Comparative assessment of physical activity and sports motivation indicators of physical education university students in Russia and China

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Abstract

Objective of the study was to conduct a comparative assessment of the level of physical activity and sports motivation of students at physical education universities in Russia and China.

Methods and structure of the study. Scientific work was carried out among 223 students of physical education universities: Russian students 96 people (56 women and 40 men), Chinese students 127 people (57 women and 70 men). To achieve the goal, the following were used: a short version of the International Physical Activity Questionnaire (IPAQ), and the "Sports Motivation Scale" questionnaire. The results were analyzed separately among male and female students.

Results and conclusions. There are significant differences in the time spent on high-intensity physical activity ($p \leq 0.01$) and walking ($p \leq 0.01$), these indicators are higher among Russian male students compared to Chinese male students. No significant differences were found among female students. The data obtained indicate a certain difference in the lifestyle of students from different countries and in preferences for types of physical activity. A study of sports motivation proved that it is significantly higher among Chinese students, both men and women ($p \leq 0.01$). The data prove the high role of the cultural factor in the formation of sports motivation of students.

Keywords: *level of physical activity, sports motivation, students, physical education universities, Russia, China.*

Introduction. The development of cultural, educational and sports ties between Russia and China creates new opportunities for improving the system of professional training of students at physical education universities in both countries [4].

To create a better learning environment focused on the educational experience of two countries, cross-cultural research is required, since a monocultural approach does not allow identifying cultural differences in the lifestyle of students, their motivational attitudes, personal and professional qualities [2, 3].

Objective of the study was to conduct a comparative assessment of the level of physical activity and sports motivation of students at physical education universities in Russia and China.

Methods and structure of the study. The sample consisted of 96 Russian students (56 women and 40 men) of the Institute of Physical Culture, Sports and Youth Policy (Ural Federal University), average age of respondents 20.1, as well as 127 Chinese students (57 women and 70 men) of the Institute of Physical Culture (Baoding University), average age of respondents 20.3. To determine the level of physical activity (PA), a short version of the International Physical Activity Questionnaire (IPAQ) was used [1]. The questionnaire includes 7 questions regarding the number of days in the week and the amount of time spent in high-intensity physical activity (HIPA), moderate-intensity physical activity (MIPA), as well as walking and time spent sitting. The questionnaire results require a score from 0 to 7 for each question; the higher the score, the higher the level of physical activity. To assess sports motivation, an adapted version of the "Sport motivation scale" questionnaire was used [5], the authors of

the questionnaire consider motives based on complementarity. Using the sports motivation scale, one can determine internal motivation and external regulation, as well as introjected regulation, which reflects students' internal beliefs that arose in them in the process of accepting external demands.

Results of the study and discussion. Tables 1 and 2 present data on the level of physical activity of Chinese and Russian students.

According to the results, it was established that physical activity among students has its own characteristics. Significant differences relate, first of all, to high-intensity physical activity, which is higher among Russian male students ($p \leq 0.01$). It can be noted that if the number of days spent on high-intensity physical activity practically does not differ in the samples, then the amount of time spent on high-intensity physical activity is significantly higher among Russian male students. Russian male students spend on average 60–90 minutes during the day, while Chinese students spend 40–60 minutes. This fact can be explained by the fact that Russian students of physical education universities are more involved than Chinese students in the active training and competitive process, and specifically in competitive sports. In turn, Chinese students of physical education universities engage not only in competitive sports, but also in Chinese sports (Wushu, Baduanjin, Taijiquan, etc.), in which more time is devoted to moderate physical activity.

Table 2 presents the results, which indicate that Russian male students spend more time walking than Chinese male students ($p \leq 0.01$). This fact is associated with the lifestyle of students, the peculiarities of movement during the day to the institute, to training, and home. Chinese students living on a university campus, where academic and sports buildings are

Table 1. Comparison of indicators of high-intensity physical activity and moderate-intensity physical activity in Russian and Chinese male students

Indicators	Chinese students – men n=70	Russian students – men n= 40	Chinese students – men n=70	Russian students – men n= 40
	HIPA	HIPA	MIPA	MIPA
Number of days (days/points)	3,37± 1,68	3,7± 1,69	3,5± 1,99	3,37± 2,27
Number of minutes, hours, (in points)	3,4±1,64	5,57±2,09	3,82±2,41	3,65±2,50
Total score	8,11±3,29	9,30±3,35	7,32±3,51	7,02±4,14
t -criterion	p≤0.01		–	

Legend: HIPA – high-intensity PA, MIPA – moderately intense PA, arithmetic mean (points), SD – standard deviation.

Table 2. Comparison of "Walking" and "Sitting" indicators among Russian and Chinese male students

Indicators	Chinese students – men n=70	Russian students – men n= 40	Chinese students – men n=70	Russian students – men n= 40
	Walking	Walking	Sitting	Sitting
Number of days (days/points)	5,81± 1,98	6,15± 1,68	–	–
Number of minutes, hours, (in points)	2,64±2,29	3,97±2,43	3,48±2,01	3,82±1,76
Total score	8,45±3,21	9,87±3,25	3,48±2,01	3,82±1,76
t -criterion	p≤0.01		–	

Table 3. Comparison of indicators of high-intensity and moderately intense physical activity among Russian and Chinese female students

Indicators	Chinese female students n=57	Russian female students n=58	Chinese female students n=57	Russian female students n=58
	HIPA	HIPA	MIPA	MIPA
Number of days (days/points)	3,35 ± 1,95	3,58± 1,90	3,61± 1,8	3,65± 1,94
Number of minutes, hours, (in points)	3,87±2.29	4,36±2,40	2,85±2,42	3,41±2,33
Total score	7,43±3,74	7,94±3,39	6,25 ±3,69	7,06±3,11
t -criterion	–		–	

Legend: HIPA – high-intensity PA, MIPA – moderately intense PA, arithmetic mean (points), SD – standard deviation.

Table 4. Comparison of "Walking" and "Sitting" indicators among Russian and Chinese female students

Indicators	Chinese female students n=57	Russian female students n=58	Chinese female students n=57	Russian female students n=58
	Walking	Walking	Sitting	Sitting
Number of days (days/points)	5,89±1,74	6,13± 1,41	-	–
Number of minutes, hours, (in points)	2,78±2,32	3,36±2,75	3,35±1,93	3,94±1,82
Total score	8,68±3,34	9,49±3,33	3,35±1,93	3,94±1,82
t -criterion	–		–	

Table 5. Comparison of sports motivation among students of physical education universities in Russia and China

Groups	Respondents	Motivational scales		
		Internal motivation	External regulation	Introjected regulation
Chinese students	men n=70	23,32±5,70	21,86±5,07	21,60±4,67
Russian students	men n= 40	17,05±5,80	12,65±6,50	17,07±6,37
t -criterion		p≤0,01	p≤0,01	p≤0,01
Chinese students	women n= 57	21,96±5,69	20,94±6,39	21,19±5,88
Russian students	women n= 58	15,43±5,57	10,18±5,13	15,34±5,63
t -criterion		p≤0,01	p≤0,01	p≤0,01

located almost on the same territory, spend less time moving around, and therefore spend less time walking. In addition, Chinese male students have in recent years opted to use electric bicycles and mopeds to travel between dormitories, sports and educational institutions, reducing their walking time.

It should be noted that the involvement of students in both countries in the educational process is reflected in the "Sitting" indicator and the data obtained allow us to assert that students spend on average 5-6 hours studying due to lack of physical activity.

The following analysis concerns a comparison of the physical activity of Russian and Chinese female students (Tables 3, 4).

When analyzing the physical activity data of Russian and Chinese female students, we did not find significant differences in the levels of intense and moderate physical activity, which indicates that female students of physical education universities in the two countries, on average, spend the same amount of time on high-intensity physical activity and moderate physical activity. It can be assumed that this is due to the fact that female students of physical education universities are less involved in training and competitive activities than males, and their physical activity is more related to academic activities in sports.

When comparing data on the time devoted to "Walking" and "Sitting," we can conclude that there are no differences between Chinese and Russian female students, as well as between Chinese and Russian male students. These results confirm the similarity in the lifestyle and organization of the educational process of students from different countries.

The second study was aimed at studying the motives for playing sports and physical activity among Russian and Chinese students of physical education universities in Russia and China. The results of the study were analyzed in the same way as in the first study separately in samples of male and female students (Table 5). The Cronbach's reliability coefficient test value was 0.968, which is greater than 0.9, indicating the high quality of the data reliability.

The data reflected in table 5 show that Chinese students, both men and women, are characterized by a higher level of motivation for all types (external, internal, introjected).

Significant differences for each of the motivational orientations were found both among Russian and Chinese male students ($p \leq 0.01$) and Russian and Chinese female students ($p \leq 0.01$). These facts indicate, first of all, cultural differences in the perception of motives for playing sports and physical activity. It can be assumed that Chinese students of physical education universities are more emotionally involved in the process of playing sports and physical activity, while Russian students of physical education universities are more rational about their sports motivation. It is in the motivational attitudes that the phenomenon of Eastern and Western sports culture is manifested, since Eastern sports culture prioritizes psychophysi-

cal self-improvement, while Western culture prioritizes superiority over competitors.

Conclusions. The conducted research proves the important role of the cultural factor in influencing the sports motivation of students at physical education universities in Russia and China; this is expressed in a higher level of sports motivation among Chinese students than among Russian students. At the same time, differences in the level of physical activity of students in both countries are largely associated not with the cultural factor, but with the lifestyle of students and the choice of types of physical activity.

Reference

1. Korotkiy mezhdunarodnyy oprosnik dlya opredeleniya fizicheskoj aktivnosti. Available at: https://online-edu.ranepa.ru/ (date of access: 09.12.2023).
2. Rogaleva L.N., Alharuf A.S., Starikova K.E., Wang Y. Perspektivy razvitiya kross-kulturnyh issledovaniy v oblasti sportivnoy psihologii. Istoriya, sovremennost i innovacii v sportivnoj nauke. Proceedings national scientific-practical conference with international participation. St. Petersburg, 2023. pp. 359-363.
3. Shaohan Ch., Kormanov A.A., Boyarskaya L.A., Leonova E.E. Osobennosti emocionalnogo intellekta u kitayskih i rossijskih studentov-sportsmenov, zanimayushchihsya vostochnymi vidami edinoborstv. Aktualnyye voprosy sportivnoy psikhologii i pedagogiki. 2023. Vol. 3. No. 1. pp. 24-33.
4. Yicong Y., Rogaleva L.N., Yamaletdinova G.A., Burkova A.M. Formirovanie psihologicheskogo blagopoluchiya studentov instituta fizicheskoj kultury v processe osvoeniya kursa «Osnovy tradicionnoy kitayskoy sportivnoy kultury». Teoriya i praktika fizicheskoy kultury. 2023. No.8. pp. 37-39.
5. Mallett C. et al. Sport motivation scale-6 (SMS-6): A revised six-factor sport motivation scale. Psychology of Sport and Exercise. 2007. No. 8. pp. 600-614.