TEME, Vol. XLVII, N° 3, July – September 2023, pp. 507–526

Original Research Paper https://doi.org/10.22190/TEME230314032M
Received: March 14, 2023 UDC 796.01:37.013.3
Accepted: March 31, 2023 796.01:159.9-053.5

MOTIVATING THE YOUTH: UNCOVERING THE ATTITUDES AND MOTIVATION BEHIND SCHOOL SPORTS ENGAGEMENT

Petar Mitić[1], Nikola Stojanović[1*], Zvezdan Savić[1], Nebojša Trajković[1], Đorđe Savić[2]

[1]University of Niš, Faculty of Sport and Physical Education, Niš, Serbia
[2]University of Belgrade, Faculty of Sport and Physical Education, Belgrade, Serbia

Abstract

This study aimed to investigate the relationship between attitudes, motivation, and school sports engagement frequency, using the newly constructed Attitudes and Motivation Toward School Sports Questionnaire (AMTSSQ) inventory as a tool for assessment. The study found a significant effect of attitudes ($F = 11.96$, $p < .001$, $n_p^2 = 0.02$) and motivation ($F = 19.63$, $p < .001$, $n_p^2 = 0.03$) with strong positive correlation coefficients ($r = 0.71$) between attitudes, motivation, and school sports engagement frequency. However, Bayesian analyses supported the null hypothesis with moderate to strong evidence (Bayes Factor < 0.33), and credible intervals for effect size and R^2 were relatively narrow. Additionally, school sports engagement frequency is not significantly related to motivation ($b = -0.08$ to 0.03, $p > .05$), and the highest order unconditional interaction of school sports engagement frequency and attitudes was not significant ($F = 1.18$, $p = .315$). However, attitudes were strongly related to motivation ($R^2 = .99$), suggesting that students who viewed school sports as important and developed had higher motivation toward school sports. Hence, we can conclude that the AMTSSQ reliably and validly assesses students' attitudes and motivation toward school sports, and we found positive associations between attitudes and motivation. The findings suggest that attitudes towards school sports, like the perceived importance and developmental benefits, are significant predictors of motivation and may influence engagement in school sports. However, school sports engagement frequency did not moderate the relationship between attitudes and motivation. These findings have implications for promoting physical activity and student-school sports participation.

Key words: attitudes, motivation, school sports, engagement frequency, physical activity.

[*] Corresponding author: Tijana Purenović-Ivanović, University of Niš, Faculty of Sport and Physical Education, Čarnojevića 10a, 18000 Niš, Serbia, tijanapurenovic@gmail.com

МОТИВИСАЊЕ МЛАДИХ: ОТКРИВАЊЕ СТАВОВА И МОТИВАЦИЈЕ КОЈИ СТОЈЕ ИЗА ШКОЛСКОГ СПОРТСКОГ АНГАЖОВАЊА

Апстракт

Ова студија је имала за циљ да истражи однос између ставова, мотивације и учесталости ангажовања у школском спорту, користећи новоконструисани Упитник о ставовима и мотивацији ученика према школском спорту (УСМПШС) као алат за процену. Студија је открила значајан ефекат (F = 11.96, p < .001, n_p^2 = 0.02) и мотивације (F = 19.63, p < .001, n_p^2 = 0.03) са јаким позитивним коефицијентима корелације (p = 0,71) између ставова, мотивација и учесталост школског спортског ангажовања. Међутим, Бајесове анализе су подржале нулту хипотезу са умереним до јаким доказима (Бајесов фактор < 0,33), а веродостојни интервали за величину ефекта и R^2 били су релативно уски. Поред тога, учесталост ангажовања у школском спорту није значајно повезана са мотивацијом (b = -0.08 до 0.03, p > .05), а безусловна интеракција највишег реда учесталости ангажовања у школском спорту и ставова није била значајна (F = 1.18, p = .315). Међутим, ставови су били снажно повезани са мотивацијом (R^2= .99), што сугерише да су ученици који су школски спорт сматрали важним и развијеним имали већу мотивацију за школски спорт. Дакле, можемо закључити да УСМПШС поуздано и ваљано процењује ставове и мотивацију ученика према школском спорту, а утврдили смо позитивне везе између ставова и мотивације. Налази сугеришу да су ставови према школском спорту, као што су значај и развијеност, значајни предиктори мотивације и могу утицати на бављење школским спортом. Међутим, учесталост ангажовања у школском спорту није била значајан модератор у реалцији између ставова и мотивације. Ови налази имају импликације на промовисање физичке активности и учешћа ученика у школском спорту.

Кључне речи: ставови, мотивација, школски спорт, учесталост ангажовања, физичка активност.

INTRODUCTION

Regular physical activity and sports engagement have been widely recognised as essential components of a healthy lifestyle, providing various benefits (Bursnall, 2014; Eime, Young, Harvey, Charity, & Payne, 2013). However, rising concerns about the lack of physical activity and sports participation tendencies might explain various adverse health outcomes, such as obesity, cardiovascular disease, and diabetes (Kohl et al., 2012). Therefore, school-based programmes and activities could effectively promote students' physical activity and sports participation (Bursnall, 2014; Eccles & Barber, 1999; Fraser-Thomas et al., 2005; Lonsdale et al., 2013). These programmes allow students to engage in physical activity, develop new skills, and build peer relationships (Bryan & Solmon, 2012). By recognizing physical education (PE) as a vital component of the school curriculum, educators might embrace its capacity to promote lifelong physical activity and overall well-being in children and adolescents (Fairclough, Stratton, & Baldwin, 2002; Sallis et al., 1997).

Some evidence also suggests that self-esteem, reduced stress, and better social skills in children and adolescents might improve during regular physical activity (Eime et al., 2013; Gould & Carson, 2008). Enjoyment of physical education class (Barr-Anderson et al., 2008), relatedness perceptions, motivation, and affective responses from peers and teachers (Cox et al., 2009), motivational climate (Trbojević, 2017) and social support (Duncan & McAuley, 1993) can influence students' attitudes and motivation toward sports. Rhodes and Courneya (2003) addressed that planned and past behavior model student motivation in physical education and engagement in physical activity. Therefore, school-based physical education programmes might contribute to lifetime physical activity (Fairclough et al., 2002) and promote psychological and social benefits for children and adolescents, including life skills development (Gould & Carson, 2008).

Additionally, PE engagement might significantly shape students' attitudes and motivation toward sports (Eccles & Barber, 1999; Fraser-Thomas, Côté, & Deakin, 2005). However, despite the essential benefits, students struggle to meet daily physical activity recommendations and, surprisingly, despite the potential benefits of PE, children and adolescents report a lack of enjoyment and engagement in PE classes, which can gradually decay physical activity (Barr-Anderson et al., 2008; Bryan & Solmon, 2012). Therefore, researchers and practitioners tend to identify factors explaining students' motivation, enjoyment, and engagement in PE (Bryan & Solmon, 2012; Cox, Duncheon, & McDavid, 2009; Lonsdale et al., 2013). Few studies explored factors that might influence students' motivation, enjoyment, and participation in Physical Education (PE), including social support from peers and teachers (Cox et al., 2009; Duncan & McAuley, 1993), intrinsic motivation (Hagger & Chatzisarantis, 2005; Markland & Hardy, 1997; Pelletier et al., 1995), and perceived competence (Lonsdale et al., 2013).

Looking back on previous arguments, some authors have applied several theoretical frameworks to understand the determinants that underpin students' motivation and PE engagement. One such framework is Self-determination theory (SDT), which points out that individuals are more likely to engage in an activity if it supports their competence, autonomy, and relatedness (Ryan & Deci, 2000). Social cognitive theory (SCT) also proposes that personal, behavioral, and environmental factors might influence a cognitive process to shape positive behavior (Schunk, 1989). Lastly, the planned behavior theory (TPB) suggests that a personal attitude toward a particular behavior, subjective norms, and perceived behavioral control influences their intention to embrace the behavior (Rhodes & Courneya, 2003).

To address this specific problem, the exercise Motivation Questionnaire (Markland & Hardy, 1997), the Physical Activity Enjoyment Scale (Kendzierski & DeCarlo, 1991), and the Sport Motivation Scale (SMS) (Pelletier et al., 1995) are a few respected examples of inventories established to investigate motivation and attitudes toward physical activities and sports.

Literature has extensively used these inventories to explore the factors influencing motivation and attitudes toward physical activity and sports.

However, while these inventories are helpful, they often focus on general attitudes toward physical activity and sports rather than attitudes specifically toward school sports. Existing inventories tend to focus on individual-level factors such as personal interest, enjoyment, and perceived competence but often fail to capture the unique characteristics of school sports, such as team dynamics, school pride, and the role of teachers and administrators. As a result, we need a more thorough understanding of students' attitudes and motivation toward school sports to support the development of effective sports programmes and policies that promote physical activity and well-being among youth. Developing a new inventory is necessary to fill the gap in the literature regarding attitudes toward school sports. Existing inventories do not comprehensively measure attitudes and motivation toward school sports. It might be a significant gap in the literature because school sports have unique characteristics compared to other forms of physical activity or sports participation. Therefore, we constructed a novel inventory, The Attitudes and Motivation Toward School Sports Questionnaire (AMTSSQ), to exclusively assess students' attitudes and motivation toward school sports.

The AMTSSQ includes attitudes towards sports not currently addressed in other inventories. For example, the AMTSSQ addresses aspects of engagement in school sports, such as academic performance, conduct, physical development, self-discipline, and hygiene habits. These factors might be essential for comprehensively measuring attitudes and motivation toward school sports. Thus, the AMTSSQ can provide researchers and educators with a more nuanced understanding of students' attitudes toward school sports and their motivation to participate.

The AMTSSQ is also designed specifically for use in school settings, making it a valuable tool for assessing the effectiveness of school sports programmes and interventions. The inventory assesses intrinsic and extrinsic motivators, including enjoyment, interest, personal growth, competition, social connections, and recognition. These factors are consistent with the self-determination theory of motivation, which posits that individuals are motivated to engage in activities that fulfill their basic psychological needs for autonomy, competence, and relatedness (Ryan & Deci, 2020).

Therefore, the purpose of this study was to investigate the relationship between attitudes, motivation, and school sports engagement frequency to explore the factors that contribute to students' engagement in school sports using the AMTSSQ as a tool for assessment. We hypothesised that students who perceive school sports as important and developed would have higher levels of motivation (both intrinsic and extrinsic) toward engagement in school sports. Additionally, we hypothesised that students who engaged in school sports more frequently would have higher attitudes and motivation scores than those who engaged less frequently. By

understanding the factors influencing students' attitudes and motivation toward school sports, we hope to provide practical insights to promote physical activity and school sports participation among students.

METHODS

Study Design and Procedures

This cross-sectional study aimed to explore the attitudes and motivation of elementary and secondary school students toward engagement in school sports in Serbia. In May 2022, the authors conducted the study as a part of a national initiative to develop school sports in Serbia. The Ministry of Education approved the selection of a representative sample from all administrative districts in Serbia. The study employed a self-reported questionnaire to assess attitudes and motivation toward school sports.

We performed apriori analysis to determine the sample size before the study to ensure statistical power and representativeness of the target population. Respondents were given specific instructions to avoid misleading and inaccurate responses and were informed about the goal and importance of the study to improve the quality of school sports in Serbia. For example, we provided information that school sports include organised extracurricular sports activities in and outside the school, within the Physical and Health Education subject, including sports sections, school sports competitions (within the school and between schools), school sports week, and all sports activities following the School Programme and Annual school work plan.

The questionnaire was designed explicitly for this study, and explored the construct of attitudes and motivation toward school sports engagement. The study explored how attitudes and motivation may differ when accounting for engagement in school sports, including more than two times a week, one to two times a week, one to two times a month, and a few times a year. Additionally, the study explored the moderating role of engagement in school sports in the association between attitudes and students' motivation.

The questionnaire was administered electronically (Google Forms) and forwarded to official school email addresses across Serbia for efficiency. We did not limit the time to complete the questionnaire and informed respondents that responses would remain anonymous and be used only for research purposes. We did not include incompletely administered responses with ambiguous outcomes in the analysis.

We conducted the study procedures according to the Declaration of Helsinki, which outlines ethical principles for research involving human subjects. The authors improved the study design and procedures for scientific publication by providing a more detailed description of the statistical analyses performed, such as the specific methods used to assess differences in attitudes and motivation across levels of engagement in school sports. Additionally, we emphasised the potential study's limitations, such as self-reported measures bias, which might enhance the scientific rigor of the study.

Participants

The study enrolled participants from primary (fifth through eighth grade) and secondary (first through fourth grade) schools in Serbia. A total of 11,381 students participated in the study, of which 2,941 (25.8%) were from secondary school and 8,440 (74.2%) were from primary school. The majority of the participants (74.1%) reported engaging in school sports more than twice a week, while 12.6% reported engaging in sports one to two times a month, 5.8% reported engaging in sports one to two times a week, and 7.5% reported engaging in sports only a few times a year. Among the participants, 5,438 (47.8%) were male, and 5,943 (52.2%) were female.

We recruited participants via email sent by their school administrators. The inclusion criteria for the study were students who participated in school sports, and we enrolled participants from all administrative districts and municipalities of Serbia to ensure a representative sample. All participants or their parents or legal guardians for students under 18 provided informed consent.

Measures

The Attitudes and Motivation Toward School Sports Questionnaire (AMTSSQ). The present study used a newly constructed AMTSSQ inventory. The AMTSSQ assesses students' attitudes and motivation toward school sports. Initially, this questionnaire comprised 45 items, divided into two subscales: Attitudes (20) and Motivation (25). The attitudes subscale involved items measuring the importance (8 items) and development (12 items) of school sports, while the motivation subscale explored intrinsic (11) and extrinsic motivation (14). We consider intrinsic motivation from several vital aspects. For example, motivation towards learning and epistemic need towards knowledge and understanding, achievement, and experiencing stimulation (see Appendix A for questionnaire items). Likewise, external regulation, introjection, and identification signify external motivation. We evaluated participants' responses using a five-point Likert scale, which reflects their degree of agreement (Strongly Disagree, Disagree, Neither agree nor disagree, Agree and Strongly Agree, see Appendix A). In addition to individual item analysis, we summed relevant items for each variable to form composite scores that we included in the comparative (school sports engagement frequency) and moderation analyses. For example, we provided the unique composite score for each subscale (attitudes and motivation) by summing all item responses for each participant.

We extracted two distinct factors using the explorative factor analysis (EFA). The factor analysis using a diagonally weighted least squares (DWLS) estimator with direct oblimin rotation proved that each item corresponds to theoretically assumed factors (attitudes and motivation). Based on the results, most items have high communalities, with most values above .7, indicating that they share a substantial variance with other items

in the dataset. Items with higher commonalities are generally considered more reliable and can be used to provide a more accurate representation of the underlying construct. However, a few items have relatively low communalities (A17, M27, M28, M29, M38), particularly for the extraction method. Therefore, we excluded the underlined items from further analyses (see Figure 1). These results may indicate that these items are less reliable and may not fit the underlying construct well. Factor loadings for this scale were clear, with moderate to high (ranging from .68 to .92 and .71 to .95 on the two factors, respectively) and minimal cross-factor loadings (no more than .17). The KMO was 0.99.

Moreover, we evaluated the model's fit. The results of the confirmatory factor analysis (CFA) indicated an excellent fit (SRMR = .028; CFI = .998, RMSEA = .027; TLI = .998) (see Fig. 1). The internal consistency in this study for the scale proved to be excellent (Cronbach alpha was .98 and .99 for attitudes and motivation, respectively). Finally, average inter-item correlations were .71 and .79 for attitudes and motivation, respectively.

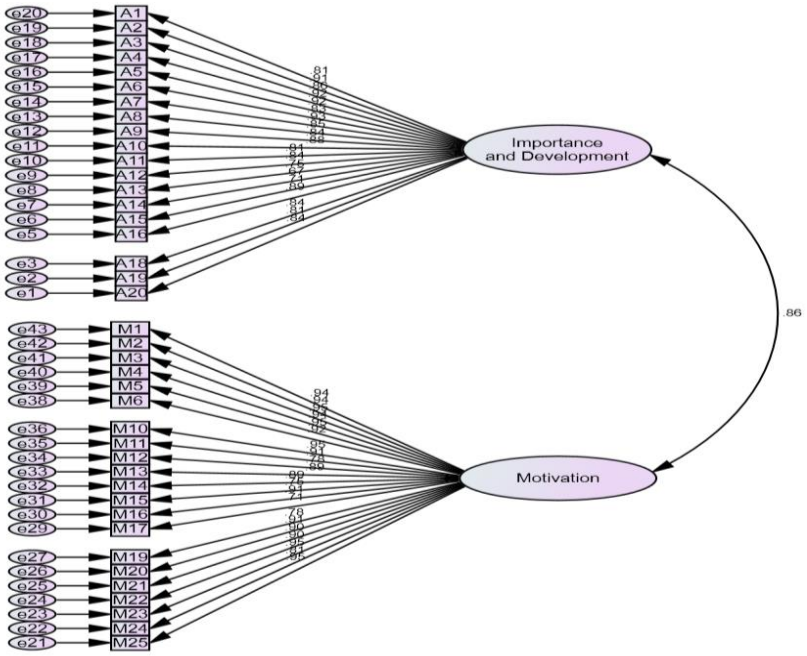

Figure 1. The figure displays the confirmatory factor analysis (CFA) results for the measurement model of the latent construct. The CFA model had an excellent fit to the data with a comparative fit index (CFI) of 0.998, and we displayed each indicator's standardised regression weights and corresponding significance levels. The circles represent the error variances for each indicator. A rectangle depicts the manifest variables, and ovals represent the latent variables.

Sample Size Calculation

We conducted an a priori multiple regression power analysis using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) for the moderation analysis with seven predictors (attitudes, >2 weekly, 1-2 weekly, 1-2 monthly, and >2 weekly*attitudes, 1-2 weekly*attitudes, 1-2 monthly*attitudes, interactions) as the input parameters. By using the values of alpha (0.05), power (0.95), and the expected small effect size ($f = 0.01$), we attempted to determine an appropriate sample size. Based on these assumptions, the desired sample size for this study was 2191 participants.

Data analyses

RStudio was used to process the data (version 2022.07.0.548, Spotted Wakerobin, Boston, MA). When applicable, means, medians, and standard deviations were estimated to characterise categorical and continuous variables for the whole sample. We used analysis of variance (ANOVA) with post hoc pairwise comparisons with Games-Howell and Holm adjustment to determine whether there was a significant difference in attitudes (importance and development of school sports) among the different levels of school sports engagement. Additionally, we performed Bayesian analysis using Bayes Factor and R^2 posterior Bayesian to provide additional evidence supporting the observed effect. Finally, the moderation model (model 1) was also employed to determine if school sports engagement frequency moderates the relationship between attitudes and motivation. We evaluated the moderating effect using a customised R script (Hayes, 2022). The QuantPsyc package centeres on variables and explores the interaction between attitudes and motivation, with motivation as the dependent and importance as the independent variable. A bootstrapping approach was applied (with 5000 resamples). We established the threshold of significance at 0.05.

RESULTS

The analysis of variance (ANOVA) indicates a significant difference in the attitudes (importance and development of school sports) between groups ($F = 11.96$; $p < .001$). The effect size ($n_p^2 = 0.02$; *Cl95%* [0.01, 1.00])) was small, indicating that the tested variable explained only a small proportion of the variability observed in the data. The results of the Games-Howell pairwise test with Holm adjustment proved that the group with the highest level of school sports engagement (engaging in sports activities more than twice a week) had significantly higher scores than the other groups (see Figure 2). The mean score difference between other groups was not significant. These findings suggest that a higher frequency of school sports engagement may be associated with higher scores on attitudes.

However, the Bayesian analysis could not support the observed effect. The Bayes Factor ($log_e (BF_{01})$ = -8.97) suggests moderate to strong evidence in favor of the null hypothesis (no effect), meaning that the data provide evidence against the alternative hypothesis (there is an effect) and support the idea that there is no meaningful relationship between school sports engagement frequency and the relationship between attitudes and motivation. The R^2 posterior Bayesian (0.003) indicates that the tested variable explains a small proportion of the variability observed in the data. The 95% interval for the R^2 posterior Bayesian (*CI* [0.002, 0.006]) provides a range of plausible values for the actual R^2 value.

Finally, the Cauchy test for the correlation coefficient 0.71 provides evidence supporting a moderate correlation between the variables. Overall, the results suggest that the school sports engagement frequency has a small and insignificant effect on attitudes (importance and development) by supporting null hypotheses.

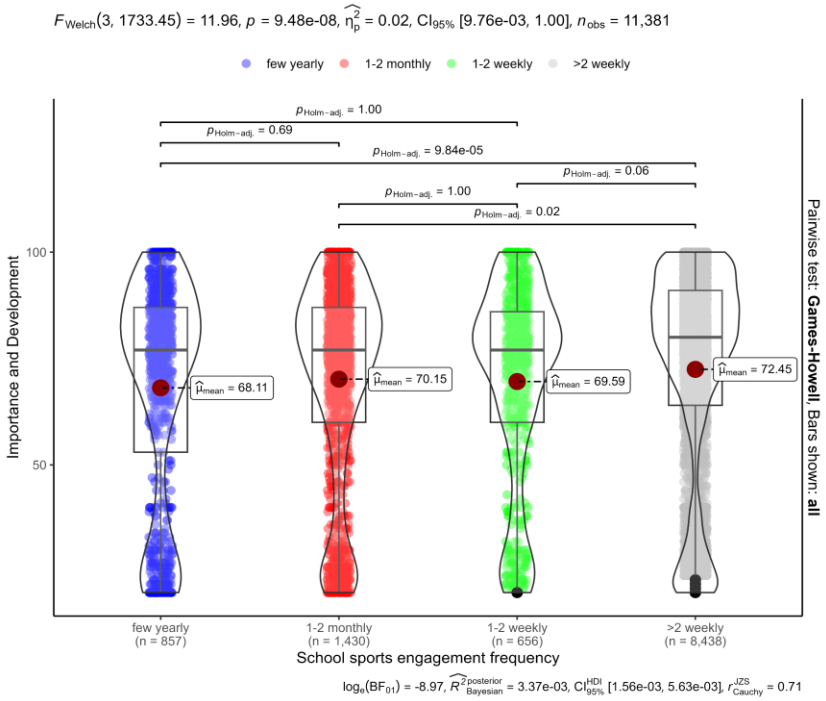

Figure 2. *The figure displays a combined box, and violin plot generated using the ggbetweenstats function in R. The plot shows the distribution of a continuous variable across four groups. The x-axis represents the school sports engagement frequency, the y-axis represents the motivation, the boxes represent the interquartile range, and the whiskers show the extent of the data. The violin plot displays the probability density of the data. The colors of the boxes and violins correspond to the group variable.*

The analysis of variance (ANOVA) also showed a significant difference in motivation (intrinsic and extrinsic) between groups (F = 19.63; p < .001). The effect size (n_p^2 = 0.03; *95% CI* [0.02, 1.00]) was small, indicating that the tested variable explained only a small proportion of the variability observed in the data. The results of the Games-Howell pairwise test with Holm adjustment proved that the group with the highest level of school sports engagement (engaging in sports activities more than twice a week) had significantly higher scores than the other groups (see Figure 3). The mean score difference between other groups was not significant. These findings suggest that a higher frequency of school sports engagement may be associated with higher scores on motivation.

However, the Bayesian analysis provides further evidence in support of the observed effect. The Bayes Factor ($log_e (BF_{01})$ = -20.17) suggests moderate to strong evidence in favor of the null hypothesis (no effect), meaning that the data provide evidence against the alternative hypothesis (there is an effect) and support the idea that there is no meaningful relationship between school sports engagement frequency and the relationship between attitudes and motivation. The R^2 posterior Bayesian (0.005; *95% CI* [0.003, 0.008]) indicates that the tested variable explains a small proportion of the variability observed in the data.

Finally, the Cauchy test for the correlation coefficient 0.71 provides evidence supporting a moderate correlation between the variables. Overall, the results suggest that the school sports engagement frequency has a small and insignificant effect on motivation (intrinsic and extrinsic) by supporting null hypotheses.

The previous results suggest that we could explain only a small amount of the variance. Therefore, we conducted a moderation analysis to determine whether school sports engagement frequency would modify or strengthen the relationship between the variables. The goal was to determine whether the relationship between the variables previously observed is consistent across different levels of the moderator variable. We used the QuantPsyc package to center variables and analyze the interaction between attitudes (importance and development) and school sports engagement frequency, predicting motivation towards school sports. We checked the data for outliers and regression assumptions and found no violations.

The moderation analysis examined the relationship between motivation and predictors, including the importance and frequency of school sports engagement. The results suggest that the interactions of the highest unconditional order that the moderating influence of the school sports engagement frequency (F = 1.18, p = .315) was not significant and accounts for 0 % of the variance. Similarly, school sports engagement frequency (1-2 monthly: b = -0.08, p > .05, *95% CI* [-0.18, 0.03]; 1-2 weekly: b = 0.03, p > .05, *95% CI* [-0.10, 0.15]; >2 weekly: b = 0.01, p > .05, *95% CI* [-0.08, 0.10]) did not significantly affect motivation.

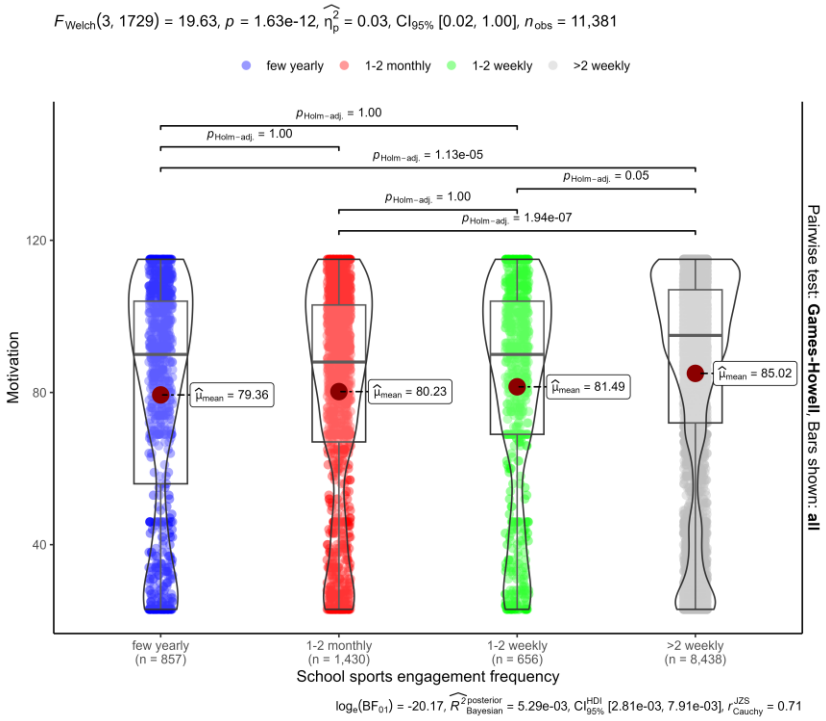

Figure 3. The figure displays a combined box, and violin plot generated using the ggbetweenstats function in R. The plot shows the distribution of a continuous variable across four groups. The x-axis represents the school sports engagement frequency, the y-axis represents the motivation, the boxes represent the interquartile range, and the whiskers show the extent of the data. The violin plot displays the probability density of the data. The colors of the boxes and violins correspond to the group variable.

The interaction effects were not significant, indicating that the relationship between the attitudes and motivation did not vary significantly across the school sports engagement frequency (1-2 monthly: *b* = -0.00, *p* > .05, *95% CI* [-0.00, 0.00]; 1-2 weekly: *b* = 0.00, *p* > .05, *95% CI* [-0.00, 0.01]; >2 weekly: *b* = 0.00, *p* > .05, *95% CI* [-0.00, 0.00]).

Additionally, we emphasise that the main effect of school sports engagement frequency was also insignificant, indicating that the school sports engagement frequency did not have a significant association with motivation (1-2 monthly: *b* = -0.08, *p* > .05, *95% CI* [-0.18, 0.03]; 1-2 weekly: *b* = 0.03, *p* > .05, *95% CI* [-0.10, 0.15]; >2 weekly: *b* = 0.01, *p* > .05, *95% CI* [-0.08, 0.10]).

Table 1. Regression results using motivation as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	Fit
(Intercept)	72.23**	[72.15, 72.32]			
Attitudes	0.86**	[0.86, 0.86]	.08	[.08, .09]	
1-2 Monthly	-0.08	[-0.18, 0.03]	.00	[-.00, .00]	
1-2 weekly	0.03	[-0.10, 0.15]	.00	[-.00, .00]	
>2 weekly	0.01	[-0.08, 0.10]	.00	[-.00, .00]	
Attitudes: 1-2 Monthly	-0.00	[-0.00, 0.00]	.00	[-.00, .00]	
Attitudes: 1-2 weekly	0.00	[-0.00, 0.01]	.00	[-.00, .00]	
Attitudes: >2 weekly	0.00	[-0.00, 0.00]	.00	[-.00, .00]	
					R^2 = .998** 95% CI [1.00,1.00]

Note: A significant *b*-weight indicates that the semi-partial correlation is also significant. b represents unstandardised regression weights. sr^2 represents the semi-partial correlation squared. LL and UL indicate a confidence interval's lower and upper limits, respectively. * indicates $p < .05$. ** indicates $p < .01$. 1-2 Monthly, 1-2 weekly, and >2 weekly represent school sports engagement frequency.

Therefore, in this sample, no evidence suggests that engagement frequency moderates the relationship between importance and motivation, as shown in Figure 4. We can observe that the regression slopes were similar. These findings suggest that the frequency of school sports engagement may not significantly predict motivation, regardless of the importance placed on this activity.

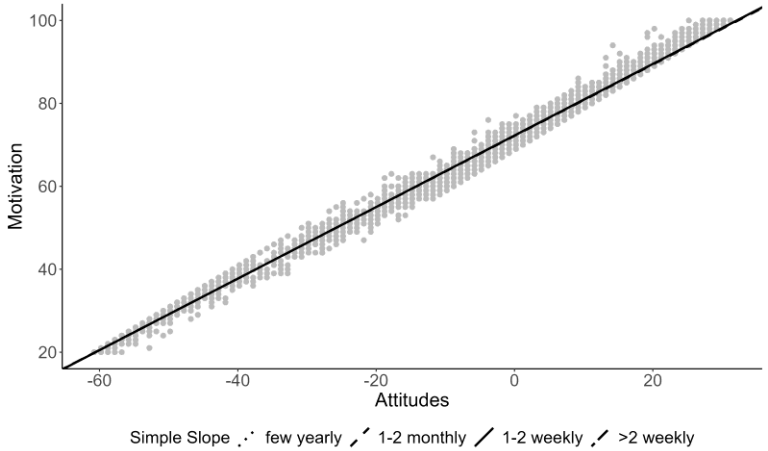

Figure 4. *Moderation plot of the relationship between Attitudes (centered) and motivation moderated by school sports engagement frequency. The dotted, dashed, and solid lines indicate simple slopes of a few yearly, 1-2 monthly, 1-2 weekly, and >2 weekly slopes, respectively.*

DISCUSSION

The present study utilised a newly constructed inventory, the Attitudes and Motivation Toward School Sports Questionnaire (AMTSSQ), to assess students' attitudes and motivation toward school sports. The authors of this questionnaire aimed to capture two distinct factors, attitudes and motivation, and further divided them into subcategories. The Attitudes subscale measured importance and development, while the Motivation subscale explored intrinsic and extrinsic motivation.

We evaluated the AMTSSQ using exploratory and confirmatory factor analyses to ensure that the items corresponded to the theoretically assumed factors. The factor loadings for the scale were clear, with most items having high communalities, indicating that they share a substantial variance with other items in the dataset. The confirmatory factor analysis results indicated a good fit of the model, and the scale's internal consistency was excellent, as evidenced by the high Cronbach alpha values for both Attitudes and Motivation subscales. Other authors designed valuable inventory to assess motivation. For example, the Exercise Motivation Inventory (EMI) (Markland & Hardy, 1997) inventory assesses motivation toward physical activity. The EMI consists of six subscales: enjoyment, social recognition, affiliation, competence, health and fitness, and appearance. Another inventory, the Physical Activity Enjoyment Scale (PACES), assesses the enjoyment of physical activity (Kendzierski & DeCarlo, 1991). The PACES consists of 18 items measuring the pleasure and enjoyment of a physical activity.

Additionally, the Sport Motivation Scale (SMS) (Pelletier et al., 1995) has a similar construct to ours to assess motivation toward sports. The SMS consists of three subscales: intrinsic motivation, identified regulation, and external regulation. However, we hypothesised that the student's attitudes regarding the importance and development of school sports might influence students' motivation to engage in school sports. Therefore, the AMTSSQ's focus on the importance and development of school sports makes it a unique and valuable tool for researchers and practitioners interested in promoting physical activity and student-school sports participation.

Based on our novel inventory, the results of this study suggest that school sports engagement frequency is significantly associated with attitudes (importance and development) and motivation (intrinsic and extrinsic). Specifically, participants who engaged in school sports activities more than twice a week had higher attitudes and motivation scores than those who engaged in school sports less frequently.

These findings follow previous research demonstrating that regular participation in sports is associated with positive outcomes such as improved physical health, academic achievement, and social development (Bursnall, 2014; Eime et al., 2013). It is possible that engaging in school

sports activities more frequently may lead to increased opportunities for social interaction, skill development, and personal growth, which in turn may contribute to more positive attitudes and motivation toward sports.

However, we explored the results more deeply and found that school sports engagement frequency did not significantly affect attitudes or motivation toward school sports. This result suggests that while participating in school sports may benefit physical health, it may not significantly impact students' attitudes or motivation toward sports. Although there were pairwise differences in favor of the most frequently engaged group, the Bayesian analysis provides further evidence supporting the null hypothesis that there is no meaningful relationship between school sports engagement frequency and the relationship between attitudes and motivation. This finding is important because promoting school sports engagement frequency may not necessarily improve students' attitudes or motivation toward sports.

Additionally, since the explained variance was slight, we explored the moderating role of school sports engagement frequency in the relationship between attitudes (importance and development) and motivation (intrinsic and extrinsic). The results showed that the interaction effects were insignificant, indicating that the relationship between the importance of school sports engagement and motivation did not vary significantly by frequency of engagement. Furthermore, the main effect of engagement in school sports was also insignificant, suggesting that the frequency of school sports engagement did not have a significant association with motivation.

These findings follow previous research suggesting that the frequency of school sports engagement may not significantly predict motivation. For instance, a study by Lonsdale, Hodge, and Rose (2008) found that participation frequency was not significantly associated with motivation among young athletes. This study suggests that while engagement frequency may be necessary for other outcomes, such as skill development or physical health, it may not be a critical factor in predicting motivation toward school sports.

The present study also found no evidence for the moderating role of engagement frequency in the relationship between attitudes and motivation. This finding is consistent with a meta-analysis by Rhodes and Courneya (2003), which found that the effect sizes of attitude-behavior relationships did not differ significantly based on participation frequency. Therefore, these findings suggest that the moderating role of school sports engagement frequency may depend on specific attitudes and behaviors.

Researchers have found that several attitudes contribute to more frequent engagement in school sports. For instance, research has shown that positive attitudes towards physical activity, such as enjoyment and self-efficacy, are associated with higher levels of engagement in sports among adolescents (Lubans, Foster, & Biddle, 2008; Standage, Duda, &

Ntoumanis, 2003). Additionally, perceived social support for physical activity, such as encouragement from friends and family, is positively associated with engagement in school sports (Duncan & McAuley, 1993). Another crucial attitude that may contribute to engagement in school sports is perceived importance or value. A study by Fredricks and Eccles (2004) found that adolescents who perceived physical activity as necessary were likelier to engage in sports activities.

Similarly, Fraser-Thomas et al. (2005) found that the perceived importance of physical activity was positively associated with sport participation among young athletes. Research has also shown that attitudes toward the developmental benefits of sports, such as skill acquisition and personal growth, are positively associated with engagement in sports (Eccles & Barber, 1999; Gould & Carson, 2008). For instance, a study by Weiss and Petlichkoff (1989) found that the perception of skill development significantly predicted sports participation among high school students.

Although attitudes are not interchangeable with motivation, they might influence motivation by shaping an individual's beliefs and perceptions about the behavior, impacting their motivation to engage in it (Ryan & Deci, 2000). Therefore, positive attitudes towards physical activity, social support for physical activity, the perceived importance or value of physical activity, and attitudes towards the developmental benefits of sports are all associated with higher levels of engagement in school sports among adolescents. Barr-Anderson et al. (2008) argue that students who believe in the positive benefits of physical activity, such as improved physical health and reduced stress, are more likely to engage in school sports. Previous arguments may suggest that attitudes toward physical activity may contribute to more frequent engagement in school sports.

Furthermore, studies have shown that enjoyment and intrinsic motivation are strong predictors of continued participation in sports (Vazou, Ntoumanis, & Duda, 2005). Students who enjoy the sport and find it interesting are likelier to continue participating, while those who feel pressure or are motivated by external rewards are less likely to continue (Ryan & Deci, 2000). Previous findings highlight the importance of promoting enjoyment and intrinsic motivation in school sports programmes to encourage continued engagement.

Several studies have suggested that extrinsic factors like schools and physical education teachers promote physical activity and develop students' motivation toward school sports (Cox et al., 2009; Standage et al., 2003). The teachers' enthusiasm and support for physical activity are associated with the students' engagement in physical activity (Fairclough et al., 2002). The school environment, including the availability of sports facilities and equipment, can also influence students' physical activity and motivation toward school sports (Sallis et al., 1997).

In addition, the teachers' use of motivational strategies, such as goal setting and feedback, has enhanced students' motivation and engagement in physical activity (Hagger & Chatzisarantis, 2005). Teachers can also promote enjoyment and positive experiences in physical activity, which can contribute to students' long-term engagement in physical activity (Lonsdale et al., 2013). Likewise, creating opportunities for student involvement in the decision-making process related to school sports can enhance their motivation and commitment to physical activity (Bryan & Solmon, 2012; Standage et al., 2003). Therefore, schools, physical education teachers, and other teachers can contribute significantly to developing students' motivation towards school sports by creating a supportive environment, using motivational strategies, and promoting enjoyment and positive experiences in physical activity.

In general, attitudes towards school sports and motivation may contribute to more frequent engagement in school sports. Educators must consider these attitudes when promoting and developing school sports programs. By understanding and addressing these factors, schools may be able to increase student participation and promote lifelong physical activity habits.

The present study contributes to understanding the factors influencing motivation toward school sports. The findings suggest that while attitudes toward school sports engagement are essential for motivation, the school sports engagement frequency may not be a critical factor. Future research could explore other potential moderators of the relationship between attitudes and motivation, such as gender, age, athletic ability, social support, school environmental factors, and cultural background. Additionally, the researchers could examine the longitudinal effects of attitudes and engagement frequency on motivation and related outcomes, such as academic achievement or physical health.

We should note that the present study has limitations. Firstly, the self-reported measures of attitudes, engagement frequency, and motivation may provide concerns about response bias and social desirability bias. Participants may have been reluctant to report negative attitudes or low levels of engagement. Secondly, our study examined attitudes (importance and development) and engagement frequency as only predictors of motivation, and there may be other important variables that we did not consider. Thirdly, Cross-sectional design may not have the utility to establish causal relationships between the variables of interest. Longitudinal studies would be needed to establish causality more confidently. Fourthly, the study may have limited generalizability to other populations beyond the specific sample studied as being limited to a particular geographic region.

CONCLUSION

Our findings suggest that students who engage in school sports activities more frequently (more than twice a week) have higher attitudes and motivation, but the engagement frequency does not significantly affect attitudes or motivation toward school sports. Interestingly, we found no evidence for the moderating role of school sports engagement frequency in the relationship between attitudes and motivation. Our study also suggests that the perceived importance or value of physical activity and attitudes toward sports' developmental benefits may contribute to school sports engagement. These findings have important implications for promoting school sports and physical activity among students. However, we should note that our cross-sectional data could not provide sufficient evidence to support our findings, so upcoming research should investigate this topic more profoundly. Future studies should focus on exploring different strategies in extracurricular sports that may improve attitudes and motivation and ultimately lead to increased engagement in school sports.

ACKNOWLEDGMENTS**:** We extend our sincerest thanks to the Serbian Ministry of Education for allowing us to conduct this study and for their unwavering commitment to encouraging physical activity and sports involvement among students. Our gratitude also goes to The Institute for the Evaluation of the Quality of Education and Training, whose invaluable assistance in data collection was critical to the success of this project. We cannot thank them enough for their indispensable aid, as this project would not have come to fruition without their valuable contribution.

REFERENCES

Barr-Anderson, D. J., Neumark-Sztainer, D., Lytle, L., Schmitz, K. H., Ward, D. S., Conway, T. L., . . . Pate, R. R. (2008). But I like PE: Factors associated with enjoyment of physical education class in middle school girls. Research Quarterly for Exercise and Sport, 79(1), 18-27.

Bryan, C. L., & Solmon, M. A. (2012). Student motivation in physical education and engagement in physical activity. Journal of Sport Behavior, 35(3), 267-285.

Bursnall, P. (2014). The relationship between physical activity and depressive symptoms in adolescents: a systematic review. Worldviews on Evidence-Based Nursing, 11(6), 376-382.

Cox, A., Duncheon, N., & McDavid, L. (2009). Peers and teachers as sources of relatedness perceptions, motivation, and affective responses in physical education. Research Quarterly for Exercise and Sport, 80(4), 765-773.

Duncan, T. E., & McAuley, E. (1993). Social support and efficacy cognitions in exercise adherence: A latent growth curve analysis. Journal of Behavioral Medicine, 16(2), 199-218.

Eccles, J. S., & Barber, B. L. (1999). Student council, volunteering, basketball, or marching band: What kind of extracurricular involvement matters? Journal of Adolescent Research, 14(1), 10-43.

Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: informing development of a conceptual model of health through sport. International Journal of Behavioral Nutrition and Physical Activity, 10(1), 1-21.

Fairclough, S., Stratton, G., & Baldwin, G. (2002). The contribution of secondary school physical education to lifetime physical activity. European Physical Education Review, 8(1), 69-84.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. Behavior Research Methods, 41(4), 1149-1160.

Fraser-Thomas, J. L., Côté, J., & Deakin, J. (2005). Youth sport programs: An avenue to foster positive youth development. Physical Education & Sport Pedagogy, 10(1), 19-40.

Fredricks, J. A., & Eccles, J. S. (2004). Parental Influences on Youth Involvement in Sports. In M. R. Weiss (Ed.), Developmental sport and exercise psychology: A lifespan perspective. (pp. 145-164). Morgantown, WV, US: Fitness Information Technology.

Gould, D., & Carson, S. (2008). Life skills development through sport: Current status and future directions. International Review of Sport and Exercise Psychology, 1(1), 58-78.

Hagger, M., & Chatzisarantis, N. (2005). The social psychology of exercise and sport: McGraw-Hill Education (UK).

Hayes, A. F. (2022). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (Third edition). New York: Guilford Publications.

Kendzierski, D., & DeCarlo, K. J. (1991). Physical activity enjoyment scale: Two validation studies. Journal of Sport & Exercise Psychology, 13(1), 50-64.

Kohl, H. W., Craig, C. L., Lambert, E. V., Inoue, S., Alkandari, J. R., Leetongin, G., & Kahlmeier, S. (2012). The pandemic of physical inactivity: global action for public health. The Lancet, 380(9838), 294-305.

Lonsdale, C., Hodge, K., & Rose, E. A. (2008). The Behavioral Regulation in Sport Questionnaire (BRSQ): Instrument development and initial validity evidence. Journal of Sport and Exercise Psychology, 30(3), 323-355.

Lonsdale, C., Rosenkranz, R. R., Peralta, L. R., Bennie, A., Fahey, P., & Lubans, D. R. (2013). A systematic review and meta-analysis of interventions designed to increase moderate-to-vigorous physical activity in school physical education lessons. Preventive Medicine, 56(2), 152-161.

Lubans, D. R., Foster, C., & Biddle, S. J. H. (2008). A review of mediators of behavior in interventions to promote physical activity among children and adolescents. Preventive Medicine, 47(5), 463-470.

Markland, D., & Hardy, L. (1997). On the factorial and construct validity of the Intrinsic Motivation Inventory: Conceptual and operational concerns. Research Quarterly for Exercise and Sport, 68(1), 20-32.

Pelletier, L. G., Tuson, K. M., Fortier, M. S., Vallerand, R. J., Briere, N. M., & Blais, M. R. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). Journal of Sport and Exercise Psychology, 17(1), 35-53.

Rhodes, R. E., & Courneya, K. S. (2003). Modelling the theory of planned behaviour and past behaviour. Psychology, Health & Medicine, 8(1), 57-69.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. American Psychologist, 55(1), 68.

Sallis, J. F., McKenzie, T. L., Alcaraz, J. E., Kolody, B., Faucette, N., & Hovell, M. F. (1997). The effects of a 2-year physical education program (SPARK) on physical activity and fitness in elementary school students. Sports, Play and Active Recreation for Kids. American Journal of Public Health, 87(8), 1328-1334.

Schunk, D. H. (1989). Social cognitive theory and self-regulated learning. In B. J. Zimmerman & D. H. Schunk (Eds.), Self-Regulated Learning and Academic Achievement Theory, Research, and Practice (pp. 83-110). New York, NY: Springer.

Standage, M., Duda, J. L., & Ntoumanis, N. (2003). A model of contextual motivation in physical education: Using constructs from self-determination and achievement goal theories to predict physical activity intentions. Journal of Educational Psychology, 95(1), 97.

Trbojević, J. (2017). Effects of motivational climate on the development of amotivation for sport in young handball players. Teme-Časopis za Društvene Nauke, 41(1), 211-226.

Vazou, S., Ntoumanis, N., & Duda, J. L. (2005). Peer motivational climate in youth sport: A qualitative inquiry. Psychology of Sport and Exercise, 6(5), 497-516.

Weiss, M. R., & Petlichkoff, L. M. (1989). Children's motivation for participation in and withdrawal from sport: Identifying the missing links. Pediatric Exercise Science, 1(3), 195-211.

МОТИВИСАЊЕ МЛАДИХ: ОТКРИВАЊЕ СТАВОВА И МОТИВАЦИЈЕ КОЈИ СТОЈЕ ИЗА ШКОЛСКОГ СПОРТСКОГ АНГАЖОВАЊА

Петар Митић[1], Никола Стојановић[1], Звездан Савић[1], Небојша Трајковић[1], Ђорђе Савић[2]

[1]Универзитет у Нишу, Факултет спорта и физичког васпитања, Ниш, Србија

[2]Универзитет у Београду, Факултет спорта и физичког васпитања, Београд, Србија

Резиме

Ова студија говори о значају физичке активности и бављења школским спортом у промовисању здравог начина живота и изазовима са којима се појединци суочавају у укључивању физичке активности и спорта у свој свакодневни живот. Такође, студија наглашава улогу физичког васпитања у промовисању целоживотне физичке активности и општег здравља и благостања код деце и адолесцената. Неколико теоријских оквира, укључујући Теорију самоопредељења, Друштвену когнитивну теорију и Теорију планираног понашања, коришћено је за разумевање детерминанти мотивације и ангажовања ученика у физичком васпитању и школском спорту. Поједине студије су идентификовале неколико фактора који утичу на мотивацију ученика, уживање и учешће у физичком васпитању и спорту, укључујући друштвену подршку вршњака и наставника, унутрашњу мотивацију, перципирану компетенцију и ваннаставно укључивање у спорт. Школски програми и активности могу ефикасно да промовишу физичку активност ученика и учешће у школском спорту, а поједини истраживачи су развили неколико мерних инструмената за процену мотивације и ставова према физичкој активности и спорту. Међутим, ниједан није, у потпуности, сагледао проблематику школског спорта,

који је по својој структури специфичан у односу на остале облике физичке активности. Са тим у вези, у сврху ове студије постојала је потреба конструисати нови упитник „Упитник о ставовима и мотивацији ученика према школском спорту (УСМПШС),“ који је укључивао 40 ставку подељену у две субскале: ставови и мотивација. Упитник је констрисан да експлицитно испита однос између ставова, мотивације и учесталости ангажовања у школском спорту као потенцијалних фактора који би могли ближе да појасне појаве које утичу на агажовање.

Студија је обухватила репрезентативни узорак од 11.381 ученика из свих управних округа у Србији који се баве школским спортом. Већина ученика је изјавила да се бави школским спортом више од два пута недељно. Студија је истраживала разлике у ставовима и мотивацији у односу на ниво ангажовања у школском спорту, као и његове модерирајућа улоге у релацији између ставова и мотивације.

Статистичка анализа је открила значајну разлику у ставовима и мотивацији између група, али је величина ефекта била мала, што сугерише да тестиране варијабле објашњавају само мали део варијансе уочене у подацима. Међутим, Бајесова анализа је пружила доказе у прилог нулте хипотезе, сугеришући да нема значајне везе између учесталости у ангажовању у школском спорту и ставова и мотивације према школском спорту. Регресиона анализа је показала да је модерирајући утицај учесталости школског спортског ангажовања био безначајан и чинио 0% варијансе. Све у свему, резултати сугеришу да учесталост ангажовања у школском спорту има мали утицај на ставове и мотивацију према школском спорту, а корелација између тестираних варијабли је умерена.

У закључку, упитник о ставовима и мотивацији према школском спорту (УСМПШС) је поуздан и валидан алат за процену ставова и мотивације ученика према школском спорту. Ученици који се чешће баве школским спортским активностима имају позитивније ставове и мотивацију од оних који се ређе њима баве, али учесталост ангажовања у школском спорту не утиче значајно на ставове или мотивацију. Студија такође сугерише да уочени значај или вредност физичке активности и ставови према значају и развијености школског спорта могу допринети његовом развоју. Ови налази имају важне импликације за промовисање школског спорта и физичке активности међу ученицима.