negative relationship between school-based extracurricular activity participation intensity and bullying perpetration and physical fighting.

There is also evidence of a threshold effect between school-based extracurricular activity participation intensity, and both bullying perpetration and physical fighting in that the benefits were the greatest at moderate participation intensity or 1 to 4 hours per week and level off or slightly increase in the case of bullying perpetration at high participation intensity or 5 or more hours per week. The slight increase in reports of bullying perpetration at high participation intensity may provide evidence that more than 5 hours of participation a week may act as a stressor. As a result, those adolescents may be channeling this stress into bullying behavior. More research is needed in order to understand how high participation hours translate into stress and opportunities for bullying.

Few studies have investigated the link between extracurricular activity participation intensity and bullying and fighting (see Linville & Huebner²⁴ and Reise et al⁹ for an exception) nor have they investigated whether there are threshold effects in participation on these outcomes. Similar to the current study, Randall and Bohnert¹⁷ also found threshold effects to extracurricular activity participation for depressive symptoms, loneliness, and perceptions of social competence. They found a similar threshold at 5 and 7 hours a week. The current study is one of the first to explore threshold effects for bullying perpetration and physical fighting.

Unlike Randall and Bohnert,¹⁷ we did not find sex differences in the relationship between extracurricular activity participation hours and bullying and fighting. We did find family income differences in the relationship between extracurricular activity participation intensity and physical fighting in that the negative relationship between activity participation intensity and physical fighting was mainly concentrated among low-income adolescents. This could be due to the fact that reports of physical fighting were more prevalent among low-income adolescents. The results might reflect a true effect of participation on fighting or it might reflect a regression to the mean among this subpopulation. Despite this, it is still unclear why school-based extracurricular activity participation intensity operates differently by family income in predicting physical fighting. One possibility is that activity participation intensity may protect low-income adolescents from risky peer and community contexts, where physical fighting is likely to occur. However, several studies using low-income/ high-risk samples found a positive relationship between sports participation intensity and fighting (see Gardner, Roth, & Brooks-Gunn;²⁵ Kraeger¹²). This may be due to the fact that certain sports involvement may either condone or encourage aggressive and violent behavior. We were unable to parse out different types of extracurricular activity participation into sports, academic, or arts activities in the current study, which may contribute to these findings. Future work might continue to explore if and how sports participation encourages aggression and physical fighting, particularly among low-income adolescents.

Comparatively, we did not find family income differences in the relationship between school-based extracurricular activity participation intensity and bullying perpetration. Unlike physical fighting, there were no between family income differences on adolescent reports of bullying perpetration. Despite the assertion that bullying occurs among adolescents from all backgrounds,²⁶ prior research has not extensively explored whether and how bullying perpetration varies by family income. In order to better understand bullying perpetration, future work might consider whether the nature of bullying as defined in CDC's uniform definition that describes the power imbalance and nature of the aggression is similar among adolescents from different family income backgrounds.² Nevertheless, we found that school-based extracurricular activity participation intensity does not operate differently by family income in predicting bullying behavior and that activity participation intensity is related to lower mean reports of bullying perpetration.

Limitations

The current study used cross-sectional data and, as a result, we cannot infer that a causal relationship exists between activity participation, bullying, and fighting. Future research that uses longitudinal, quasi-experimental, and experimental designs is necessary in order to understand whether the negative relationship between school-based extracurricular activity participation intensity and bullying and fighting is causal or if selection (ie, adolescents with certain characteristics that are related to better functioning are also selecting into extracurricular activity participation) explains this relationship.

A second limitation of the current study is that the DCYS is not a nationally representative sample and the data were collected in 2008. While the sample does include adolescents from diverse backgrounds, it is drawn from 1 county in the Midwest. The nature of school-based

extracurricular activity participation and its relationship to bullying and fighting behavior may differ in other regions of the United States. Furthermore, there may have been shifts in the availability of extracurricular activities since 2008. While they have historically been a part of the school experience for youth, recent research on their benefits might have had an influence on who participates since the DCYS was collected. Hence, our results need to be replicated with other samples, including nationally representative ones and ones that capture more recent experiences with extracurricular activity participation.

A third limitation is our measure of physical fighting, which is a dichotomous variable that captures those who report being involved in a physical fight in the past 30 days. We opted to dichotomize the measure of physical fighting due to the relatively low number of adolescents who report more than one physical fight in the prior 30 days. Thus, it represents a measure in which a potentially wide range of students were classified in the “fighting” group in that someone who rarely has fights but had one in the past month and someone who regularly is involved in fights were both included in our measure of fighting. Future research might use measures of physical fighting that better distinguishes between rare and frequent fighters. Measuring physical fighting over a wider timeframe may help in differentiating between the 2 groups.

Future research may explore threshold effects by certain types of school-based extracurricular activities. For example, prior research has found that sports participation is related to higher rates of physical fighting, particularly among boys.²⁴ Even though we found that school-based extracurricular activity participation intensity was negatively related to physical fighting, it would be useful to explore whether and under what conditions sports participation may promote physical fighting. In addition, bullying perpetration may occur while adolescents are participating in school-based extracurricular activities. In order to characterize these experiences, future research might fully characterize individuals that participate in these activities, how adults supervise and either discourage or encourage bullying and fighting, and how the dynamics that occur in this extracurricular activity context spillover into contexts outside of those activities. In the same vein, it would also be useful to explore how other contexts serve to support and reinforce any prosocial processes (or vice versa) associated with school-based extracurricular activity participation, including a more comprehensive characterization of extracurricular activity contexts outside of school (eg, 4-H, church activities, etc) and other time commitments that adolescents have like providing afterschool childcare for working parents.

Conclusions

In summary, our findings highlight that there are benefits to school-based extracurricular activity participation intensity for both bullying perpetration and physical fighting that are the greatest at moderate participation hours or 1 to 4 hours per week and level off at high participation hours or 5 or more hours per week. The negative relationship between school-based extracurricular activity participation intensity and physical fighting was concentrated among low-income adolescents. These findings have implications for efforts aimed to prevent bullying and fighting. Our results also point to directions for future research in order

to understand whether and how school-based extracurricular activity participation benefits adolescent functioning.

IMPLICATIONS FOR SCHOOL HEALTH

Our results suggest that there are benefits to extracurricular activity participation at a moderate number of hours per week and that moderate school-based extracurricular activity participation may provide a positive, supportive context that could be a promising cross-cutting prevention strategy for bullying and fighting. This has important implications for schools in their efforts to address bullying and physical fighting among their students:

- Schools can look to extracurricular activity involvement as a positive, prosocial activity that can complement other school violence prevention efforts. This is especially important in schools that serve a large number of students from low-income households in light of the benefits of extracurricular activity participation on physical fighting.
- However, school staff could promote a moderate amount of participation (ie, 1 to 4 hours) recognizing that a high number of hours might detract from homework, time with family, and other activities that are also important for adolescent wellbeing.
- Some extracurricular activity contexts might provide opportunities for bullying and physical fighting. School staff that supervise these activities could be trained to bring interpersonal conflicts to a healthy resolution.
- Furthermore, evidence-based, universal school-based programs can be implemented to encourage student positive behaviors and conflict resolution skills. Programs such as the Good Behavior Game and Life Skills Training have evidence for reducing youth violence perpetration and risk factors for perpetration in rigorous evaluations.²⁷

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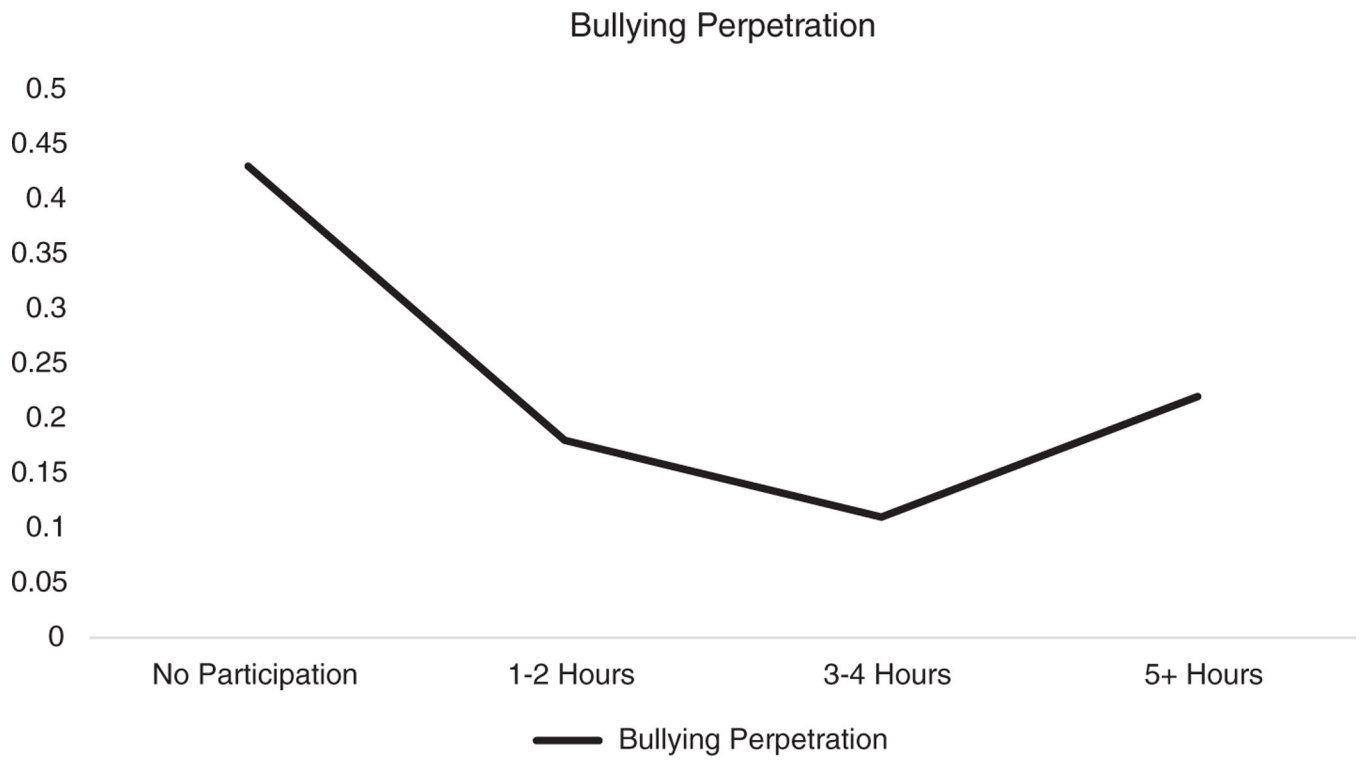


Figure 1. Threshold Effects in the Relationship Between School-Based Extracurricular Activity Participation Intensity and Bullying and Fighting Behavior

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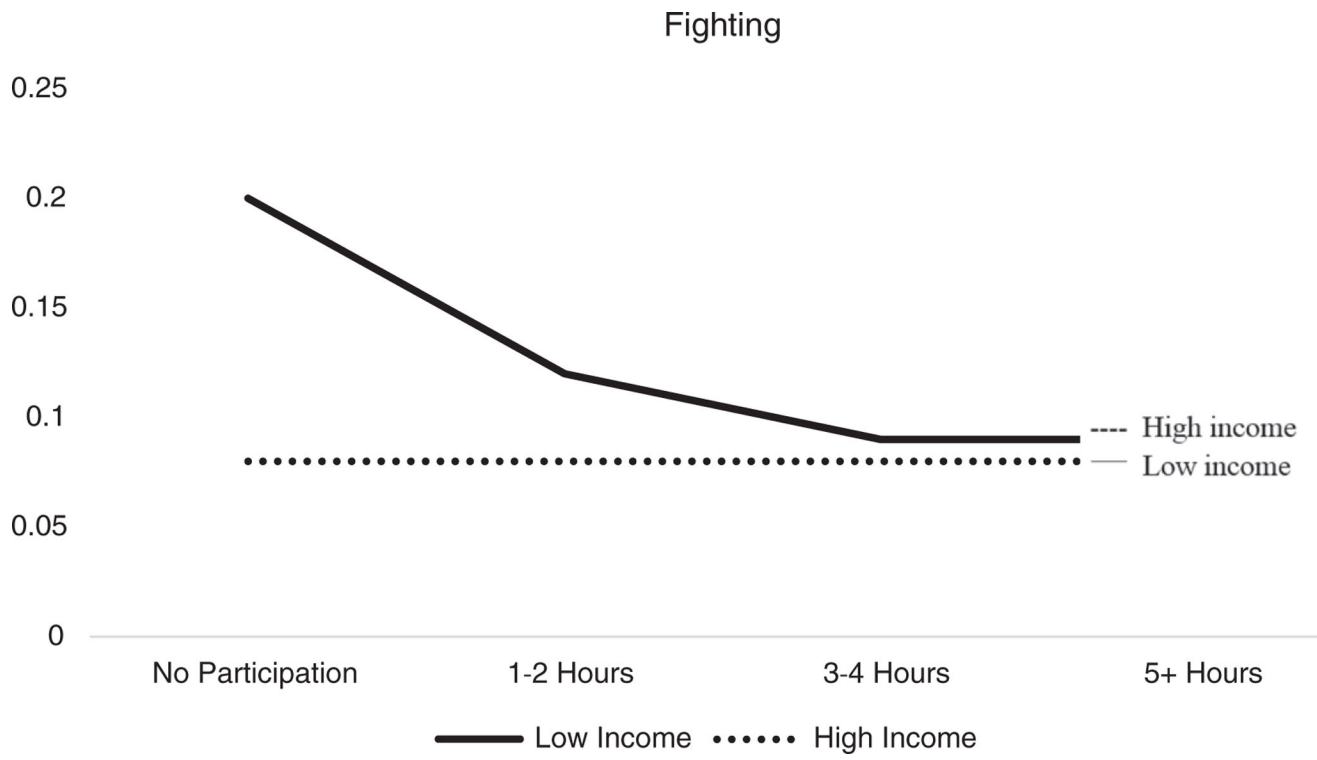


Figure 2. School-Based Extracurricular Activity Participation Intensity and Fighting: Significant Free Lunch/EA Hours Interaction Term

Table 1. Proportions, Means, and SDs for Male, Female, Low, and High Family Income Students

| Variables | Sex | | Free/Reduced Lunch | |
|------------------------------------|---------------------------------|-----------------------------------|-------------------------------|------------------------------|
| | Males (N = 5868) % or mean (SD) | Females (N = 6634) % or mean (SD) | Yes (N = 3607) % or mean (SD) | No (N = 8895) % or mean (SD) |
| Bullying | 0.32 (0.52) | 0.24 (0.36)*** | 0.28 (0.45) | 0.27 (0.44) |
| Fighting (%) | 14 | 6*** | 14 | 8*** |
| Extracurricular activity intensity | 0.99 (1.11) | 1.31 (1.11)*** | 1.05 (1.10) | 1.21 (1.12)*** |
| Club sports hours | 0.65 (1.17) | 0.29 (0.83)*** | 0.47 (1.01) | 0.46 (1.02) |
| Unstructured activity hours | 1.47 (0.69) | 1.31 (0.60)*** | 1.46 (0.70) | 1.36 (0.63)*** |
| Volunteer (%) | 6 | 9*** | 6 | 9*** |
| Part-time work (%) | 21 | 24* | 17 | 25*** |
| Full-time work (%) | 4 | 3*** | 3 | 4*** |

* p < .05.

** p < .01.

*** p < .001.

Means and SDs from the bullying subsample (N = 12,502), the fighting subsample (N = 12,403).

Means and SDs mirror the bullying results.

Table 2.

Bullying Models

| Variables | Bullying Model | | Bullying Model With Interactions | |
|--|-----------------|-------------------------|----------------------------------|-------------------------|
| | Beta (SE) | 95% Confidence Interval | Beta (SE) | 95% Confidence Interval |
| Female | -0.07 (0.01)*** | -0.08 to -0.05 | -0.07 (0.01)*** | -0.08 to -0.05 |
| Age | 0.009 (0.003)* | 0.003 to 0.014 | 0.009 (0.003)* | 0.003 to 0.014 |
| Black | 0.12 (0.02)*** | 0.08 to 0.16 | 0.12 (0.02)*** | 0.08 to 0.16 |
| Hispanic | -0.02 (0.03) | -0.07 to 0.02 | -0.03 (0.03) | -0.07 to 0.02 |
| Other | 0.05 (0.01)*** | 0.03 to 0.07 | 0.05 (0.01)*** | 0.03 to 0.07 |
| Free/Reduced lunch | -0.01 (0.01) | -0.030 to 0.006 | -0.01 (0.01) | -0.030 to 0.006 |
| EA intensity | -0.06 (0.01)*** | -0.08 to -0.03 | -0.06 (0.01)*** | -0.08 to -0.03 |
| EA intensity ² | 0.02 (0.004)*** | 0.009 to 0.03 | 0.02 (0.004)*** | 0.009 to 0.03 |
| Club sports hours | -0.005 (0.005) | -0.01 to 0.005 | -0.005 (0.005) | -0.01 to 0.005 |
| Unstructured activities hours | 0.08 (0.01)*** | 0.07 to 0.09 | 0.08 (0.01)*** | 0.07 to 0.09 |
| Volunteer | -0.01 (0.01) | -0.03 to 0.02 | -0.01 (0.01) | -0.03 to 0.02 |
| Part-time work | 0.01 (0.01) | -0.01 to 0.03 | 0.01 (0.01) | -0.01 to 0.03 |
| Full-time work | 0.05 (0.02)* | 0.004 to 0.09 | 0.05 (0.02)* | 0.002 to 0.09 |
| EA intensity × female | - | - | 0.04 (0.02) | -0.01 to 0.08 |
| EA intensity ² × female | - | - | -0.01 (0.01) | -0.03 to 0.003 |
| EA intensity × free/reduced lunch | - | - | 0.03 (0.02) | -0.02 to 0.09 |
| EA intensity ² × free/reduced lunch | - | - | -0.005 (0.01) | -0.02 to 0.01 |
| Intercept | 0.09 (0.06) | | 0.09 (0.06) | |

* p < .05.

** p < .01.

*** p < .001.

EA intensity, school-based extracurricular activity participation; EA intensity², quadratic school-based extracurricular activity participation; SE, standard error.

Table 3.

Fighting Models

| Variables | Fighting Model | | Fighting Model With Interactions | |
|--|-----------------|-------------------------|----------------------------------|-------------------------|
| | Odds Ratio (SE) | 95% Confidence Interval | Odds Ratio (SE) | 95% Confidence Interval |
| Female | -0.94 (0.07)*** | -1.07 to -0.81 | -0.94 (0.07)*** | -1.07 to -0.81 |
| Age | -0.11 (0.02)*** | -0.15 to -0.07 | -0.11 (0.02)*** | -0.15 to -0.07 |
| Black | 1.12 (0.12)*** | 0.89 to 1.36 | 1.12 (0.12)*** | 0.89 to 1.36 |
| Hispanic | 0.44 (0.15)** | 0.14 to 0.74 | 0.44 (0.15)** | 0.14 to 0.74 |
| Other | 0.38 (0.09)*** | 0.20 to 0.56 | 0.38 (0.09)*** | 0.20 to 0.56 |
| Free/reduced lunch | 0.28 (0.07)*** | 0.15 to 0.42 | 0.32(0.07)*** | 0.18 to 0.45 |
| EA intensity | -0.61 (0.11)*** | -0.82 to -0.40 | -0.64 (0.11)*** | -0.86 to -0.41 |
| EA intensity ² | 0.15 (0.04)*** | 0.08 to 0.22 | 0.15 (0.04)** | 0.08 to 0.23 |
| Club sports hours | 0.08 (0.03)** | -0.15 to -0.02 | 0.08 (0.03)** | -0.15 to -0.02 |
| Unstructured activities hours | 0.22 (0.04)*** | 0.13 to 0.31 | 0.22 (0.04)*** | 0.13 to 0.31 |
| Volunteer | 0.03 (0.12) | -0.21 to 0.28 | 0.03 (0.12) | -0.21 to 0.28 |
| Part-time work | 0.15 (0.09) | -0.02 to 0.32 | 0.15 (0.09) | -0.02 to 0.32 |
| Full-time work | 0.41 (0.16)* | 0.09 to 0.73 | 0.40 (0.16)* | 0.08 to 0.72 |
| EA intensity × female | - | - | 0.24 (0.20) | -0.16 to 0.63 |
| EA intensity ² × female | - | - | -0.11 (0.07) | -0.24 to 0.03 |
| EA intensity × free/reduced lunch | - | - | 0.60 (0.20)** | 0.21 to 0.99 |
| EA intensity ² × Free/reduced lunch | - | - | -0.19 (0.07)** | -0.32 to -0.05 |
| Intercept | -0.40 (0.34) | | -0.39 (0.34) | |

*
p < .05.**
p < .01.***
p < .00.

EA intensity, school-based extracurricular activity participation; EA intensity², quadratic school-based extracurricular activity participation; SE, standard error.