



# Indicators of students' readiness for physical exercise

UDC 796

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## Abstract

**Objective of the study** is to identify effective aspects of physical education for university students, taking into account their level of readiness for physical activity.

**Methods and structure of the study.** Research was conducted at Plekhanov Russian University of Economics, comprising: a review of the literature; a survey of first-year students (healthy students (n=390) and students with health issues (n=390)); and predictive modelling of students' physical education.

**Results and conclusions.** The experiment involved students from health groups I and II (the general medical group, GMG) and health group III (the special medical group, SMG). Priority forms of physical activity at school (team sports, gymnastics, athletics and ski training), as first-level predictors, were taken into account in the predictive modelling of students' physical education (PE): the introduction of priority types of sports games at school and physical education (PE) lessons, as well as sports clubs, including those for SMG students (taking into account their state of health). Factors increasing and decreasing students' physical activity as second-level predictors determine the prognostic significance for the modernisation of PE: professional development of specialists in priority types of sports games at school and corresponding types of physical sports; the application of digital technologies in the physical education and sports process, including with SMG students; the introduction of soft and neuroscientific sports activities into lessons. The identified predictors of students' readiness for physical activity formed the basis for predictive modelling of PE, extrapolating positive experiences of participation in clubs for priority sports to achieve a cumulative effect in improving young people's health.

**Keywords:** *students, fitness levels, physical activity, health status, specialist medical group, general medical group.*

**Introduction.** Against the backdrop of contemporary challenges, there has been a decline in students' health, partly due to a shift in their priorities regarding physical activity. Outside of study hours, students fall into two groups: the first group engages in no physical activity; the second prefers physical activity whilst self-isolating, using information technology [3].

In order to engage students in regular physical education and sporting activities, it is necessary to identify predictors of physical activity among students during their school years, so as to extrapolate positive experiences of using physical education resources into the university environment and achieve a cumulative effect in promoting young people's health.

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**Results of the study and discussion.** As an independent variable, a predictor has prognostic significance, representing a characteristic of an individual that determines the prediction of other characteristics of that individual [1]. Experts view physical readiness as a personal construct based on physical abilities and needs (interests) [6]. A student's readiness for physical activity is defined as a personal construct based on predictors at school.

The choice of types of physical activity for students must be determined taking into account health and socio-psychological characteristics (interpersonal interaction strategies) [5]. In support of the author's position that the introduction of sports games into physical education for young people contributes to the transformation of their spiritual and moral development, we note that for students with specific health conditions, it is advisable to introduce adapted forms of sports games, which will also contribute to the development of teamwork skills [3].

The study involved students from health groups I and II (GMG) and health group III (SMG), for whom a gentle exercise regime is required. School pupils' attendance at PE lessons serves as a predictor of their attendance at university (Fig. 1).

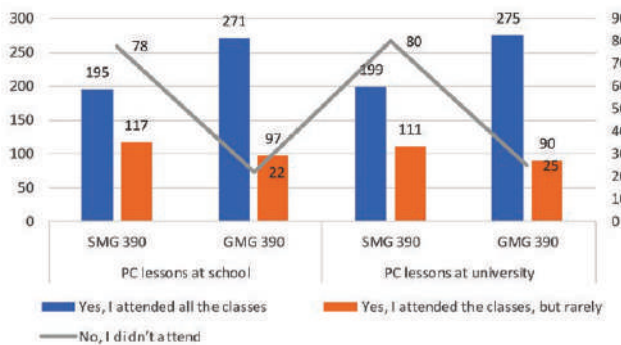


Figure 1. Attendance at physical culture classes at school/university

The combined figure (those who rarely attend PC lessons and those who do not attend at all) is as follows: SMG school pupils – 195, SMG students – 191, GMG school pupils – 119, GMG students – 115. This group of students (GMG, SMG) represents a cohort for whom specific conditions must be created in accordance with their characteristics (predictors) to forecast their engagement in PE classes at university.

Predictors of attendance at school sports classes do not correspond to the predictive value of attendance at similar classes at university. An analysis of GMG respondents' attendance at sports clubs at school/university showed: 156/101 attended sports clubs, attended rarely – 108/88, and 126/201 did not attend at all, which may be due to the strict selection process for university sports clubs to participate in competitions and determines the establishment of sports and fitness clubs, taking into account students' predictors for sports at school (Fig. 2).

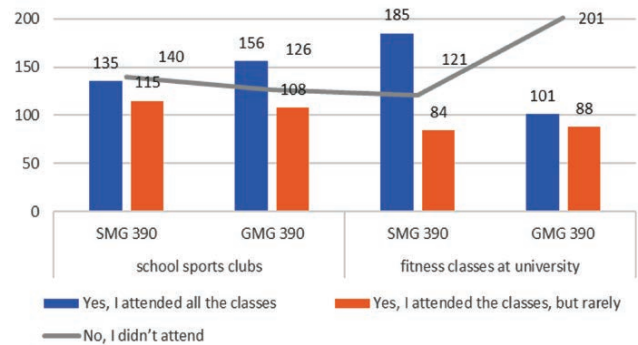


Figure 2. Attendance at classes (sport/fitness)

An analysis of SMG respondents' participation in sports clubs also confirms that school-level predictors have no predictive value for university-level predictors. Thus, at school, respondents participated in sports clubs (135 – regularly, 115 – rarely and 140 – not at all), which indicates their interest in sport and the conditions provided, where SMG students could practise their favourite sport whilst taking their health into account.

SMG students choose wellness activities (185 – regularly, 84 – rarely and 121 – not at all), which is due, on the one hand, to the lack of sports clubs for students with health conditions that take their health into account; on the other hand, by the variety of recreational clubs and the desire to engage in physical activity, even without taking into account their school-related preferences for specific sports.

The current situation can be explained by the fact that the inconsistent regulatory requirements regarding the admission of students with health conditions to sports activities and participation in competitions create difficulties for teachers and coaches in engaging this category of students in sporting activities at the university.

Predictors of GMG/SMG respondents' participation in school sports were identified: 207/178 pupils preferred team sports, 99/82 – gymnastics, 48/68 – athletics and 36/62 – cross-country skiing (Fig. 3).

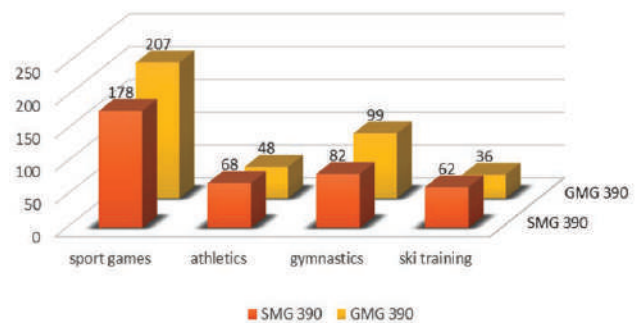


Figure 3. Priority sports at school (PC lessons/clubs)



In order to replicate the positive experience of sports activities in priority sports and achieve a cumulative effect in improving students' health, these predictors must be incorporated into PE.

Factors increasing physical activity among GMG/SMG students: gyms (180/157); specialists (107/82); social interaction (68/85); soft activities (35/66). Factors reducing physical activity: a heavy workload and exams (94/84 and 86/104); lack of sleep (43/89) and extra work (35/80) (Fig. 4).

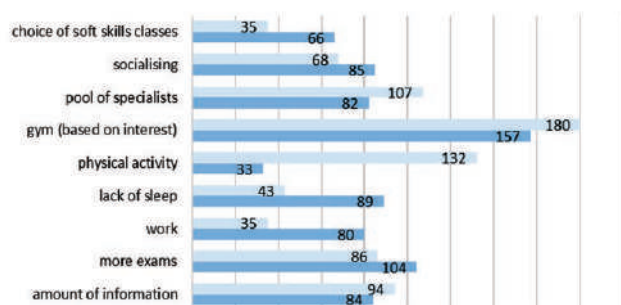


Figure 4. Factors influencing students' physical activity

We propose that priority types of physical activity at school serve as first-level predictors for the modernisation of PE in the first year of study; factors influencing increases and decreases in students' physical activity serve as second-level predictors, which provide predictive value for the modernisation of PE in subsequent years of study.

Based on the first-level predictors, we will conduct predictive modelling of PE in the first year of study (content and organisation):

- introducing priority types of sports games from school into PC lessons, including for students with special educational needs, taking into account their health status (elements or adapted types of sports games with simplified rules);

- organisation of sports and fitness clubs to promote mass participation in sport (intra-university competitions) in the school's priority sports for GMG students who have not made the university's main teams, and for SMG students, taking into account their health.

Based on second-level predictors, we will conduct predictive modelling of physical education for subsequent courses of study:

- introduction of the school's priority sports to enhance student interaction based on team interests through the development of behavioural strategies (cooperation and compromise) [3];

- professional development for specialists in the priority types of sports games at the university and cor-

responding types of phygital sports; the application of digital technologies in the physical education and sports process, including with SMG students, to improve the quality of education and increase the number of students participating in the university's sporting life [2];

- introducing soft and neuroscientific sports activities (neurogymnastics, neuroscience sports) into PC classes to help students recover from academic and work-related stress, optimise cognitive and intellectual abilities, and improve their psychological and emotional well-being [4].

**Conclusions.** The identified predictors of students' readiness (at the first and second levels) for physical activity facilitated the predictive modelling of students' physical education, by extrapolating positive experiences of participation in sports clubs for priority sports to achieve a cumulative effect in improving the health of young students.

### References

1. Boginskaya O.S. Pedagogicheskie prediktory stanovleniya gotovnosti studentov vuza k professionalno pedagogicheskoy deyatelnosti: avtoref. dis. ... kand. ped. nauk. Ekaterinburg, 2017. 24 p.
2. Glazkova G.B., Mamonova O.V., Dubrov A.A. Rol neyroplasticheskikh uprazhneniy v fizicheskom vospitanii studentov. *Kultura fizicheskaya i zdorove*. 2025. No. 1(93). Pp. 457-461. DOI: 10.47438/1999-3455\_2025\_1\_457.
3. Glazkova G.B., Mamonova O.V., Dubrov A.A., Lubyshv E.A. Transformatsiya ustanovok studentov k fizicheskoy aktivnosti polyarnost lichnostnykh prioritetov. *Teoriya i praktika fizicheskoy kultury*. 2025. No. 5. Pp. 51-53.
4. Ozerova O.A. Struktura i sodержanie tsifrovoy kompetentsii spetsialista po adaptivnoy fizicheskoy kulture. *Fizicheskaya kultura: vospitanie, obrazovanie, trenirovka*. 2023. No. 4. Pp. 5-8.
5. Pashchenko L.G., Romanko O.A., Krasnikova O.S. Sotsialno-psihologicheskie prediktory aktivizatsii sostyazatelnoy fizkulturno-sportivnoy deyatelnosti studentov vuza. *Teoriya i praktika fizicheskoy kultury*. 2023. No. 10. Pp. 88-90.
6. Tarabarina E.V. et al. Fizicheskaya gotovnost kak odin iz tselevykh rezultatov organizatsionno-metodicheskogo obespecheniya sistemy fizicheskogo vospitaniya studentov vuzov. *Sovremennye problemy nauki i obrazovaniya*. 2017. No. 2. URL: <https://science-education.ru/ru/article/view?id=26342> (date of access: 21.01.2026).