

An institutional examination of U.S. adults' willingness to allow teenage boys to play tackle football

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Abstract

Background: Despite the well-documented mental, physical, and emotional benefits of youth sports and physical activity, participation continues to fall below recommended public health guidelines in the United States (U.S.). This complex public health challenge continues to worsen, with disparities between segments of the population, yet little is known about the institutional factors associated with sport participation. To address this knowledge gap, institutional theory was used as a guiding framework to test the association of societal-level factors such as state high school football participation rates and state concussion law comprehensiveness on adults' willingness to allow teenage boys to play American tackle football, over and above individual-level demographic and football-specific factors. **Methods:** This was a cross-sectional comparative data analysis with data obtained from an internet-based survey of a nationally representative sample of U.S. adults aged 18 to 93 years (N=1,018). The dependent variable was willingness of U.S. adults to let teenage boys play tackle football. Comprehensiveness of state concussion legislation, high school football participation rates for each state, and sex, age, education, race/ethnicity, and household income were included in the analysis. We used multilevel (hierarchical) linear regression to examine the influence of institutional pressures, over and above the individual-level factors, on adults' willingness to allow teenagers to play tackle football, while accounting for state-level clustering effects. **Results:** Our analyses revealed that state high school football participation rate was significantly associated with adults' willingness to allow tackle football participation (β Est = 2.46; SE = 0.99; p = 0.013), over and above multiple individual-level factors. There was no effect of state concussion legislation comprehensiveness (Est = -.002; SE = .009; p = .79). **Conclusions:** Results indicate that initiatives and interventions aimed to increase tackle football participation may be more effective in states with stronger normative support for high school football participation, rather than as a broad national public health initiative.

Key words: public health, sport management, health policy, sport participation

Introduction

Lack of sport and physical activity participation continues to be a complex public health challenge for youth in the United States. According to the Youth Risk Behavior Surveillance System, only 26% of high school students participated in at least 60 minutes of physical activity during the week prior to the survey, and 46% did not play on any sports teams (Centers for Disease Control and Prevention [CDC], 2019). This public health issue is concerning because sport and physical activity provide potentially valuable developmental opportunities for kids to experience mental, physical, social, and emotional benefits (Logan et al., 2019). While many different sports provide the prospect of being used to increase physical activity levels among adolescents, high school tackle football, despite being driven primarily by male participation, has the potential to be particularly impactful due to its popularity, accessibility (*i.e.*, both rural and urban), large team sizes (*i.e.*, 50 or more athletes per team in many instances), and body type-inclusivity with positions tailored to nearly all body shapes, sizes, and athletic abilities (National Federation of State High School Associations [NFHS], 2020; Neihoff, 2020).

In spite of the sport's popularity, high school tackle football has seen declines in participation in nine out of ten years between 2010-2019 (National Federation of State High School Associations, 2020). These declines coincide with the significant strides that have been made in concussive and subconcussive brain injury research as well as increases in regulatory changes and societal awareness (Broglia et al., 2012; Hutchison et al., 2018; Lu & Heinze, 2019; Macy, 2021). To combat these declines and help to keep youth safe, states have enacted concussion legislation, and sport governing bodies have implemented significant game rule changes, practice guideline recommendations, equipment innovations, and overall strategic policy initiatives targeting a reduction in head impacts (Kercher et al., 2020; Kerr et al., 2015; Kim et al., 2017; Macy, 2021; Wiebe et al., 2018). While it is possible that legislation and safety policies may be helpful for increasing youth sport

participation, the current body of tackle football literature remains largely unclear as to how and to what extent those safety measures are influencing youth participatory outcomes (Macy, 2021).

Previous research has explored individuals' willingness to allow kids to play football, but those studies used convenience samples of college students, respondents from only one state, qualitative interviews of small samples (e.g., N=12, 24), or a non-representative survey sample (Boneau et al., 2020; Fedor & Gunstad, 2016; Ferraro et al., 2019; McGlynn et al., 2020; Murphy et al., 2017). The studies of college students found a high percentage of college student respondents would be willing to allow their children to play tackle football despite the concussion risk (Fedor & Gunstad, 2016: 92.6%; Ferraro et al., 2019: 78.8%). In qualitative studies of parents, there was a recurring theme of conflict between the risks and benefits associated with playing football (Boneau et al., 2020; McGlynn et al., 2020). While these studies contributed to our understanding of the decision to allow children to play football, several important limitations remain.

First, since youth sport participatory outcomes differ widely across demographic groups (The Aspen Institute, 2019; Zarrett et al., 2018), it is possible that college students from only one state and small samples of parents would have significantly different attitudes compared to different segments of the population. Secondly, youth sport participation, like other health-related behaviors, is shaped by a complex network of influences (Glanz et al., 2015). It is possible that large-scale institutional influences such as state concussion legislation and participation rates may play a role in shaping individuals' attitudes. Yet, to our knowledge, these factors have not been examined in high school football. Chrisman et al. (2019) explored a related topic, support for tackling restrictions in youth football and found that the majority of parents would support age restrictions for tackling. While public support of rule changes is an important empirical contribution to youth sport participatory literature, little is known about the more impactful decision of whether to allow teenagers to participate in football.

The present study examined the following research question: After controlling for individual-level influences, to what extent are state-level institutional pressures associated with adults' willingness to allow teenagers to play high school tackle football? By controlling for individual-level factors (i.e., demographics, parent status, football fandom) and focusing on institutional differences between states, this work extends scholarship on youth sport participation, concentrating on sport policy changes and public support (Chrisman et al., 2019; Fedor & Gunstad, 2016; Ferraro et al., 2019; Kercher et al., 2020; Kerr et al., 2015; Kim et al., 2017; Lu & Heinze, 2019; Macy, 2021; Wiebe et al., 2018), while adding new knowledge on relevant institutional factors. Multiple gaps in the literature about decision making for allowing tackle football participation were addressed, including (1) the lack of a nationally representative sample and (2) the limited understanding of the institutional influences associated with those decisions. For the regulative institutional factor, we hypothesized that respondents who live in states with more comprehensive concussion legislation would have greater willingness to allow teenagers to participate in tackle football.

This hypothesis was based on the intent of concussion legislation being to make the game safer, which would theoretically make respondents more willing to allow kids to play. For the normative institutional factor, we hypothesized that respondents living in states with higher football participation rates would be more willing to allow teenagers to play tackle football. This hypothesis was based on a review of normative forces in youth sports that found that social influences such as friendship and parent facilitated participation to be significant predictors of sport participation (Howie et al., 2020). These findings combined with the social obligation, shame/honor, appropriateness, and morally governed nature of the normative institutional pillar (Scott, 2001) led us to hypothesize that high school football participation rates would represent a legitimate institutional force.

Theoretical Framework

To strengthen the research approach, this study was guided by institutional theory's three pillars framework conceived by Scott (1995). The three pillars framework provides a valuable empirical lens to explore research questions targeting institutional influences on a wide range of outcomes for both individuals and organizations (Bruton et al., 2010). The framework differentiates between three foundational elements—regulative, normative, and cultural cognitive—that maintain institutions (Scott, 2014) and have been employed in fields ranging from behavior and economics to public health policy and sport management (Agyemang et al., 2018; DiMaggio & Powell, 1983; Lu & Heinze, 2019; Nite et al., 2019; Scott, 2010; Washington & Patterson, 2011). The regulative pillar identifies the ability of rules, laws, and sanctions to influence behavior; the normative pillar highlights how values and norms designate appropriate ways to act; and the cultural cognitive pillar emphasizes the importance of words, internal beliefs, and shared understanding (Scott, 2014).

Theorists emphasize the importance of the three pillars to varying extents (Scott, 2010), but in our study we operationalized the regulative and normative institutional pillars to examine which factors are associated with adults' willingness to allow teenagers to participate in football. Our selection of these two pillars was based on the regulative authority state legislatures have over youth sport safety (e.g., concussion legislation) and the normative forces that been shown to be associated with youth sport program participation (Howie et al., 2020).

Methods

Sample

This was a cross-sectional comparative data analysis with data obtained from an internet-based survey of a nationally representative sample of U.S. adults aged 18 to 93 years (N=1,018). A general population weight was provided by Ipsos and calculated based on the latest Current Population Survey (CPS) with variables such as gender, race/ethnicity, age, education, census region, and household income. The weighting was applied to the data to minimize bias and variance due to non-sampling error. We excluded respondents with missing data (n=16), which reduced the sample size to 1,002. Respondents were members of Ipsos KnowledgePanel, which is a large probability-based online panel in the U.S., with approximately 60,000 members. KnowledgePanel members agree to routinely receive email invitations from Ipsos to complete surveys. If they agree to participate, they are routed to the survey home page where they answer questions on a range of topics including the items used for the current study.

The KnowledgePanel sample was developed on a foundation of address-based sampling with a statistically valid representation of the U.S. population as well as many under-researched and often harder-to-reach populations (Ipsos, 2020). Ipsos (2020) addresses self-selection bias by choosing respondents through the Delivery Sequence File of the United States Postal Service, which is a single sampling frame covering everybody in the U.S. with a postal address. Importantly, a random sample of households are sent a mail invitation to join the panel; people cannot simply volunteer. Households in the sample without internet connection were provided with a web-enabled device and free internet service. This study was deemed to be exempt from full Institutional Review Board approval because the research was no more than minimal risk to participants.

Measures

Dependent variable

The dependent variable was willingness of U.S. adults to let teenage boys play tackle football. To assess this construct, participants responded to the statement, “*As a parent of a teenage boy,¹ or if I was a parent of a teenage boy, I would let him play tackle football if he wanted to.*” using a 5-point Likert scale ranging from strongly disagree to strongly agree.

State-level independent variables

Despite the similar intent of concussion legislation across states, the comprehensiveness of the laws differ greatly (Concannon, 2016). Concannon (2016) dissected the variability of concussion legislation from state to state and found substantial differences in content of the required education, required stakeholders to be educated, type of health care providers that can provide clearance to return to play, and what training is required for evaluation and management of concussion. To operationalize this comprehensiveness of concussion legislation, representing the regulative institutional pillar, we utilized state concussion law features identified by Kim et al. (2017) to create a continuous variable. These data were collected from LEXIS/NEXIS and West Law legislative databases (Kim et al. 2017) and allowed for the development of a cumulative score for each state representing their state’s overall comprehensiveness (*i.e.*, each state’s number of legislative categories that were met). Each of the 32 characteristics was assigned a 0 or 1 for each state, which led to a cumulative score with a range of 0 to 32. The mean score was 13.06 (SD=3.96; Range: 5-23).

To operationalize the normative institutional pillar as an independent variable, we utilized high school football participation rates for each state. The rates were created from each state’s 2018-2019 high school football participation total collected by the National Federation of State High School Associations (2020) as the numerator, and 2019 state-, age-, and sex- specific data for 14-18 year old boys from the United States Census Bureau (2019) as the denominator. The mean participation rate across all states was 0.09 (or 9%) (SD=0.04; Range: 0.05-0.22).

Individual-level independent variables

Sex, age, education, race/ethnicity, and household income were included as demographic covariates. We included a dichotomous variable for parents and non-parents to control parental status. We also controlled for football fandom by using the following item: “*To what extent do you agree with the following statement: I consider myself a football fan.*” which used a 5-point Likert scale ranging from *strongly disagree* to *strongly agree*.

Data Analysis

We used multilevel (hierarchical) linear regression to examine the influence of institutional pressures, over and above the individual-level factors, on adults’ willingness to allow teenagers to play tackle football, while accounting for state-level clustering effects. We accounted for the clustering of respondents within states to avoid inappropriate estimates of standard errors for the model parameters and thus p-values that were smaller than accurate (Hox et al., 2010). A series of sequential models were performed following Hox’s recommendation for multilevel modeling (Hox et al., 2010). The random-intercept model (Model 1) examined the extent to which the respondents’ state explained variation in residents’ willingness to allow football participation. Model 2 evaluated whether individual-level fixed effects (*e.g.*, sex, age, education, parent status) were associated with willingness across states. Finally, we assessed whether the addition of the two institutional factors significantly

improved model fit (Model 3) compared to the previous models. Analyses were performed in R 4.0.3 using the lme4 package, and the level of statistical significance was set to $p < 0.05$.

Results

Demographics and willingness to allow high school football participation

Table 1 shows the descriptive statistics for the nationally representative weighted sample of U.S. adults (N = 1,002). Our sample was normally distributed across the outcome variable (*i.e.*, willingness to allow teenagers to participate in high school football) ($M = 3.01$, $SD = 1.14$). Respondents were evenly split between male and female (51.7% female) with a mean age of 48 years old. Over half of the sample had at least some college education (61.5%), 68.6% reported a household income over \$50,000, 63.6% of respondents identified as “white, non-Hispanic,” and 39.6% were parents of at least one child.

Table 1. Weighted sample characteristics

	No. (%) or Mean ± SD
Sex	
Male	483.5 (48.3)
Female	515.9 (51.7)
Age	48.0 (±17.8)
Education	
≤ High School	384.8 (38.5)
≥ College	613.9 (61.5)
Race/Ethnicity	
White, non-Hispanic	634.8 (63.6)
Black, non-Hispanic	116.5 (11.7)
Other, non-Hispanic	86.6 (8.7)
Hispanic	160.8 (16.1)
Household Income	
\$0 to \$24,999	131.0 (13.1)
\$25,000 to \$49,999	182.0 (18.2)
\$50,000 to \$99,999	298.8 (29.9)
\$100,000+	386.9 (38.7)
Parent	
Yes	439.3 (44.0)
No	559.4 (56.0)
Region	
Northeast	178.1 (17.8)
Midwest	209.6 (21.0)
South	375.9 (37.6)
West	235.0 (23.5)
Football Fan	2.9 (±1.4)
Comprehensiveness of state concussion legislation	13.1 (±3.9)
High school football state participation rates	0.09 (±0.04)
Willingness to allow teenage child to play football	3.0 (±1.1)

State-level independent variable scores

Table 2 illustrates each state’s score for the two state-level independent variables (*i.e.*, state concussion legislation comprehensiveness and state high school football participation rate). The state with the most comprehensive legislation was Louisiana, and the state with the least was Oregon. For high school football participation rate, the highest rate was found in Mississippi, and the lowest was New York.

Table 2. Concussion legislation comprehensiveness and high school football participation rate by state

State	Comp	Rate	State	Comp	Rate
AL	9	0.205	MT	15	0.107
AK	12	0.066	NE	11	0.128
AZ	18	0.069	NV	9	0.069
AR	17	0.101	NH	21	0.076
CA	10	0.071	NJ	15	0.078
CO	13	0.084	NM	7	0.087
CT	12	0.076	NY	8	0.047
DE	10	0.095	NC	9	0.079
DC	9	0.101	ND	10	0.126
FL	11	0.066	OH	19	0.104
GA	17	0.088	OK	11	0.098
HI	13	0.108	OR	5	0.088
ID	14	0.099	PA	20	0.064
IL	8	0.092	RI	13	0.082

IN	16	0.088	SC	18	0.113
IA	15	0.152	SD	11	0.107
KS	11	0.124	TN	18	0.096
KY	13	0.090	TX	12	0.158
LA	23	0.130	UT	14	0.065
ME	8	0.082	VT	13	0.053
MD	14	0.063	VA	15	0.084
MA	11	0.085	WA	14	0.080
MI	13	0.104	WV	13	0.103
MN	20	0.125	WI	18	0.122
MS	11	0.220	WY	6	0.128
MO	8	0.102			

Note: Comp = State concussion legislation comprehensiveness. Rate = State high school football participation rate

Multilevel analysis including institutional predictors

Table 3 presents the results of the multilevel linear regression of U.S. adults’ willingness to allow teenagers to participate in tackle football. The multi-level model that included only individual-level variables (i.e., Model 2) produced a significantly better fit than the null model ($\chi^2(9)= 114.41, p < .001$). Additionally, the multilevel model with the two added primary predictor variables (i.e., Model 3) produced a significantly better fit to the data than model 2 ($\chi^2(2)= 6.20, p = .045$).

Significant contributions were made by individual-level predictors within the final model (Model 3). Males (Est = .19, SE = .07, $p = .013$) and those who reported being a bigger football fan (Est = .22, SE = .02, $p < .001$) were more willing to allow teenagers to play high school tackle football. Having at least some college experience (Est = -.21, SE = .08, $p = .006$) and identifying as Hispanic (Est = -.25, SE = .10, $p = .011$) were associated with less willingness to support teenagers’ football participation. Age, household income, and being a parent did not significantly predict willingness to allow a teenage son to participate in football in the final model.

As hypothesized, residents residing in states with higher levels of high school football participation were significantly more likely to allow teenagers to play football (Est= 2.46; SE = .99; $p = .013$), when all other variables remained constant. However, there was no effect of state concussion legislation comprehensiveness (Est = -.002; SE = .009; $p = .79$).

Table 3. Weighted results of final multilevel regression model

Variable	Model 1		Model 2		Model 3	
	β Est (SE)	p value	β Est (SE)	p value	β Est (SE)	p value
<i>Individual-level fixed effects</i>						
Intercept (constant)	3.01 (0.04)	<0.001	2.60 (0.15)	<0.001	2.38 (0.21)	<0.001*
Sex						
Male			0.18 (0.07)	0.012*	0.19 (0.07)	0.013*
Female			Reference	-	Reference	-
Age			-0.003 (0.002)	0.122	-0.003 (0.002)	0.170
Education						
≤ Graduated high school			Reference	-	Reference	-
≥ Attended college			-0.20 (0.08)	0.008*	-0.21 (0.08)	0.006*
Race/Ethnicity						
White, non-Hispanic			Reference	-	Reference	-
Black, non-Hispanic			0.05 (0.11)	0.653	0.05 (0.11)	0.649
Hispanic			-0.25 (0.10)	0.011*	-0.25 (0.10)	0.011*
2+ races or other, non-Hispanic			-0.18 (0.13)	0.155	-0.16 (0.13)	0.211
Household income			0.01 (0.07)	0.872	0.04 (0.07)	0.631
Football fan			0.22 (0.02)	<0.001*	0.22 (0.02)	<0.001*
Parent			0.02 (0.08)	0.776	0.02 (0.08)	0.784
<i>State-level fixed effects</i>						
State concussion legislation comprehensiveness					-0.002 (0.009)	0.789
State high school football participation rate					2.46 (0.99)	0.013*
<i>Random effect</i>						
State residual variance (SD)	1.31 (1.14)		1.17 (1.09)		1.17 (1.08)	
Model testing*						
χ^2 (df)			114.41 (9)		6.20 (2)	
P Value			< 0.001*		0.045*	

Note: Dependent variable: willingness to allow high school football participation; SE = standard error. Each model was compared to the immediate previous model. * $p < .05$.

Discussion

Youth physical activity and sport participation continue to be below recommended guidelines from leading public health organizations (CDC, 2019; U.S. Department of Health and Human Services, 2019), with tackle football participation declining in nine out of ten years between 2010-2019 (NFHS, 2020). Despite these declines, nationally representative investigations of the individual and institutional factors involved in decision making to allow tackle football participation remain limited. To investigate how these forces might interplay to influence this public health challenge, we examined state-level institutional factors' relationship with adults' willingness to allow teenage boys to play tackle football over and above the contribution of individual-level demographic and football-specific factors. There were three key findings from this study. First, from a demographic standpoint, being male was associated with increased support of teenagers participating in high school football, while higher educational attainment and identifying as Hispanic were negatively associated with allowing high school students to play football. Second, in line with institutional theory, state high school football participation rates were significantly associated with willingness to allow teenagers to play football. Third, concussion legislation comprehensiveness, on the other hand, was not significantly associated with willingness to allow football participation. This study extended previous research (Boneau et al., 2020; McGlynn et al., 2020; Murphy et al., 2017) by utilizing a nationally representative sample and quantitative analysis, as well as extending the scholarship of institutional theory to high school football.

Previous research has shown that females and individuals who attended college were more likely to support age restrictions for tackling in football (Chrisman et al., 2019). This study extends that finding in that, compared to males and those who had not attended college, females and those with higher levels of education were also less willing to allow teenage boys to participate in tackle football. This is in line with previous research which has found that females tend to be more risk averse than males (Chrisman et al., 2019; Halek & Eisenhauer, 2001; Warshawsky-Livne et al., 2014). Additionally, as prior research speculated, college educated individuals were more likely to allow their teenage boys to play tackle football and this may be due to their greater understanding or awareness of the injury risk involved in sport participation (Chrisman et al., 2019). Divergent from prior football-related literature (Chrisman et al., 2019), we found that those who identified as Hispanic were less likely to support teenagers' football participation. Although this finding is not consistent with past research on support for football tackling restrictions, it is consistent with risk aversion literature which has found non-white respondents to be more risk averse (Chrisman et al., 2019; Halek & Eisenhauer, 2001). Extending recommendations from Murphy et al. (2017) for educational interventions focused on the benefits of tackle football participation and factual risk information, the data from the present study indicate that sport governing bodies aiming to increase football participation may be well served to utilize a wide variety of communication strategies tailored to different segments of the population.

This study has built upon the work of sport management researchers who have begun to utilize an institutional perspective when examining safety legislation in youth sports, in what has been a predominantly biomedically focused field (Lu & Heinze, 2019; Lu & Heinze, 2020). Prior research with an institutional lens has found mixed results on the relevance of state norms (*i.e.*, state policy innovativeness and youth sport safety policy adoption) in predicting concussion legislation adoption (Lu & Heinze, 2019). Whereas, a study of adult intention to allow youth football participation using non-generalizable sample found subjective social norms to be an important predictor of intention to allow youth football participation (Murphy et al., 2017). In our sample and in alignment with past research emphasizing the importance of social factors in both initiation and maintenance of youth sport participation (Howie et al., 2020), respondents who lived in states with higher football participation rates were more likely to support football participation. This result points to the potential importance of social and normative characteristics of communities such as friendships and parent facilitated participation when attempting to capitalize on the benefits of high school sports (Howie et al., 2020). The data also suggests that state-level normative institutional factors may be a promising area of exploration for researchers investigating institutional approaches such as youth sport intervention design and targeted youth sport policy making. While the normative institutional pressure shows promise, it must be interpreted with caution in that there may be a case of reverse causality with willingness influencing participation rates.

Another important finding from this study was that state concussion legislation comprehensiveness (*i.e.*, the regulative institutional factor) was not associated with willingness to allow football participation. This is not to say that this institutional pillar is not important. Rather, it is possible that a missing piece in this investigation was familiarity or knowledge of the specific concussion legislation in each state. Connecting the gap between policy implementation and individual behavior change (*i.e.*, willingness to allow children to play football) may require a significant amount of investigation into the institutional work involved in that process. Past research found that political pressure, another state-level institutional variable, predicted concussion legislation adoption (Lu & Heinze, 2019). There may have been a clearer relationship between those two variables because they were both state-level political variables, whereas our study attempted to link state-level factors with an individual-level outcome variable. In our case, there is more work to be done in understanding the institutional efforts and institutional entrepreneurship involved between policy adoption and sport participatory outcomes (*i.e.*, steps leading to institutional change in high school sports).

Conclusion

These results have important implications for sport management researchers and state-level policymakers interested in improving youth public health outcomes. As youth sports have become a national initiative (Exec. Order 13824, 2018), states naturally become the next trickle down institutions to begin implementing strategies and action plans uniquely tailored to their respective states' needs and unique populations. For example, recognizing and quantifying that some states have stronger normative support for high school football participation may mean that football presents a more effective and appealing youth public health initiative in those states. Conversely, states that have stronger normative pressure supporting other sports (e.g., soccer, hockey) may be better served by enacting policy supporting participation in those sports. Our study also points to the need to investigate the gap between sport safety policy implementation and willingness to participate. As researchers and policymakers gain a better understanding of the intermediary mechanisms involved, they may be better able to effectively educate the public on accurate risks and benefits associated with youth sport participation. This is particularly true for football, which has received considerable media attention related to the risks of concussion.

Future studies in youth sport might aim to explore other measures of regulative, normative, and cultural-cognitive institutional influence such as attributes of communities (e.g., schools, school districts, states, nations) or linkages between policy and participation outcomes (i.e., institutional work). Such investigations may allow for insights that would not have otherwise been found if examination had only been done at the individual level. Characteristics such as inequality of opportunity, generally accepted community values, and community norms may yield important institutional implications for the institutional analysis of youth sports. Additionally, multilevel modelling has a unique ability to account for the nested data structure that is often the reality in practical research environments, such as those presented by youth sports. Nesting variables such as states, schools, or teams may help account for important insights into the relationships between institutional factors and sport outcomes.

Future research should also aim to explore the role prior knowledge and attitudes play in youth sport participatory outcomes to address the gap between policy mechanisms and safety outcomes (Hasle et al., 2014). Hasle et al. (2014), who studied the transfer of knowledge from policy to practice, suggested a multifaceted approach combining various policy types, programs, and mechanisms to effectively improve outcomes. Just because a policy exists (e.g., concussion legislation) does not inherently mean stakeholders are aware of it or are acting on it. Therefore, additional investigation of knowledge, attitudes, or other psychosocial characteristics may be warranted.

There are several limitations to this study. First, external validity is threatened by cross-sectional data so that causation cannot be inferred. Second, the survey responses are all self-reported, which may contribute to measurement error such as reporting bias and difficulty with the complexity of the outcome variable assessing whether respondents would theoretically allow teenagers to participate in football. Third, while we controlled for parent status and the result pointed to parent status not being a significant correlate, it is possible that a nationally representative parent-only sample may have yielded different results than the present study. Fourth, state concussion legislation comprehensiveness was based on an analysis of language in each state's respective legislation (Kim et al., 2017) and did not account for each state's system of implementation, education, and enforcement. It is possible that some state's mechanisms supporting concussion legislation were more effective than others and may have influenced residents' perception of high school football safety.

Despite these limitations, this study contributes to the literature by investigating the relationship between theory-based institutional pressures and willingness to allow participation in tackle football after accounting for individual-level factors. Certain institutional factors point to promising influence, whereas others warrant reevaluation, but without assessment we are left uncertain as to what mechanisms underlie differences in participatory outcomes. Public health and sport management scholars may be well served to address the little attention that has been given to these regulative, normative, and cultural-cognitive factors as they relate to sport participatory outcomes. Further research is needed, however, to unpack the institutional influences at play in youth sports and to improve youth public health outcomes more broadly.

Notes

¹Since the survey item asked specifically about boys, rather than all children, the results are not generalizable to all genders of tackle football participants. The authors made this decision because approximately 99.75% of high tackle football participants are boys (Associations, 2020).

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