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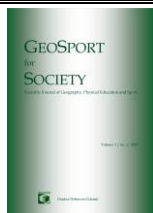
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Recreational activities among students aged 14-18

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Abstract: It is an unfortunate fact that children have less and less free time now because they live a busy life. Several studies confirm that it is extremely important that we do leisure activities which have a positive impact and active leisure activities should come into prominence. Methods: Our study examined the leisure and sports habits of physical education and non-physical education students (N=114). We used a questionnaire, and we also made correlation examinations. The results were analyzed by using SPSS software. Results: The results show 14-18 year old students have an average of 2-3, 3-4 hours of free time, in which both active and passive recreational activities come to the front. 83.3% of respondents do some form of sport, which is not surprising since many are in physical education, but it is also a promising result, because sport has many positive effects. The most popular sports are ball games, especially football. It is not surprising the internet is very popular as a leisure activity among young people. Our results also illustrate that it is worth drawing attention to the right way of spending free time in childhood and that children need to love sports to integrate them into their lives.

Keywords: physical activity, leisure time, priority prevention, healthy lifestyle

Introduction

Today's modern sedentary lifestyle poses serious health problems that need to be solved (Müller-Riemenschneider et al., 2008; Rurik et al., 2016; Müller et al., 2019a; Mills and Hilberg, 2020; Erdely et al., 2020). Increasingly, there is a view that sport and physical activity should become an increasingly important part of our lives (Tătar et al., 2018). Leisure time (Magyar Értelmező Kéziszótár, 1989) in addition to work and our duties, is the time that a person has the freedom to pursue his or her hobbies and favourite activities. Recreation (Borbély et al., 2008), a

culture of leisure time spending, which includes leisure activities. Leisure time refers to the time units in a person's life where there is no obligation, it is free to decide where, how, when and with whom this amount of time is spent.

Leisure activities can be relaxation, creative leisure, culture and physical recreation. Main features of leisure activities: optional, without obligations, personal, give an experience.

Several researches describe the different goals of recreation: The task of leisure activities: refresh the body (Bíró et al., 2019a), education (Herpainé et al., 2019), maintaining, recovering and reproducing the body, health (Bíró et al., 2019b) and ability to work (Balogh, 2019; Balatoni and Kosztin, 2020).

There are many positive effects of recreational sports that are supported by specialized literature (Juhász et al., 2015; Simon et al., 2018; Bendíková et al., 2018).

In children aged 3-6, exercise promotes physical and mental development (Boda et al., 2016; Müller et al., 2017; Szépné and Balatoni, 2018). Exercise has a positive effect on the soul, physical development and integration into society. Sport also teaches many other things, such as endurance, self-sacrifice, fair-play and team work.

Regular physical activity also ensures a healthier life and a better feeling, which results in an improvement in one's own health awareness (Müller and Bácsné, 2018). Increased physical activity is related to better well-being, so it is an important tool for health promotion, which improves the quality of life and lifestyle. Lifestyle is part of recreation, as the leisure and recreational activity that human carries out in the context of person's environment also affects person's lifestyle (Hidvégi et al., 2017). It should be emphasized that the role of the family is decisive in the development of sports habits (Herpainé et al., 2017; Müller et al., 2019b), as the child takes a lot of things from the parent. If a child sees that their parents also take part in sports, support or encourage them to play sports, it is much more likely that regular sports will become a part of their daily lives and become an element of lifestyle.

Over a long period of time, regular exercise has a positive effect on self-esteem and self-confidence, improves the individual's mood and helps to overcome stress. Of course, physical activity includes sports activities, including leisure activities, active elements of recreational activities, as well as various forms of organized sports and competitive sports. A person in good health can perform better, have a more reliable labour, and earn more income. The health status of human resources is appearing as a value in the European Union labour market. Therefore, sports and other recreational activities can be seen as a form of investment that results in reduced health spending. Recreation does not only promote health, but also it has an entertainment function which is important motivation for pursuing recreational activities (Boda et al., 2018a and b; Müller et al., 2019b). However, a recreational activity provides enjoyment, excitement, and entertainment only for the duration of doing it. Among the recreational activities, physical activities outstand, which have become a necessity with the advancement of today's sedentary lifestyle.

Intellectual workers usually do intellectual work, so sports and exercise play more important role in their recreational activities, as a semi-skilled or manual workers who "move" more in their work.

According to the European Sport Charter: children need to be helped into sporting experiences that result in a life-long commitment to physical activity.

In 2015 a U.S. survey studied young people (aged 15-19) and the older generation (over 75) how much time they spend on sports and leisure activities on an average day. The data is depressing. The younger age group spend most of their free time on watching TV or in front of a computer, so they prefer a sedentary lifestyle. They usually spend only 0.6 hours a day on sports or recreation. In my opinion this is very little because exercises and active lifestyle play a very important role at this age.

If a child at this age comes to like different forms of movement, they will find ways to play different forms of sport because they will find joy in it and it will become natural for them throughout their lives, so they will be happy to do it in a recreational way. They can integrate into their lifestyle and engage in these leisure activities for the rest of their lives, which can help them maintain health and develop health-conscious behaviors. Even after finishing school, they can continue to pursue these leisure activities that can help them to stay and live healthy.

Methodology

We also used Pálincás's (2009) older research for our article. We conducted the questionnaire survey at the Széchenyi István Secondary Grammar School in Szolnok. Széchenyi István Secondary Grammar School, like most physical education schools, believes that sports, physical activity and well-organized leisure time play a very important role in students' life. There are 62 students in the physical education side and 52 study in the non-physical education side, so we can see the dominance of students in the physical education department. Students in the physical education department must play sports regularly and participate in sports events.

Regular exercise and sport have a key role in maintaining health, developing a culture of movement, spending a useful leisure time, developing community behavior, shaping personality and setting an example. In our opinion, during adolescence, should be placed on intensive sports that require endurance and some forms of exercise that require technical skills, because these can promote the growth of physical activity in adulthood.

The child loves different forms of movement as an adolescent, and they are integrated into their daily lives, so they will be happy to choose these movements to spend their free time outside of school. After finishing school, they can continue to do these leisure activities that can help them stay healthy. The role of sport in the development of the person is highly characteristic, it is the basis of belonging to the fellowship.

Our research aimed to examine the typical recreational activities of female and male students. Our additional goal was to compare the students' place of living. We tried to explore how they choose recreational activity beside their place of living.

The first table (Table 1) illustrates the demographic data. 46.5% of the respondents are men and 53.5% are women. 44.7% of the examined students are in the 9th grade, 30.7% in the 10th grade, 24.6% in the 11th grade. Analyzing our

respondents' domicile we see that most of the students live in the county town 40.4%, 33.3% live in a city and finally 26.7% live in a village.

Table 1. Distribution of respondents by gender, grade and habitation.

Respondent	Gender		Year			Habitation		
	Man	Woman	9th grade	10th grade	11th grade	Village	City	County town
Person	53	61	51	35	28	30	38	46
Percentage	46,5%	53,5%	44,7%	30,7%	24,6%	26,7%	33,3%	40,4%

Respondents filled in our questionnaire on paper, and it was voluntary (N=114). We downloaded the results in Excel format and in addition to basic statistical methods, we also analyzed correlations.

Results and discussion

Respondents' free time is very variable (Table 2). Nobody has more than 6 hours free time a day. We think this is good because students are probably engaged in some kind of sport or learning activity. The majority of respondents have 1-2 hours 17,5%, 2-3 hours 31,6%, 3-4 hours 31,6% and 4-5 hours 13,2% of free time. It is surprising 6,1% have 5-6 hours of free time.

Table 2. Respondents' free time in hours.

Amount of free time	Respondent (person)	Percentage
1-2 hours	20	17,5%
2-3 hours	36	31,6%
3-4 hours	36	31,6%
4-5 hours	15	13,2%
5-6 hours	7	6,1%
more than 6 hours	0	0,0%

In our research, we asked how much money the respondents spend on their leisure activities. 64% of the respondents spend less than 10.000 HUF for their leisure activity and 28,1% spend 10-20.000 HUF (Table 3). We can see nearly 92% of the students spend 0-20.000 HUF on their leisure activities and hobbies. This shows that they look for more cost-effective supply opportunities in the case of sports and participation in sports events.

Table 3. Respondents' spending habits on their free time.

Amount of money	Respondent (person)	Percentage
less than 10.000 HUF (less than 26,35 EUR)	73	64,0%
10.000-20.000 HUF	32	28,1%

(26,35-52,71 EUR)		
20.000-30.000 HUF (52,71-79,06 EUR)	6	5,3%
more than 30.000 HUF (more than 79,06 EUR)	3	2,6%

We also wanted to know when they started to play sports.

All in all, 83,3% play sports (Table 4). This result is encouraging if students develop a need for regular exercise and integrate it into their lifestyle, they will enjoy sports and recreational activities in their free time. Most of the students 51,8% have been playing sports more than 5 years. They are students in physical education side and they will probably want to work in the field of sports as adults, or they may want to be athletes.

Table 4. Respondents starting to do sport.

Number of years of sport	Respondent (person)	Percentage
less than 1 year	5	4,4%
1-2 years	14	12,3%
3-5 years	17	14,9%
more than 5 years	59	51,8%
not doing sports	19	16,6%

"What sport do you do regularly?" We did not give the students an alternative to answer this question, it was an open question, the students could compose it themselves, thus so many sports were mentioned. The most popular sport was football, this was marked by 21,1%, then the athletics 7,9%. Among the students, there were those who play volleyball, dance, or do some martial arts. (judo, karate, aikido).

The majority of students play sports daily, this category was chosen by 29,8%. It can be said that the majority of students, if do not do any sport daily, but they do some kind of sports 2-5 times a week 48,3%. This is good because it can be observed more than half of the students play or do something, even if not every day, but on a weekly basis. We think it's a promising result.

56,1% usually go for do sports with their friends and only 17,5% go alone. This result is related to the age specificity of the age group, according to young people aged 14-18 are influenced by the group of friends and may also determine their way of life. Several literature emphasize that exercise in a company, in a fellowship is becoming increasingly popular (Kinczel et al., 2020a; Laoues-Czibalmos et al., 2019a; Boda et al., 2019).

Our research also looked at leisure activities. The answers show that 64% of students play sports in their free time and 54.4% participate in sports events as spectator (passively) or as athlete (actively). We can see that the motivation of an

active lifestyle dominates among high school students, as their most typical leisure activity is related to sports. They are happy to do sports after school, school sports and activities. The effect of exercising with the forces of nature (sun, wind, temperature etc.) is favorable, increasing a person's bearing capacity. For example: go on a trip, motorcycling, gardening, do sport outside; wintersports, running, hunting, fishing, horse riding or cycling.

However, in addition to the active lifestyle, leisure activities which are in the „relaxation” category, can also be observed, TV, DVD, watching movies was indicated by 82.5% of students and 83.3% by the Internet (Table 5). 70.2% also marked the category of party with friends, which may come from their age and dormitory life. Areas of culture were not popular leisure activities: reading was marked by 24.6% of students and cinema was 31.6%. Only 7.9% like theater performances and 7% go to concerts.

Of the outdoor activities, motorcycling was the most popular, 13,2% chose this activity. We think few students could choose it because the quality of the roads is not conducive to this activity, there are road accidents too and motorbiking is quite expensive. Few students are interested in fishing, DIY, gardening and crafts.

Table 5. Recreational sports activities.

Recreational activities	Respondent (person)	Percentage (%)
Reading	28	24,6
TV, DVD, Movies	94	82,5
Cinema	36	31,6
Theater	9	7,9
Concert	8	7
Cultural home program	6	5,3
Participation in a sporting event	62	54,4
Gardening	8	7
DIY	9	7,9
Fishing	13	11,4
Music	22	19,3
Crafts	6	5,3
Motorcycling	15	13,2
Internet	95	83,3
Party with friends	80	70,2
Trip	28	24,6
Sport	73	64

Table 6 illustrates the results of the association relation.

Table 6. Gender and place of living differences in recreational activities (Person Chi-squared test)

Typical recreational activities	Respondent (person)			Respondent's place of living (person)			
	Female	Male	<i>p</i>	Village, town	City	County town	<i>p</i>
Internet	45	50	<0,05	28	30	37	<0,05
TV, DVD, film	53	41	<0,05	24	31	39	<0,05
Party with friends	48	32	<0,05	19	30	31	<0,05
Do Sport	35	38	<0,05	12	26	35	<0,05
Participation in a sporting event	30	32	<0,05	11	24	27	<0,05

Students, who live in the county town or in a town close to Szolnok, spend more time using the internet than children who live in a village. 83,3% chose surfing the Internet as a typical recreational activity. This high number is not surprising, because various social networking sites, electronic mail portals and chat sites are becoming more widespread and popular. Children make new relationships, get to know new people and chat with friends or classmates via Internet. 50 of the men and 45 of the women marked this category so there is no significant gender difference in this area, both of them like it.

A total of 73 people chose sport category, of this 12 students live in villages or smaller towns, and 61 people live in cities or county town. This is probably the cause of the environment of the urban population is more “motorized”, so daily activities and schooling requires less physical activity. Students who live in a village often have a lack of gardening, animal husbandry and public transport, so this is mean that villagers do more effort and more exercise during their daily lives. Thus, they prefer to choose some relaxing recreational activity after physical work. There are many more sports opportunities in the city, more and more sports associations and student sports groups are being formed, which help to improve the conditions for leisure sports opportunities.

A total of 62 students chose to participate in the sporting event as a typical recreational activity. This is closely related to sports, as we think students, who also play something, are willing to take part in a sporting event, so these two follow from each other. It was marked by 11 of the rural students and 51 of the urban students. There are many more sporting events in the cities, so there are more opportunities to participate in, than in the village and there are also sports associations in the cities that also promote sport.

There is no significant difference in the recreational activities of men and women.

Football is one of the most common sports for boys, and for girls the ball games are the most common sports. The school and the sports association in the village have facilities for sports, but these institutions do not have an indoor gym, only a court for football, handball, or basketball, young people, who want to do some sport, will enjoy these sports and do. So behind the reasons, opportunity is the key because it orientates their choice. It is easier to choose for young people in the city because there are more institutions (fitness clubs, gyms, aerobics rooms, indoor tennis courts, swimming pools etc.) and this increases the supply.

Conclusions

A healthy lifestyle is part of spending our free time properly and usefully. It is important to exercise a lot, be in the fresh air, take advantage of the positive effects of our natural environment (sunshine, air, water), do leisure activities and take time and care to relax. It is also important to relax actively, not to sit in front of the TV or computer too much.

The domestic and foreign experts have the same opinion that a growing child and young person need an hour to exercise a day, while an adult needs 30-45 minutes to do some sport at least three times a week. Many people don't play sports because they don't have any money for it, so they find it too expensive. There are many sports that can be played in nature, outdoors, for free and without any restrictions. The role of sports in nature is growing and growing, because most of them are not age-related, they do not require special physical abilities, which means that everybody can do them whenever they want to. You can walk, hike, ride a bike, ski in snow etc.; they do not need any special preparation. There are health and life-saving sports such as hiking, jogging or water sports. Everybody can do them in young age or old age as well.

We must also see that there are no losers in natural sports, only there are winners. During skiing, jogging, hiking, every hour a person spends in nature and outdoors, will be richer with a colorful palette of experiences provided by the environment and activities.

Moreover, we have to mention martial arts too. The impact of martial arts on health and lifestyle is also significant. Fighting simulates a life situation, so it prepares you for everyday life, but here you can do it without a stake, and in the process you develop positive personality traits such as victory, endurance and fight. Borbély et al. (2008) highlight the role of martial arts in shaping lifestyles.

Our results are consistent with other literature (Kinczel et al., 2020b and c; Boda et al., 2019; Laoues-Czimbalmos et al., 2019b), which also illustrate that passive recreational activities (internet, TV, DVD, watching movies) are very popular. Fortunately, it is encouraging that more people play sports, but our research draws attention to need to introduce leisure sports into the lives of our young people, as it has many beneficial effects.

It is important to provide as many opportunities as possible for children to participate in sport, and this means providing appropriate facilities and programmes, as physical activity improves people's quality of life (Devita and Müller, 2020).

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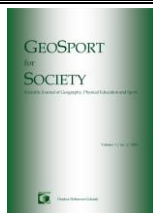
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Analysis of sports habits and their relations to a healthy lifestyle for young people aged 11-14

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Abstract: The aim of the study is to present the health behavior of Hungarian youth aged 11-14. During the research, we analyzed primary school students' relation to regular physical activity and their knowledge about healthy lifestyle. The aim of our research was to explore the health influencing habits of 11 and 14 year olds; we focused on learning about young people's relation to regular exercise, and attitude toward a healthy lifestyle, the emergence of regular physical activity in everyday life, the impact of parents' sports habits on children, and discovering the connection between young people's health-conscious attitudes and sports habits. To explore the research questions and verify the hypotheses, we conducted a questionnaire among the surveyed age group. Using and analyzing the responses obtained during the research, we found that there are favorable data showing that a process has started, but we still have a long way to go. The greatest problem with children's current lifestyle is the lack of conscious behavior. In many cases, they have adequate theoretical knowledge, but their conduct does not match their beliefs.

Keywords: healthy lifestyle, regular exercise, healthy eating, adolescence, analysis

Introduction

In Hungary, the development, awareness, and importance of a healthy lifestyle play a key role in people's everyday lives, but the actual health-conscious behavior of the population cannot be considered appropriate in all cases. Obesity is now an epidemic coupled with many adverse consequences. Based on the 2017 survey data of the Hungarian Central Statistical Office on health and children's health, it can be clearly established that more than half of the adult population in Hungary is overweight (Central Statistical Office, 2018). Unfortunately, in addition to adults, this condition also affects young children. Obesity in early childhood or adolescence

is a process that is difficult to stop and even more difficult to reverse (Erdely et al., 2020). The problem of childhood obesity and its increasing occurrence can be observed all over the world (Janssen and Lebranc, 2010). The number of overweight or obese children in the European Union exceeds 12 million (Anderson and Butcher, 2006). The number of overweight people is growing by 400,000 a year, while the number of obese children is growing by 85,000 a year. In Hungary, every fourth girl and every fifth boy is overweight or obese. An increase in obesity can be observed between the ages of 3 and 7, so obesity that begins in early childhood is a significant risk factor for adult obesity (Martos, 2012).

Developing a healthy lifestyle and exercising regularly play an important role in preventing obesity (Miles, 2007). The first step in the process of developing a healthy lifestyle is the implementation of a healthy diet, which fundamentally determines and influences our lives, but also our long-term health (Falus, 2015).

Another important component is exercise, namely the maintenance of our body (Falus, 2015). Regular exercise has a preventative effect in both childhood and adulthood. Furthermore, vigorous physical activity also has a positive effect on mental health (Charles and Robert, 1996). Last but not least, we simply feel good while engaging in sports. Physically active young people who exercise regularly are healthier and have better psychosocial and mental health than their non-athlete counterparts (Fintor and Szabó, 2014). In addition, sport also contributes to effective intellectual development. The results of follow-up and experimental research by Trudeau and Shephard (2008) have found that increasing physical activity does not reduce the school performance of primary school children.

Unfortunately, poor habits, poor nutrition, sedentary lifestyles, and smoking, as well as other harmful passions, still lead to serious illnesses and premature deaths today. Obesity and all related diseases (hypertension, diabetes, cardiovascular disease) are considered common diseases (Maddock et al., 1999). The topic of a healthy lifestyle is receiving more and more attention in Hungary, but its implementation in practice is still lagging behind. Both the individual and professionals have an important role to play in turning this around (Kinczel et al., 2020).

Education for a healthy lifestyle, healthy eating (Eves et al., 1994), and the exercise and love of sports should start at the earliest age. It is of utmost importance that healthy lifestyle, healthy diet and regular exercise be the principle of the next generation growing up. To achieve this, a supportive environment and a family background cooperating with the educational institutions are needed (Hídvégi et al., 2015).

Materials and Methods

To understand the topic more thoroughly we conducted both primary and secondary research. Our main goal was to conduct quantitative research. To verify the hypotheses, in 2020 we conducted a survey among the 11-14 age group. The questionnaire involved 501 primary school children aged 11-14 from eight primary

schools in Hajdú-Bihar County. The response rate was 83.5%. 254 boys (51%) and 247 girls (49%) participated in the completion of the questionnaire (Table 1).

Table 1. Number of research participants by age and sex (N = 501)

Age (years)	Boys (%)	Girls (%)	Total (%)
11	9,59	6,98	16,57
12	9,38	8,78	18,16
13	12,18	13,57	25,75
14	19,56	19,96	39,52

The first set of questions in the compiled questionnaire involved demographic data that provided information about the gender and age of the respondent, helping to accurately evaluate the responses. The second group of questions included inquiries about the sports habits of the respondent, where we asked about, among other things, the frequency of sports, the location of sports, and how long the respondent has been engaged in regular sports activities. We were also curious about where sport, as a leisure activity, is situated in the life of the participant; how he/she relates to regular exercise; does s/he play sports with the parents; whether s/he likes school physical education classes and how important s/he considers physical education in school. The queries of the third group of questions focused on the healthy lifestyle and eating habits. These queries surveyed respondents' health awareness and attitude toward a healthy lifestyle, and there were questions about eating habits as well. During our research, we also wanted to map the habits of the respondent regarding watching TV and using smart devices (Table 2).

Table 2. Focal points of the research

Physical activity	Health behavior
Role of regular exercise	Eating habits
Frequency of sports	Healthy, proper nutrition
Interaction between sports and well-being	Consumption of soft drinks, confectionery, fruit and dairy products
Vision for sport	Visiting fast food restaurants
Joint exercise with parents	Composition and appearance of food
Love of physical education classes	Screen usage
Workout	

Results and discussion

In the first part of the questionnaire, we assessed the means and frequency of physical activity in the daily life of 11–14-year-olds, and the importance of physical activity in maintaining their health.

Based on the answers it can be concluded that almost 90% of the surveyed age group (447 people) consider the role of regular physical activity to be important and even very important to maintain their health. The proportion of students (85.6%, 429 people) who also consider it important to exercise and play sports regularly to maintain their health is slightly lower. It is encouraging that nearly 90% of those surveyed believe that regular exercise is key to maintaining good health. But it is thought-provoking that we are already losing 4% here (18 people), who, although

aware of the importance of daily exercise, consider engaging in sports regularly no longer really important (Figure 1).

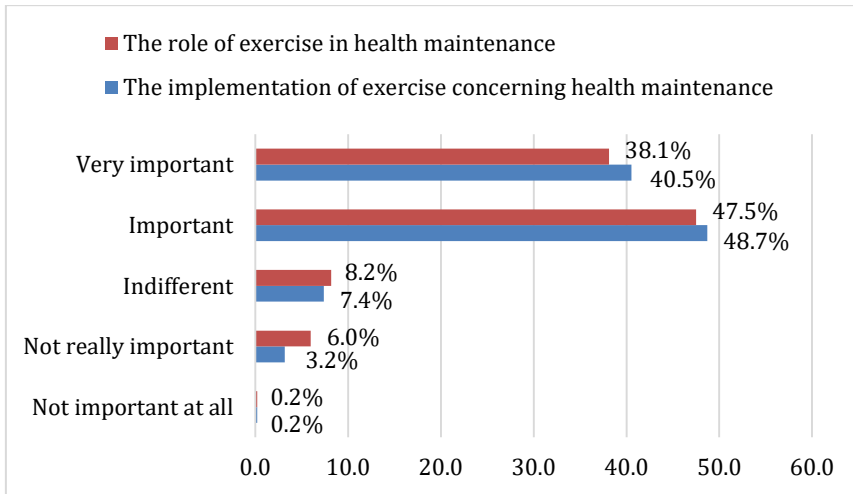


Figure 1. The role of exercise in maintaining health

The responses received reflect that the vision of young people completing the questionnaire is not very positive. Analyzing Figure 2, it can be concluded that almost 4% of the respondents (19 people) already believe that regular exercise will not be a part of their daily life in adulthood, however, 22.5% (113 people) still seem insecure, namely they can move in either direction.

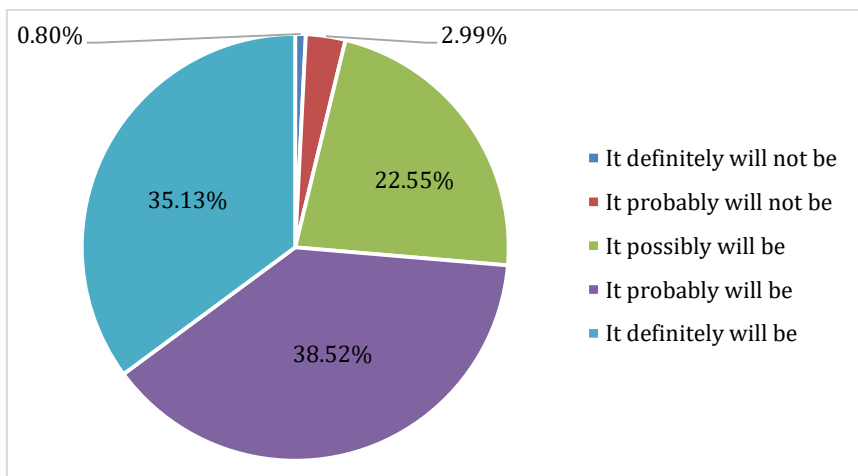


Figure 2. The role of exercise in adulthood – vision

It can be concluded that our own results are in line with the data obtained from the Hungarian HBSC survey (2018) and the European Commission’s Special Eurobarometer 472 survey (2017), which predict that regular exercise in this age

group will most likely not be included in their lives. The Hungarian results of the HBSC survey in 2018 also highlighted the fact that only 18% of adolescents (11-17 years old) exercise daily (Német et al., 2019), as well as according to the results of the European Commission's Special Eurobarometer 472 survey (2017), 53% of the Hungarian population do not play sports at all. Only 9% of respondents said they participate in sport activities regularly. These results confirm the sad fact that as the Hungarians age they move less and less, the proportion of regular athletes is very low.

Examining the sports habits of upper secondary students further, we found that nearly 68% (340 people) of the respondents attend training regularly, so 32% (161 people) limit their sports activities to school physical education classes only. Children start playing sports at an average age of 7.2 (Figure 3). This age almost coincides with the beginning of primary school education.

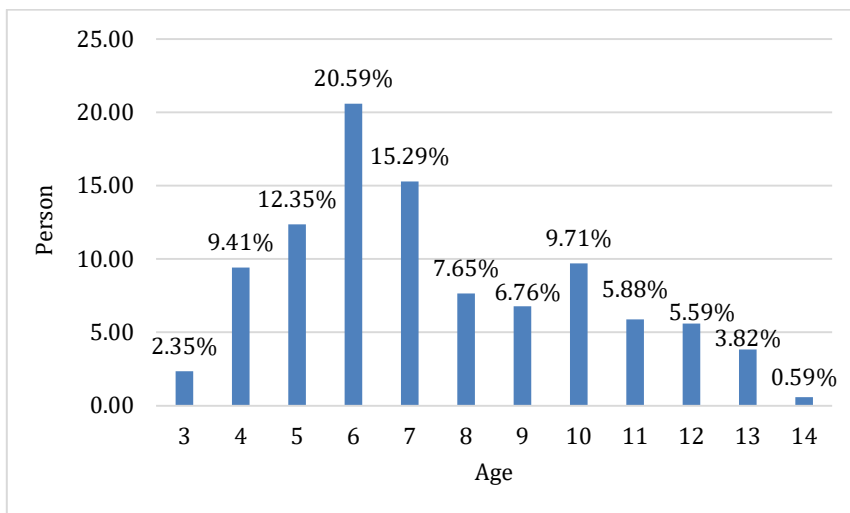


Figure 3. Start of attending trainings

The responses to the survey showed that those who like to play sports are happy to try several venues (gym, swimming pool, ice rink, community sports field) as well as several kinds of sports. Based on the results, 53.7% of the respondents (269 people) used to play sports and exercise together with their parents, 64.7% of the respondents (174 people) spend their free time together actively once a week (mostly cycling, running, badminton) and almost 5% (13 people) play sports more than three times a week with their parents (Figure 4). Examining sports habits and good family examples, we found that children who see good parental example and are used to playing sports together are more likely to attend trainings, meaning that good examples have a positive effect on children's daily exercise habits.

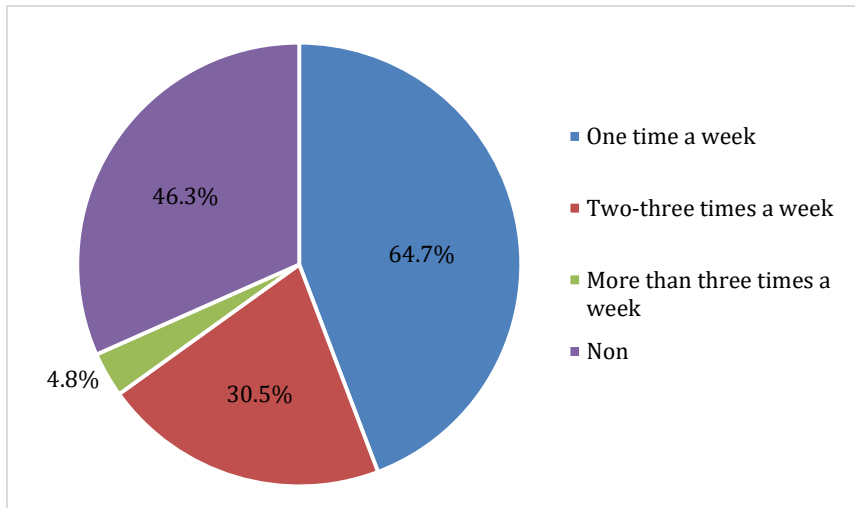


Figure 4. Joint sports with parents

Examining the effect of sport and regular and intense exercise on well-being, a significant majority of the respondents (84%, 420 people) say that active exercise influences well-being, while 8.4% (42 people) stated that the effect of exercise on well-being is not significant. 7.8% (39 people) of the respondents expressed a neutral opinion about this issue.

The answers to the question why exercise and sport are important for young people and what motivates them to be physically active provide interesting feedback. Several of the predefined options could be selected. Analyzing the data in Figure 5, most respondents (66%, 331 people) play sports regularly for their health. Slightly fewer of them (44%, 220 people) want to look better. These data could mean that the influence of the media and compliance with appearances play a key role in the lives of Hungarian youth. 35% of respondents (175 people) said that they considered physical activity to be important for better well-being, and 22% of them (112 people) wanted to lose weight through regular sports. According to them, more than 1/5 of the survey participants feel overweight or obese. This answer is thought-provoking, as these are young people aged 11-14. Only 20% of the respondents (101 people) indicated that they play sports willingly because of their friends, although friendship and a well-functioning, cohesive team spirit and valuable leisure time spent together are also important during both team sports and leisure sports activities. The proportion of respondents (20.5%, 103 people) for whom sport is important because of their athlete role models was similar. Only 1.8% (9 people) answered that regular and intense exercise is not important to them.

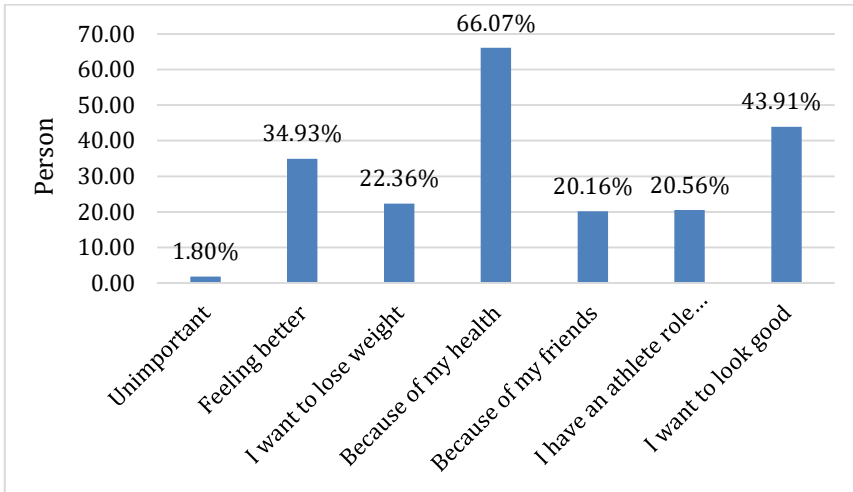


Figure 5. Exercise motivation

In the second part of the questionnaire, we assessed how healthy lifestyles appear in the daily lives of adolescents aged 11-14 and what knowledge they have in the field of proper nutrition.

The results showed that 87.2% of the respondents (437 people) consider health-conscious behavior important (nutrition, exercise, lifestyle), but 6.4% (32 people) do not consider it important. There was also 6.4% (32 people) of those who did not know what the concept of health-conscious behavior meant (Figure 6).

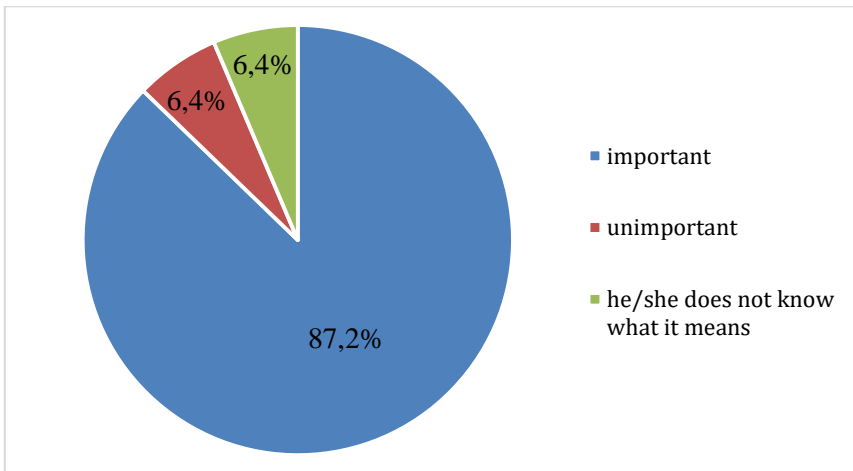


Figure 6. Assessment of health-conscious behavior

Examining the responses of young people participating in the survey further, we found that a significant proportion of respondents (83%, 416 people) consider both regular exercise and proper nutrition to be important to maintain health. 6.4% (32 people) of the respondents consider sports to be more important, while 9.2% (46 people) consider proper nutrition to be more important, there's a very low but

remarkable number of respondents (1.4%, 7 people) consider neither of them important for maintaining our health.

When asked about the composition of a healthy diet, 70.8% of respondents (355 people) have adequate knowledge about which foods contain all the nutrients that are essential for the human body. However, there was a high proportion (29.1%, 146 people) who were unaware of what foods were needed to eat a healthy diet and which foods were not part of a proper diet.

More than half of the young people surveyed (64.9%, 325 people) think that they pay attention to proper nutrition, while 35.1% (176 people) do not pay attention to this.

Based on the results, young people seem to be aware of the principles of good nutrition in theory, but do not or only partially incorporate this into their daily habits.

During the research, we addressed the consumption habits of healthy and unhealthy foods separately. It can be established from the answers that the vast majority of the respondents (91%, 457 people) consume chips, sweets and carbonated soft drinks on a weekly basis. 11% (55 people) of these respondents consume only non-essential foods containing excess calories that are not part of health-conscious behavior at all.

Consumption of fast food that does not belong to the healthy category is also present in the diet of the studied age group almost daily / weekly. 17% (87 people) of the respondents said they never go to fast food restaurants, while 37% (186 people) of the survey visit these establishments on a weekly basis, which are very popular among young people.

According to WHO, the recommended daily intake of fruit and vegetables is 400 grams (WHO, 2003), which corresponds to the amount of 2 average-size apples. According to a 2016 survey by the Central Statistical Office, Hungarians consume only 262 grams of vegetables and fruits per person per day (Central Statistical Office, 2018). Based on the research results of Bíró (2018), this unfavorable result can also be observed among adolescents, whose fruit consumption is well below the recommended amount for the given age group.

This was also confirmed by the results of our own research, according to which the participants in the survey consume fruit, but not in sufficient quantities. The proportion of those who said they never eat fruit is very low, only 2% (8 people). The proportion of daily fruit-consumers is 45% (227 people). 53% of respondents (266 people) eat fruit several days a week, but not every day.

Examining the eating habits further, we found that 53% (267 people) of the studied age group consume dairy products daily, however, it appears in the diet of 44% (219 people) only for a maximum of 4 days per week.

The results revealed that both the consumption of fruit and dairy products lags significantly behind the amount of fruit, milk, and dairy products to be consumed on a daily basis recommended by experts.

Based on the answers to the four questions examined above, we found that the eating habits of the studied adolescents were less than desirable. At this age,

special attention should be paid to the development of good eating habits, as poor eating habits (excessive energy intake, snacks, fast food, low consumption of fruit and vegetables, low consumption of milk and dairy products) can easily be embedded and this can form a basis for subsequent improper adult lifestyles, unhealthy diets and consequent obesity and illness.

The answers to the question about the use of smart devices did not surprise us (Figure 7). It is clear that almost all children use smart devices on a daily basis. The weekend use of more than 2 hours is a notable value, 76% of respondents (380 people) gave this answer.

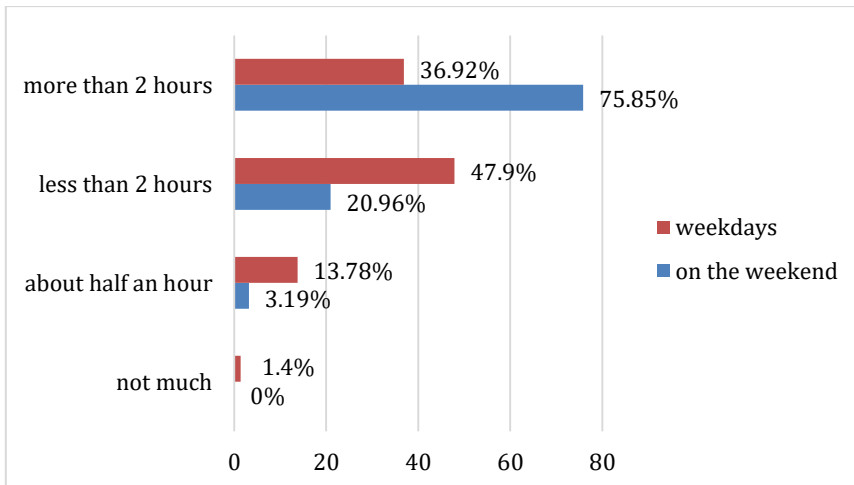


Figure 7. Screen usage

Conclusions and recommendations

The aim of our study was to get to know the health-conscious behavior of the 11–14-year-olds, with special regard to sports habits, healthy lifestyle and eating habits. With the help of these results, we can get an idea of the attitude of the examined age group. We also focus on examining the connection between young people's health-conscious attitudes and their sports habits, and the impact of parental example on children's sports habits.

The study concludes that adolescents are aware of the importance of health-conscious behaviors, but routine and family patterns guide their actions in their daily lives rather than purposeful health-conscious behaviors. On the positive side, regular exercise plays an important role in the lives of young people, but at the same time young people's health-conscious behavior is very deficient and superficial. In many cases, although they have theoretical information and knowledge, their actual behavior does not always match what they believe. Based on our results, we have found that the biggest problem is the lack of conscious behavior in children's current lifestyles. Many are unaware of the health effects of their lifestyle. During our research, we also found favorable results, which suggest that a progress has already started, but we are still at the beginning of the road. Professionals and teachers have a great responsibility to create a healthy society in Hungary. Effective and comprehensive programs should raise people's awareness about the health benefits

of a proper lifestyle. We also consider it important to change the individual approach in the right direction, considering the specifics of the target group. It is prudent to start shaping attitudes in childhood in such a way that the new, positive outlook and attitude on life becomes second nature in adulthood.

Summary

In our study, we sought to answer the question of how the studied age group thinks about healthy lifestyle, regular physical activity and what they do to make it appear in their everyday life. Both positive and negative results were observed in the lifestyle and health of young people.

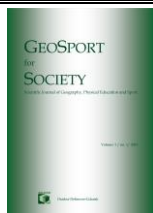
The favorable data have highlighted that a progress has already begun, but we still have a long way to go and many tasks to solve for a healthy society to develop in Hungary.

The development of health-conscious behavior, education for a healthy lifestyle, healthy eating and exercise, and the love of sport must begin at an early age. It is of utmost importance that a healthy lifestyle and healthy eating be the principle of the next generations. To achieve this, a supportive environment and a family background cooperating with educational institutions are needed.

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Aspects of the practice of folk dance in Bihor Region - Tradition and perspectives

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Abstract: Romanian folk dances are a wealth of generations that we owe to preserve, protect and leave our inheritance to our descendants as a proof of our identity and history. By practicing dance, the customs and traditions of the people are learned; young people develop harmoniously due to the various movements in which the dances are composed. Romania has a wide range of games, dances and costumes inherited from tradition, perpetuated through repertoire and ethnography, which convinced us to address and highlight the important role of the traditions, folk dances in Bihor County, the beneficial effect that they have in the personal development of the dancers. The proposed research methodology for the study addresses methods such as the survey method by applying a questionnaire and the statistical-mathematical method. The results highlight the importance of folk dances first present in the family and the fact that passion is the main motivation of dancers that drives them to practice folk dance. It is necessary to give children the opportunity to make direct contact with the sources of popular creation such as dance, music, customs and folk costume, to create optimal conditions for learning our folk dances, the priceless treasure of our people.

Keywords: folk dance, tradition, Bihor region

Introduction

The Romanian Folklore, through its popular dances, is a real source of artistic tastes, it strengthens respect and confidence in the creative power of the Romanian

people, and the feeling of national pride and dignity in children is educated and deepened. The feeling of national unity is enhanced by the knowledge of folk creations throughout the country, even those of the cohabiting nationalities, the sense of collaboration and twinning of peoples is enriched and strengthened (Caciora et al., 2021a and b; Ilieș et al., 2021; Herman et al., 2020). On the other hand, dance is considered an activity that involves coordinating movements with music, as well as brain activation because it is constantly necessary to learn and remember new steps. Dance as a musical-kinetics skill, requires the coordination of body movements with rhythmic stimuli, developing the adaptability of the movement (Douka et al., 2019; Cipu, 2004; Zderciuc et al., 1964).

Many studies investigate the impact of various forms of traditional dance on health profile, mobility, and postural balance in elderly subjects (Hofgaard et al., 2019; Noopud et al., 2019; Jung et al., 2018; Erdely et al., 2020).

Since ancient times, dance has been used in the individual or collective as treatment of some diseases, including epilepsy and movement disorders (dyskinesia, chorea etc). Dionysia in Ancient Greece, St. Vitus dance in the Middle Age, tarantism and other traditional dances of southern Italy and of non-Western countries might be credited as curative rituals of these neurological and psychiatric conditions. (Sironi and Riva, 2015) or had improved blood vessel functionality and cerebral hemodynamic at high altitudes. (Li et al., 2020), or improves cardiorespiratory endurance in menopausal women (Janyacharoen et al., 2015).

Bihor folklore has been a research object for a very long time starting with Dimitrie Meci, Miron Pompiliu, G. Alexici (in the 19th century), Bela Bartok, Constantin Brailoiu, Ilarion Cocîșiu and continued with Ioan Bradu. Ioan Chira, Stelian Vasilescu, Rosu Titus and many others. The monumental paper *Musical Folklore in Bihor*, which appeared in 1974, by university professor Traian Mîrza, was recently honored by the R.S.R. Academy. Notable are the many studies of the Bihor customs made by Maria Bocse. Constantin Costea is the author of two volumes that treat the choreographic folklore in Bihor. In recent years, a series of works of great interest for the knowledge of the popular culture in the Criș Rivers Country, and especially Biharea, a book of studies and materials of ethnology and art, from which two volumes have so far emerged (Stoica and Doagă, 1977).

The promotion of popular culture must include two important aspects. On the one hand, the study and revitalization of what is called the passive fund of popular art and folklore (musical, literary, choreographic, etc.), that is, of those traditions that live only in the crates of the food, in the induced or collective memory (Godea, 1997).

Many aspects of popular art are present in contemporary times. In Bihor, many potters, chests-makers, coats-makers, braiders in weeds are still working. Women in many villages continue to weave respecting their traditional character. In every day's life a number of customs are practiced, a number of customs are observed, some of which are brought to stage, in shows, contests, festivals (Pop, 1969). All together constitute what is called the active fund of the Bihor folk culture. Lioara or Feleaga, a spring habit that remained old in the villages in the upper Black Crisul basin, was at some point on the brink of extinction (Marcu and Brata, 1978).

We have approached this topic because folk dances have been present in earthly life since the time; by practicing it we learn the tradition and customs of our own people and help harmonious physical development through the various movements and elements that make up a dance.

Materials and Methods

The aim is to present a picture of the popular dances in Bihor County and to maintain the traditions in order to transmit the folk culture to the next generations.

Research objectives: presentation of the Romanian folk dance and play presented by the folk ensembles, presentation of the Romanian folk costumes present in the present ensembles, highlighting current assemblies and number of participants today, analyzing the degree of family influence or personal decision on the decision to practice folk dance, motivation and importance of popular dance for instructors.

Through this paper we aim to highlight the importance of the traditions and the role of folk dance in Bihor County, as well as the benefits they have on the personal development of the dancers.

The present paper is based on the hypothesis that the participation of children, young people and adults in free-time activities - folk dance, can contribute to the preservation of customs and the transmission of traditions in the Bihor area to future generations.

In order to carry out the study, a number of 19 popular folk-dance instructors from Bihor County were included: 10 instructors conducting assemblies from Oradea, one from Marghita, one from Ștei, one from Aleșd, one from Salonta, one from Budureasa village, one from Hidișelul de Sus village, one from Vadu Crișului commune, one from Borod village, one from Cuzap village.

The research methods used in the paper were as follows: the method of studying the bibliographic materials, the survey method by applying a questionnaire and statistic-mathematical method.

Results

The analysis of the recorded data highlighted the relevant aspect of the popular dances in Bihor. After evaluating the answers given by popular dance dictionaries, the statistics show the following:

The most famous ensemble of popular dances in Oradea is the Crișana Professionals ensemble. Statistics show that 58% of those interviewed know that this ensemble is the most famous, well-known.

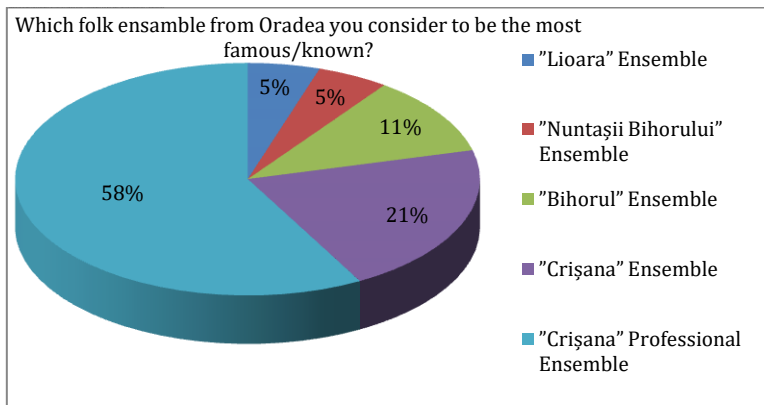


Figure 1. Ensembles in Oradea

Within the ensemble, 58% of folk-dance instructors have the quality of instructor, and 42% have the quality of both instructor and dancer.

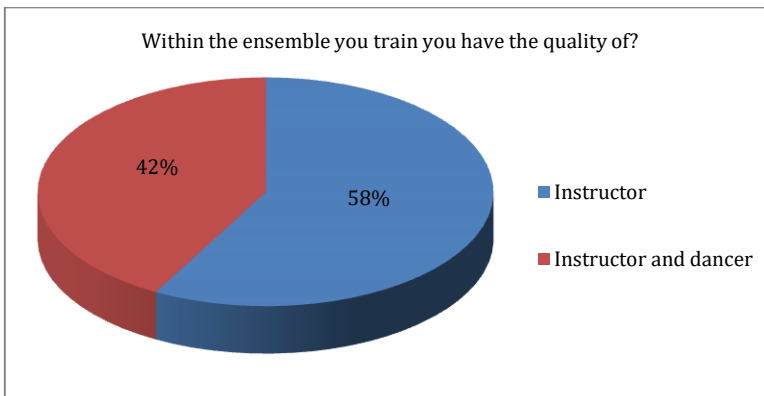


Figure 2. The quality of the trainer within the ensemble

Most of the current instructors have come to practice popular dances on their own initiative, 58% confirm this, 37% have been counseled by parents and 5% are friends.

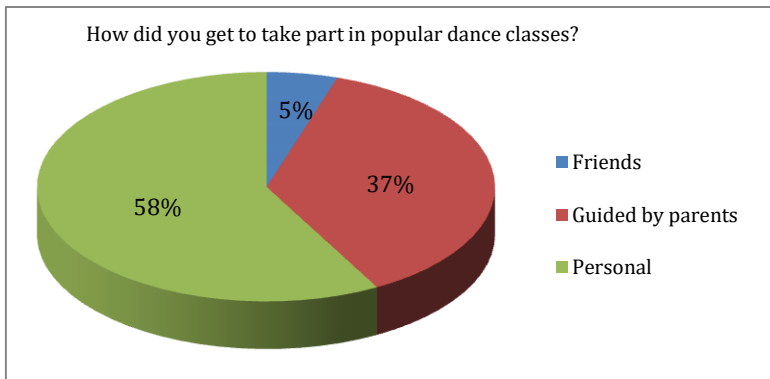


Figure 3. The way the instructors got involved in popular dance classes

Statistics show that most of the interviewed instructors met the popular dance in the family, the percentage being of 74%, which proves that the Romanian folk dance is present in the life of the people from the times.

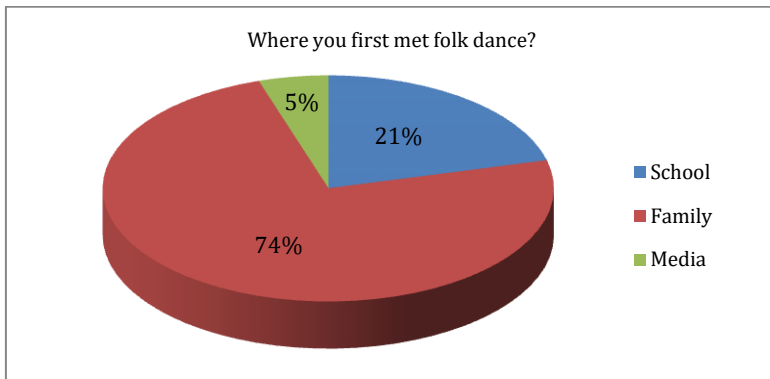


Figure 4. First contact with popular dance

The motivation of instructors to practice folk dances is to lead the tradition further 53% say this and 47% practice this dance of passion. At the same time for 58% of the instructors, the popular dance represents the greatest passion.

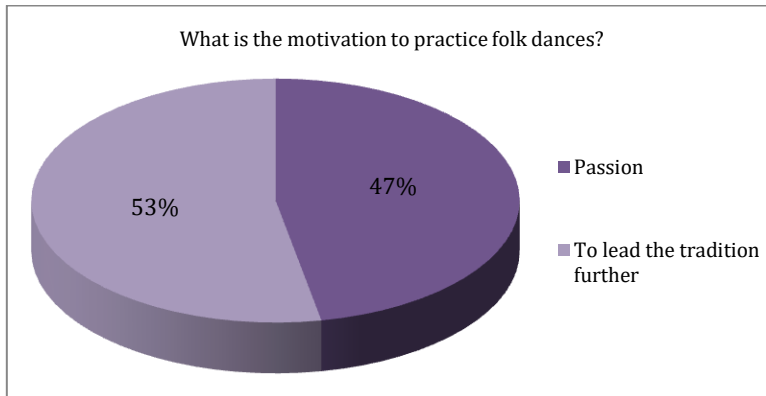


Figure 5. Motivation of folk dance

Considering 58% answers for instructors, folk dance is the greatest passion, for 21% it is a way of relaxation, for 16% it is a way of life and for 5% it is an art.

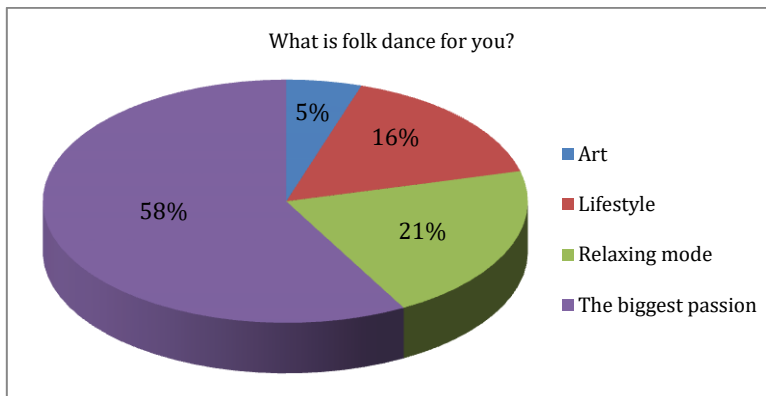


Figure 6. Popular dance for the instructor

The percentages for the duration of the practice of the folk-dance instructors' training of our subjects are:

- 53% of the instructors are currently 5-year-old folk dance instructors, which shows us that some of the younger generation is continuing their tradition;
- 31% between 5-10 years;
- 16% are over 10 years old.

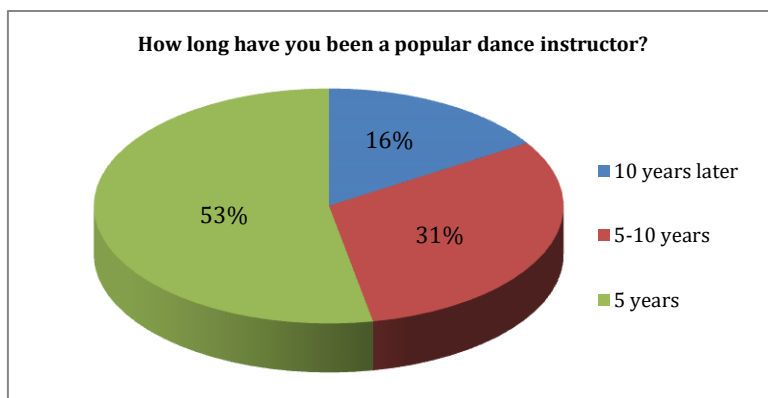


Figure 7. Duration of the trainer's job

The physical aspect in practicing popular dance for most of them:

- 74% say it is important;
- 16% consider it to be of little importance;
- 10% think it is not important at all.

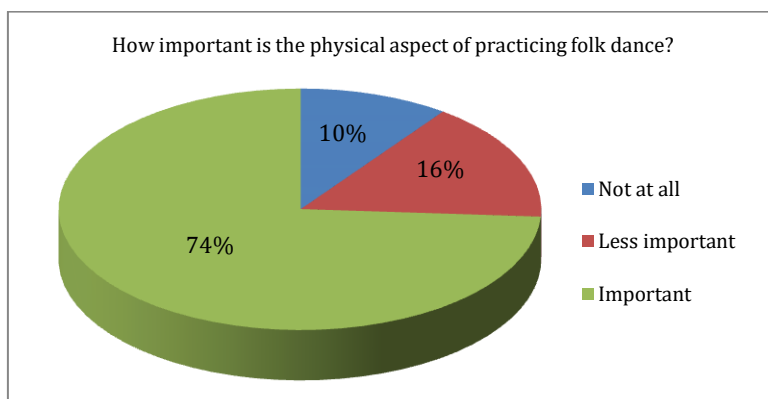


Figure 1. The importance of physical appearance in the practice of folk dance

Depending on the number of beginners, advanced and professional dancers, the information provided by the interviewed instructors demonstrates that, according to the arithmetic mean above 38% of the current dancers in each of the instructors interviewed are at with beginners being the highest, 32% at advanced and 30% at professional level.

Table 1. Arithmetic average

Name of groups	Total number of dancers	Number of groups	Arithmetic average
Beginners	308	11	28
Advanced	330	14	23,6
Professionals	45	2	22,5

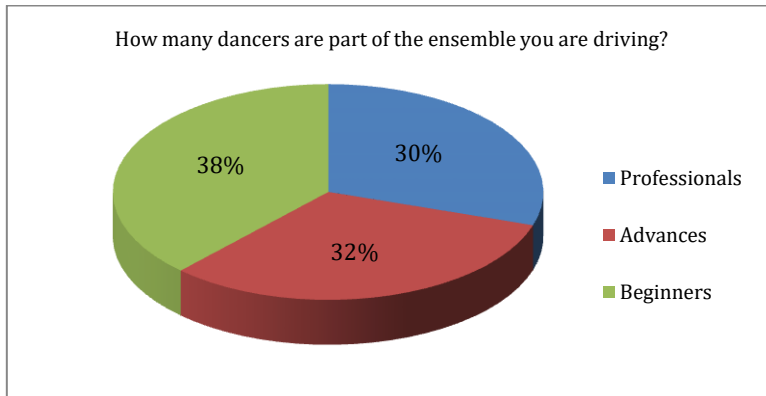


Figure 9. Arithmetic average

In the Romanian folk dance there is a wide range of dances specific to each area, and most of the dance instructors from Bihor County interviewed present in their performances:

- dancing "on foot", 21% of them have this dance;
- Polca de Alesd 18%;
- Polca de Beiuș 15%.

The rest of the dances present in the chart below are the dances that each instructor chooses to present and practice with their team.

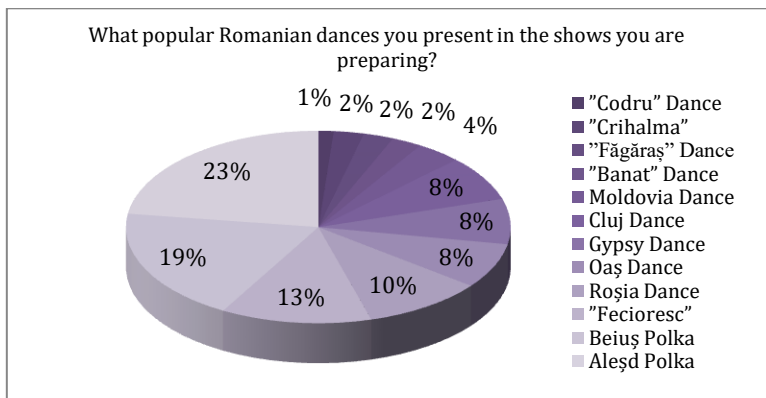


Figure 10. Most Danced in Ensembles

As well as traditional Romanian dances, there is also a wide range of traditional Romanian costumes that are specific to each area and each ensemble has some of the costumes that the dance instructor, depending on the dances presented in performances and festivals, acquires their costumes:

- 41% of the ensembles have a total of Alesd costumes;
- 18% Gypsy costume;
- 15% Red suit.

The rest of the costumes shown in the chart are costumes chosen by the instructor according to dances practiced and presented in shows and festivals.

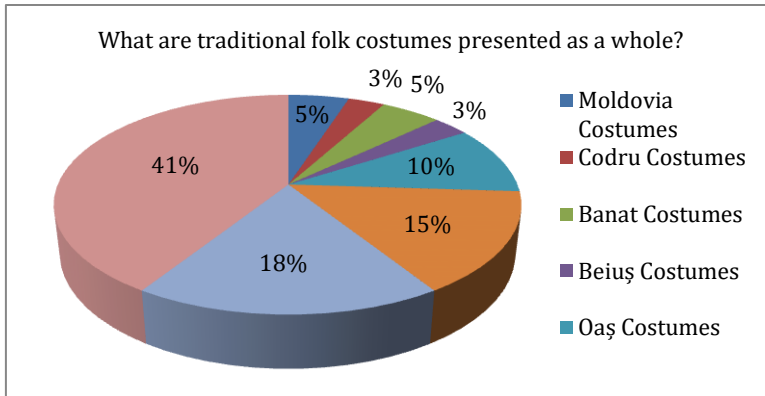


Figure 11. The most common costumes in ensembles

The percentage of the teachers' response to the presence of the spectators supported by the whole group is 95% confirms that the performances supported by the ensemble attract a large number of spectators, which demonstrates people's interest in folk dances.

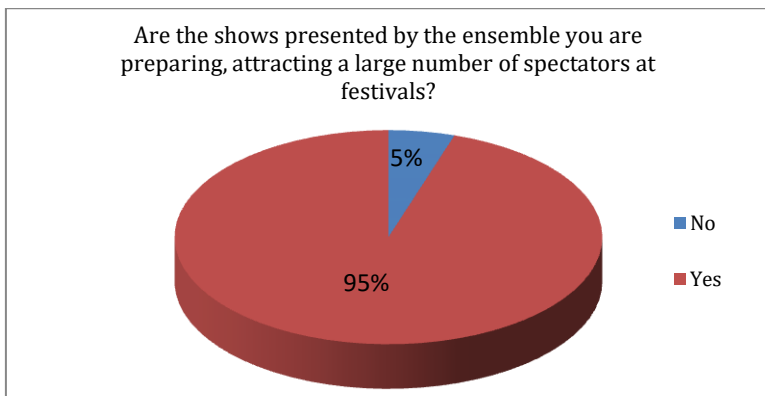


Figure 12. The presence of the spectators in the festivals, performances supported by the ensembles

Folk dance instructors believe that folk dances are not as successful as other dance styles and that modern dance (disco rock) is most preferred by young people today.

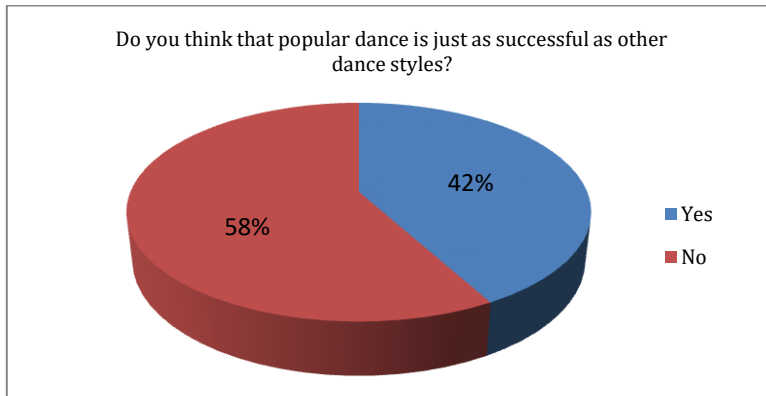


Figure 13. The success of popular dance compared to other dance styles

As for the preface of the dance style of young people the answers show us that 47% of young people prefer modern dance, 37% prefer urban dance (breakdance, hip-hop and streetdance) and 16% prefer sports dance.

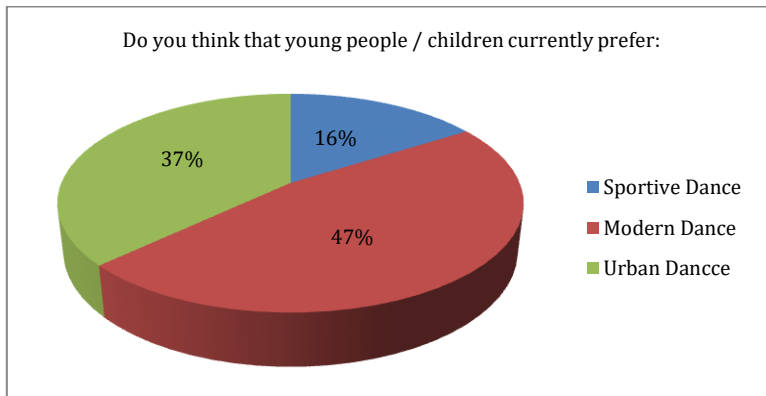


Figure 14. Most preferred dance style by children

Folk dance instructors consider it appropriate to introduce folk dance as a discipline in school curriculum, statistics show that 68% of the instructors agree to this.

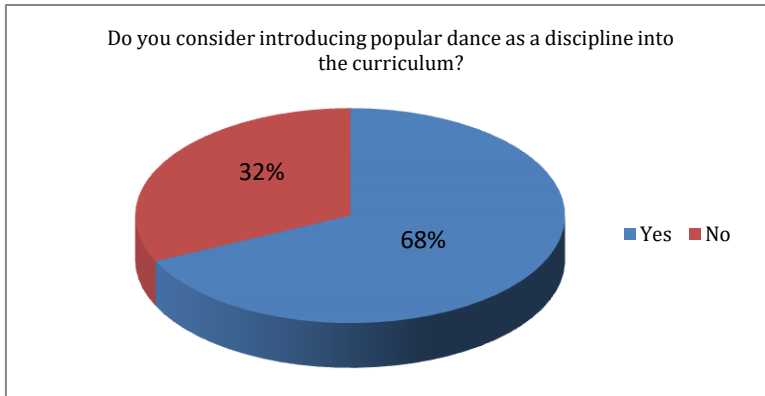


Figure 15. Introduction of popular dance as a discipline in the school curriculum

Participations in various events, competitions, festivals, performances are considered the best way to attract young children to participate in folk dances, by 33% of instructors.

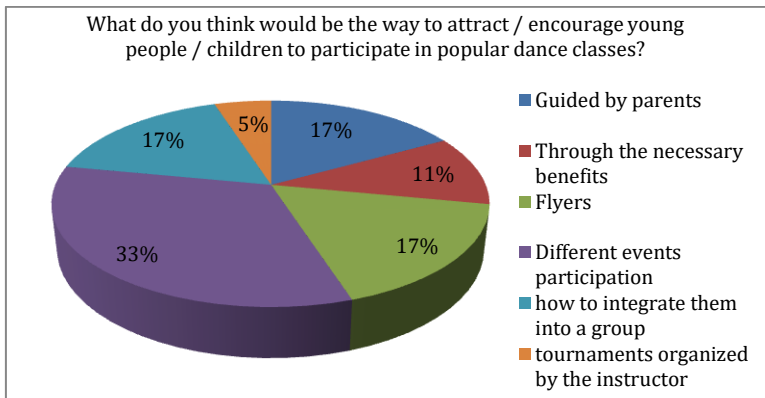


Figure 16. Ways to attract young people and children to participate in popular dance classes

Most of the folk-dance instructors interviewed leads an ensemble in Oradea and more than 8 folk ensembles are currently active in Oradea. The 74% of the urban environment is from the urban area, 26% from the rural area.

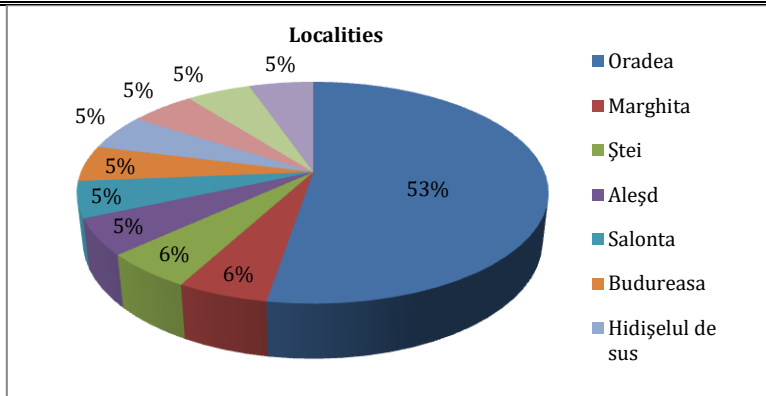


Figure 17. Community, municipality, commune, village of which everybody is part

The percentage of the instructors' background shows that 74% are urban and 26% are rural.

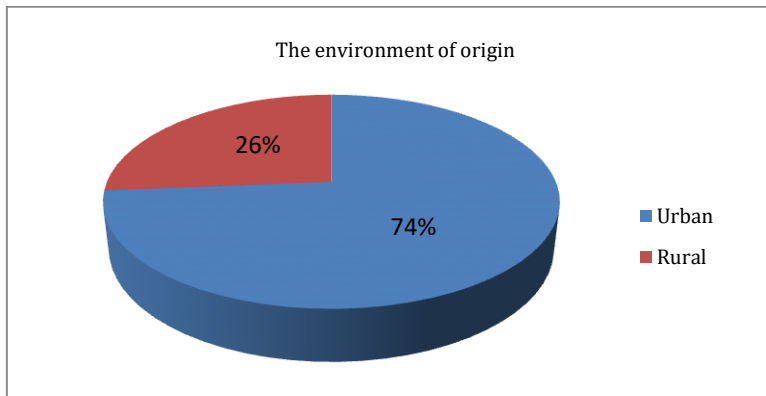


Figure 18. Instructor Origins Environment

Most popular dance instructors are male 74% and 26% female. This statistic demonstrates that the male genre is more interested in this type of dance than the female genre

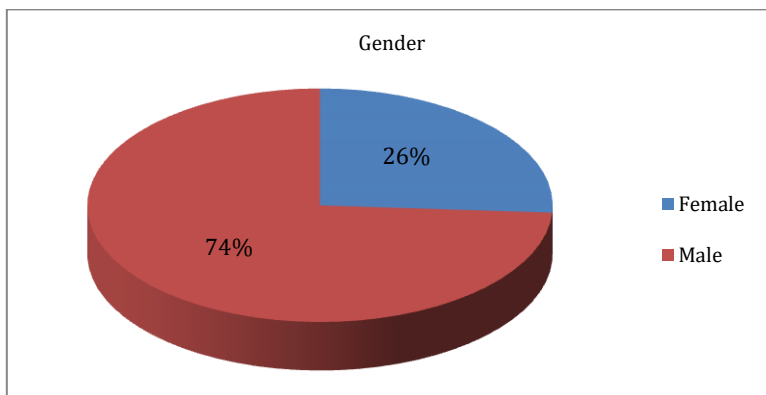


Figure 19. Gender of each instructor interviewed

As a result of the statistics, 58% of the instructor has secondary education; 32% of them have higher education.

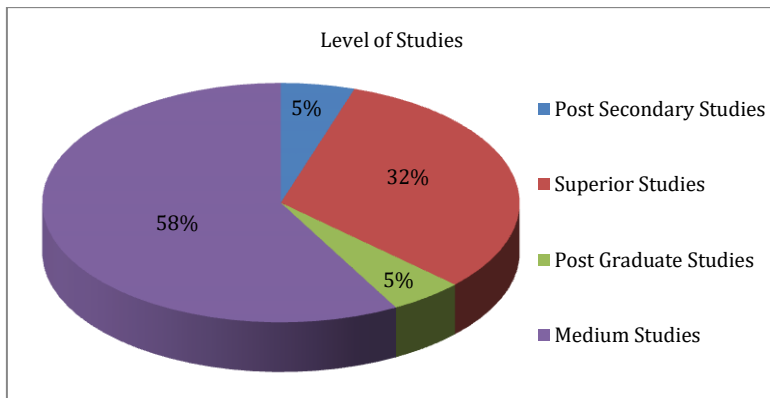


Figure 20. The level of education of each instructor

Instructors who are currently active in this field are aged 18-30 years 47%, which shows that almost half of the instructors are young and are concerned and have the peace to practice and at the same time to carry on the Romanian folk dance.

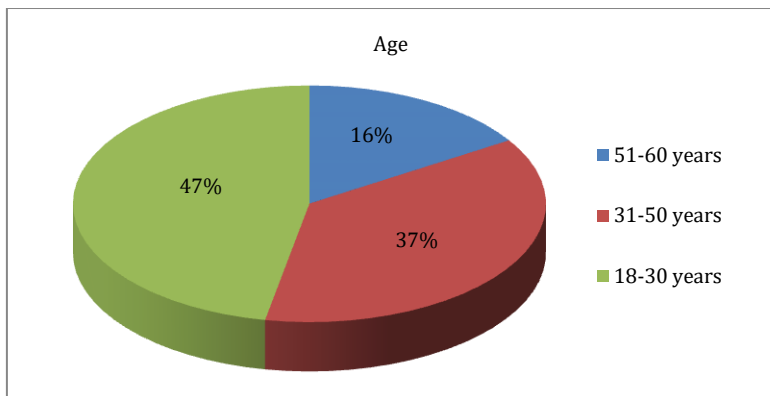


Figure 21. Every instructor's age

Discussions

Based on the respect of the authentic, it is not by chance that the professional and amateur groups in Bihor County have achieved great successes on the scenes of several countries in the world.

The most representative Bihor dances are "on foot", "polca", "fecioresc", "felaga", bătrânescul", "mânânelul" etc. The main musical instrument that accompanies the Bihor dances is the violin (especially the violin with the trumpet), the folk music bands containing the drum and the contrabass. Characteristic of the Bihor people in the dances are the ironic, joyful, or even sad cries (Baciu, 1965).

The authentic popular costume in the ethnographic area of Bihor has developed particularly recently, as a result of the cultural and economic exchanges

of Bihor residents with other citizens of the country, as well as the social-economic development of the area, the influence of the city on the village (Dunare, 1957).

Careful study of the custom and especially of the extremely interesting musical genre that accompanied the custom brought it to the stage in several villages in the area.

Conclusions

The Romanian folk dance is a true source for the formation of healthy artistic tastes, it strengthens confidence and respect for the creative forces of our people, deepens and educates the children the feeling of national dignity and pride.

The knowledge of popular creation in all parts of the country, strengthens the feeling of national unity, enriches the content of the idea of twinning and collaboration between ethnographic areas. Besides the aesthetic and educational effect, the Romanian folk dances are also important from the point of view of the exercise exercises, they exert a favorable influence on the physical development of those who practice them, while contributing to the development of muscle strength and elasticity.

The results highlight the importance of popular dances first in the family. It was highlighted that passion is the main motivation of the dancers that makes them practice folk dance. Instructors believe that popular dance does not have the same impact as the other dance styles on today's young people, being less attractive.

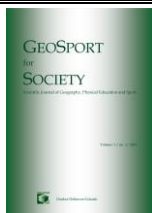
It is considered beneficial and it is proposed to introduce popular dance into the school curriculum, resulting in children's attractiveness to physical education classes.

Finally, we can say that it is necessary to offer children the opportunity to get direct contact with the sources of folk creation such as dance, music, shouting, customs and folk costumes, to create optimal conditions for learning our folk dances, an invaluable treasure of our people.

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Use of digital e-learning technologies through the application of the SAM instructional design model in online medical education

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Abstract: Several instructional design behaviors are carried out by department operatives in higher teaching who lack formal learning theories and instructional science training. Teachers primarily use multimedia to deliver lectures in the form of power-point presentations. Even though there is a wealth of literature on using the program correctly, there are still some instances where the output is subpar. The application of digital technology in medical education is now regarded as a critical component of learning resources. The SAM method is defined as approximating an appropriate attention model successively. The first stage, evaluation, is divided into four sections: analysis, objectives, goals, and results. Design components are interaction, equivalence, technological options, appearance, and quality. The final stage is development, in which the objects and processes of design composition, development, and improvement are integrated.

Keywords: SAM model, instructional design, digitalisation, digital technology, medical education

Introduction

Scientific technology and digitalisation have a tremendous impact on increasing labour efficiency and productivity in almost every field of modern times, from agriculture to health services and innovation. They have proven to be an effective tool for making human life better and easier (Knopes, 2019; Li, 2018). The

expansion of e-learning globally depends on technology-enhanced active learning tools and e-learning options, and their role in health education cannot be ignored (O'Doherty et al., 2018; Masic, 2008).

The use of digital technology in medical education is now considered to be a crucial aspect of learning resources (Barteita et al., 2020). It increases the understanding of the subject, but it also prepares students to deal with real-life scenarios more practically (Vahideh and Mohammad, 2011). The 2019 Coronavirus Pandemic (COVID-19) calls for virtual classrooms to stimulate creative thinking and problem-solving. The existing digital platform has made it possible to communicate with students with a lower barrier. Online teaching has proven to be a method that has challenged our traditional approach (Newman and Beetham, 2007).

Instructional design has been described in several ways, but it is designed to solve instructional problems based on systematic analysis. Given the above, instructional design refers to developing plans based on principles that have been successful in the past, which brings benefits in the future. It helps choose the best possible decision (Kirsh, 2003).

In higher instruction, numerous directions plan exercises are carried out by workforce individuals who have no formal preparation in learning speculations or directions science. Learning theories serves as the foundation for selecting training strategies and accurately predicting their effectiveness. Instructional design models are utilised to direct the improvement of guidelines and plan methodologies that lead to proper cognitive forms to attain viable learning results (Khalil and Elkhider, 2016; Cheung, 2016). Teachers use multimedia mainly to give lectures in the form of power-point presentations. Abundant literature provides instructions on how to use the program properly, but there are still some cases where the production is poor. This preparation should give all learners an ideal and steady learning encounter. This preparation may be unstructured, casual, variable among understudies, or fragmented if not well outlined (van der Heijden and Bem, 1997).

This paper aims to analyse the volume of the material taught, the quality of transmitting the digital e-learning knowledge presented by the teacher, and the perception and applicability of receiving the information. Finally, the concrete aim is to pursue online education's positive and negative effects on medical training.

Materials and Methods

SAM Model

The SAM method is defined as a method of successive approximations to an appropriate attention model. Everyone knows the phenomena summarised by attention: concentration, focus, limitation, selection and intensification. Problems arise quickly in terms of what needs to be explained and the style of explanation. We can list the issues of lack of adequate focus, repetition of words, ideas several times, and low concentration (Mason and Strike, 2003).

The SAM model is divided into three main areas: evaluation, design, and development (Figure 1). The first stage, the evaluation, consists of four sub-branches: the analysis, objectives, goals, and results. During this stage, specific

essential points need to be considered, such as the target audience, skills, learning needs, doing, understanding, knowing, learning context, and type of delivery. The design consists of interaction, equivalence, technological choices, appearance, and quality. The last stage is the development, in which the objects and the processes of composition, development, and improvement of the design are integrated (Wickstrom et al., 2000).

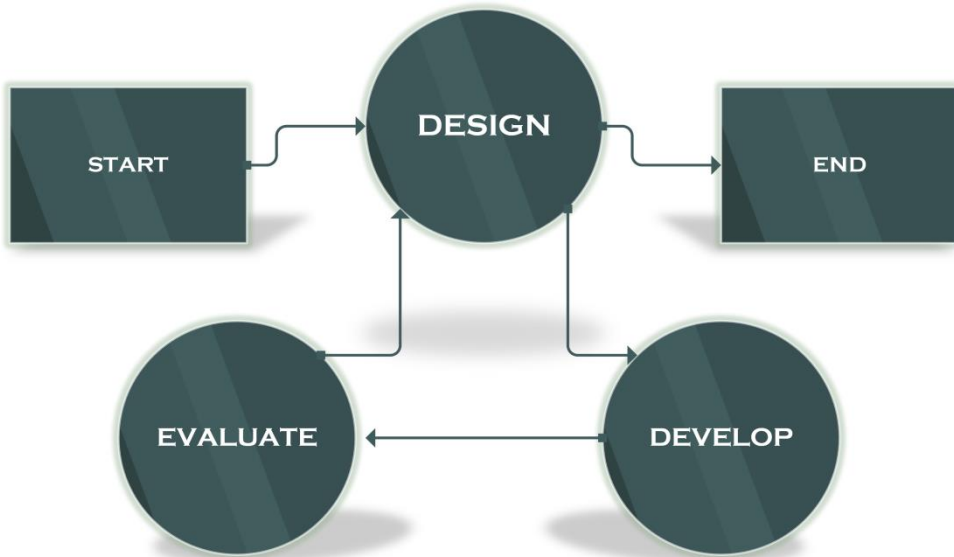


Figure 1. SAM instructional design model

As we go through the SAM analysis, we need to answer the following questions: Who is the target audience? What is their level of training? What are the learning needs/requirements?. In our case, the target audience is the students, so we need to analyse what they need and what they need to do to understand the course. At the same time, we need to pay attention to what they can apply after the course procedures or not the learning method was adequate learning context, and how the information is transmitted. These questions are part of the assessment part of the SAM method. To integrate them into the analysis, we must receive all eligible answers, reaching the necessary points for resolution (Levinson, 2010).

In the next step, the second, Design is analysed. The design part needs to be based on technical analysis, content, and quality of design training. This stage includes several benchmarks: the type of documents, tutorials, accessibility to learning, internet access/technology, mobility, and how to design from student to student and from student to teacher (Levinson, 2010).

The technical part of the design is based on specific criteria, which after their observance, it will lead to the content placement at a high level in terms of quality and be easy to access. For a more sophisticated presentation, we must pay attention to the colors used, organize the items, select the context, search, manifest, and scroll. Regarding the quality of the design, there are some fundamental aspects to respect for quality content: avoiding plagiarism, presenting real opportunities, community, and equivalence of learning opportunities in different ways (Levinson, 2010).

The third part, called development, integrates the objects and processes of design, development, and design improvement. Here it develops step by step what until now was only at the stage of questions and specific goals to be achieved (Levinson, 2010).

Online Education

The COVID-19 pandemic's impact on higher education, particularly interprofessional education programs, has yet to be determined. On the other hand, this pandemic alters how we live, learn, and work. Online instruction is becoming the modern standard in the scholarly world, but it may be a puzzling improvement for a few. Interprofessional instructors anticipate online instruction. Still, some may not have the capacity to form and encourage a lock-in, positive, and controlled online environment for their understudies. The pandemic infection generated many malfunctions in everyday life of the human being in all domains starting from the sanitary domain, economic, transportation, and not the last, the educational system (Sopa and Pomohaci, 2021).

Online education has become a critical training method in medical education; however, there is a limited understanding of what it is like to teach online. Online teaching differs from traditional classroom teaching in various ways (Yadla and Rattigan, 2003; Davis et al., 2013; Rose, 2020).

For more than a decade, medical schools have gradually embraced online learning in pedagogical methods. While some health educators are hesitant to accept these changes, the current coronavirus 2019 (COVID-19) pandemic poses a threat to traditional health education, hastening the inevitable adoption of online learning. This abrupt change may present a new challenge for medical educators who are new to the field. The authors begin by defining three key concepts: transactional distance, presence, and independent learners. Value-based space becomes more imperative than the physical separation in online learning, as decided by exchange and structure. In addition, compelling and successful online education requires realising and adapting cognitive, social and teaching presences. It is additionally essential to perceive understudies as dynamic, capable, and autonomous people instead of inactive beneficiaries of data predefined by an instructor (Elsayed et al., 2010; Griffiths and Roberts, 2005; Rose, 2020).

SAM Model Adapted to Online Education

The authors then discuss practical guidelines for designing an effective online curriculum. Five online pedagogical approaches are presented: creating structures and flows to embrace experiential learning, adapting to synchronous and asynchronous learning, developing/facilitating interactions, promoting practice opportunities, and promoting a learning community (Griffiths and Roberts, 2005; Khalili, 2020).

Evaluation

The evaluation is based on setting concrete objectives, having high expectations, and bringing results as accurate as possible by applying analyses to achieve the ultimate goal.

Objectives

- Capturing students' attention;
- Appropriate means and teaching materials for providing the highest quality information for everyone to understand;
- The matter should remain in memory for as long as possible;
- Following the taught subject, she should develop the ability to apply all that she has learned in her profession;
- Be able to adapt the information learned according to the context in which it is;
- The initial evaluation from the perspective of the teacher on the level of student's knowledge to improve and develop them;
- Analysis of the learning/teaching environment—the platform used;
- Analyzing interactions between student and teacher;
- Facilitating / creating a more comfortable environment for students and teachers (Khalili, 2020).

Analyse

Through the analysis of online education, we can notice some strengths and some weaknesses of it (Gazza, 2017).

The strengths of online learning are the life-saving solutions to these difficult times. Online learning is student-centred and offers excellent flexibility in time and location. Online learning methods allow us to customise procedures and processes according to the needs of students. Many online tools are available that are important for an effective learning environment. Teachers can use a combination of sound, video, and text to convey information to students during this time. This can help create a collaborative and interactive learning environment where students can provide immediate feedback, ask questions, and work in groups or individually (Gazza, 2017).

Online education also has some weaknesses in the form in which it can impede communication between the student and the teacher, i.e., direct contact is lost. Users may face many technical difficulties that hinder and slow down the teaching-learning process. Time and location flexibility, while a strong point of online learning, are fragile and problematic. Bad behavior and flexibility of students can cause a lot of problems. There may be issues where some students do not feel comfortable learning online, which leads to increased frustration and confusion (Rhim and Han, 2020).

Results and discussion

As for the analysis, results on online education should be as concise as possible, clearly indicating both the positive and negative effects of online learning. At the same time, it is crucial to mention what level of understanding the students

started from and where they positioned themselves after browsing the subject on online platforms (Alabdulmonem et al., 2020).

The results should be specified following the analysis throughout online learning. They can be classified according to what each university student pursues, such as the level of understanding of the subject, the understanding and explanation of specialised terms, and solving specific main problems/cases outside of online classes, if they can cope with the situations. It may be encountered at work, at home, or even during classes when working in teams or individually during a project or test/exam (Burki, 2020).

It should be noted that these results must belong to a whole process of analysing the entire development of the SAM method on online education, containing both weaknesses and strengths, but also the inclusion of conclusions based on all information gathered and debated throughout the study (Burki, 2020).

Design

In our case, the design considers the entire content to understand the different varieties of online learning. The aim is to design and prototype the material so that it can be evaluated. We must pay attention to the interaction, equivalence, technological choices, appearance, and quality (Ng and Peggy, 2020).

One of the most common design issues that students talk about is boredom. Some teachers strive to make presentations as enjoyable as possible to increase the students' attention (Ng and Peggy, 2020).

Regarding the technological choices, the taught courses are accessible and posted by the teachers on the teaching platform. The smaller the file size, the better; the most common file type is universal pdf, doc, ppt. In some subjects, students receive tutorials, which in some cases help them to understand better what is being taught. Nevertheless, they do not benefit as much as face-to-face courses would bring in some cases. We have to keep in mind that many students use the phone to access online curricula for various reasons (Ruiz et al., 2006).

It is essential to build an online learning community. Student interactivity is the most important, and teachers need to think about making the courses more exciting and involving more students. Teachers need to reduce transactional distance. The interaction between students and teachers during online courses is low. Teachers should create and maintain a high degree of trust, using terminology that is accessible to all. Imposing rules, such as compulsory attendance at courses, cannot increase their interaction or involvement in studies (Ruiz et al., 2006).

Students during online courses do not need an instructor to keep them motivated; they need someone to guide them in their learning. At the moment, teachers should pay attention to what students need to learn and encourage autonomous learning. In some courses, the presentations are very well structured. The colours and the arrangement are appropriate, but the colours are inappropriate in some. The incorrectly worded texts, correctly and adequately, contain a lot of information that most of them do not explain. The presentations are not organised in such a way as to arouse the interest of the students (Ruiz et al., 2006).

Quality is essential in design. The practical opportunities are fragile; they cannot be achieved only with specific tutorials. For this reason, some systems become boring, even useless. Students may not have the necessary experience in online education as they did during face-to-face courses. Fundamental aspects to be respected for the best quality content would be avoiding plagiarism, presenting real opportunities, the community, and the equivalence of learning opportunities differently.

Development

Development processes versus Objects—Materials

For online education on a program as a branch of medicine to be at a higher level, it must be as concise as possible for all to understand, to capture the attention of those in front of a monitor. It must have the best information resources, access the best methods of exposing and transmitting information, and practically apply the theory, even if it is shared online. All this can be done with a lot of training, even if most people think it is unnecessary, stating that basic online learning platform training is enough. This information is entirely false because to make a presentation at the highest possible standards and, at the same time, to allow it to be put into practice. The creator of the material must access specific programs through which the presentation has a clear, simple aspect but provides everything necessary for the student to understand exactly what he wants to convey.

Development materials or objects used to successfully transmit information in the online environment are just a few essential objects that the vast majority have. For example, a computer, a laptop, a phone, a tablet. All these are objects used to participate in courses and the transmission of information to the receiver by the sender, in our case, teachers (Ruiz et al., 2006).

It is not enough for the objects available to a teacher to be the basic ones mentioned above because the information transmitted will be seen. In compiling their video presentations, they must have that will be useful in explaining some procedures, some diagnoses, and cases that some of the students may not understand to have access to some databases and digital platforms. To bring new innovative ideas on treatments to support their point of view by getting examples of studies based on specific topics sponsored and presented by him (van Putten, 1996).

The information in a program such as PowerPoint or Microsoft Word is helpful. The leftmost of the time, the dull ring or more confusing for the student, just reading times talking about them “for the most part”. The most significant gaps are during online teaching.

As a method of adapting to everyday life, in real cases, working in teams can be used, where the roles of the patient, doctor, and physiotherapist can be established; here, it is possible to set a specific time for solving the project and after solving it to allow asking questions, questions. Teamwork with the teacher can give suggestions, help where needed or even provide additional information.

The above are just a few examples of how an hour or two should go. Going back to our times, only a tiny part of the above is applied to conduct some classes. Only basic materials and objects are used, such as a computer, laptop or telephone, and a platform where courses are loaded and presented.

The learning processes are preferred by most, the simple ones that do not require much effort to transmit the information. The teacher often uploads the material, presents it without explaining the content and ends his class. It does not involve interaction with other students or the teacher, just a monologue.

Suppose a course is more prolonged, longer and with a very high presentation load. In that case, it does not necessarily mean that it attracts attention, captures the student, and arouses interest. Still, it becomes a unit, resting and very difficult to process most of the time. The content is skipped in a hurry because time does not allow it to be explained. Last but not least, the inattention of participants who prefer to find another occupation while connected on the platform appears to be present, with the minor exception of those who are at work who cannot give their attention 100% that they have other duties to perform (O'Neill et al., 2011).

Therefore, the content of the presented material, the way of presentation, with what objects/materials are essential. There are countless ways online courses can be made interactive, engaging, useful, practical, and highly practical (O'Neill et al., 2011).

Conclusions

Following the above arguments, we can say that the instructional design applied in the online environment is a mirror design of the best learning methods. They include materials of the best quality to achieve a qualitative presentation as concisely as possible of the ideas put in theoretical and practical form. They are built on a pattern, which helps train and guides those who will use such an instructional design model.

First of all, in the form of a surface analysis of online education, it has many benefits, such as flexibility, convenience, pleasant environment. A certain relaxation regarding the conduct of the exams, because they are no longer a stress for the one who is going to take it, but are given online, presenting the courses is a simple one, without too much information to explain. From this point of view, the content of the materials presented in the online environment is comprehensive, with many new terminologies and a lot of structured and taught information.

Other benefits of online education would be providing extensive information, easy-to-access scientific sites, easy-to-find and easy-to-study specialised studies.

As far as it is concerned in informing the population, the Internet cannot reproduce reality; it cannot teach us how to put into practice everything we have learned, interact with the patient, and treat and recover a specific pathology. The whole online learning system is often overrated in medicine, medical procedure or branches of medicine.

From the point of view of medical practice, the online learning system is outdated, limited to human interaction, face to face, patient-doctor, doctor-student and more. By uploading a presentation on a particular digital platform, we cannot say that we will have a performance in education or the assimilation of information. The theory explained in complex terminology without being accompanied by a visual stimulus is not as well understood by the student. For a student in a bachelor's / master's program in a medical school to perform, they must interact

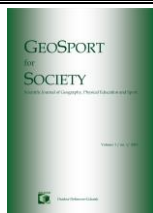
with patients, physicians, and people to explain and present the situations they will encounter in their lifetime, day by day. Not only to be explained but also to be a form of practical learning after teaching the theory.

The online learning environment has many weaknesses that many fail to overcome or solve by turning them into strengths. The type of teaching on digital platforms on medicine does not bring benefits from the point of view of medical practice. Here we can only talk about theoretical performance, but this will also be achieved only if students are attentive to what is taught and manage to put the theory into practice.

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Spatial analysis and methods of cartographic representation of youth football in Bihor County

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Abstract: This paper analyzes, from a spatial point of view, the places in Bihor County where we have sports associations, private clubs, small teams of children and juniors, where children and young people who have not yet reached the age of majority work. Among the research methods used and applied in carrying out this paper we mention: observation method, analytical method, the statistical-mathematical method and the method of graphic and cartographic representation and the basic tool is represented in the cartographic modeling by the ArcGis program. The Bihor football map includes 55 clubs, of which 12 have only activity with junior teams. The total number of clubs with junior teams is 31 and which totals 84 junior teams. A number of 24 clubs with senior teams 55.8% (out of 43) have no activity with junior teams. Most clubs that have junior activity are in Oradea 16, followed by Salonta 3, the rest of the localities having only one club. These clubs are distributed in 23 localities. Only 19 clubs with activity in the senior teams also have groups of children registered in official competitions. Through this study we aimed to improve the cartographic aspect the representation of the sports phenomenon in general and the football one in particular in order to show the importance of the cartographic product in the qualitative and quantitative spatial analysis, in the analytical and synthetic one.

Keywords: football map, football clubs, children and juniors, spatial analysis

Introduction

The relationship between sport and geography (Ilies et al., 2014a) reflected in the spatial analysis of an element or phenomenon is an important support in developing strategies for planning sports activities (Ilies et al., 2016a; Erdely et al., 2020), youth football in the Bihor county, in the case of the present study. The Romanian literature (Ilies et al., 2014b; Ilies et al., 2015; Ilies et al., 2020) or the

international one (Reilly and Gilbourne, 2003; Bale, 2003; Conner, 2014; Kozma et al., 2015) through the works published in the last period, encourage and fully complement this approach.

The approach of this topic was chosen to analyze, from a spatial point of view, the distribution of localities in Bihor county that have sports associations, private clubs or small teams of children and juniors, in which children and young people who have not yet reached adulthood activates. Thus, we try to spatially analyze at county level, the development perimeter of youth football in Bihor County (Herman et al., 2021; Herman et al., 2020a). In this sense, we conducted a correlative study between the youth component of football included in the age group 15-19 years organized at the level of football clubs, the network of high schools in the territory and local authorities. All this in a logical construction based on the dual concept of education and sports and which has continuity in the university environment, thus prolonging the "sports life in an organized environment" on a contingent of ages between 18-25 years (duration of a complete university cycle).

Materials and Methods

The spatial analysis at the level of this study is based on the cartographic transposition of the specific elements that make up the final cartographic ensemble. As in any geographical study, in order to reach a final result relevant to the researched field, the successive use of the three basic principles in geography is required: spatiality, causality and integration, the final synthetic result being, in this case, the cartographic component.

Among the research methods used and applied in carrying out this paper we mention: the observation method; analytical method; the statistical-mathematical method and the method of graphic and cartographic representation (Armas, 2006); and the basic tool is represented in the cartographic modeling by the ArcGis program (Caciora et al., 2021; Herman et al., 2020b).

According to the principle of spatiality, the research of the sports phenomenon determined by the particularities of the youth football from Bihor county uses observation as a basic method and description as a means of rendering. The purpose of this process is materialized in the elaboration of the descriptive model (widely used in the sports practice of information and popularization) which highlights:

- qualitative elements of the sports-football phenomenon: age categories, competitive levels etc;
- quantitative elements- by representations of statistical data or of those personally collected from the field, all graphically dimensioned on an expressive scale.

In 2017, in a research focused on the spatial analysis of amateur football in Romania, we introduced as measurement elements, the territorial development index of football (I_{dtf}) with 5 classes (Bulz and Ilies, 2017):

$$I_{dtf} = (N_e/N_{loc}) * 100 \quad (1)$$

where:

N_e – the total number of teams in the county (only one team per locality/commune/city is taken into account if there are several);

$N_{loc.}$ – the number of localities/communes in the county or a higher area as an extension and which includes at least two localities;

100 – constant multiplication value.

The quantitative results obtained from this analysis are between indices of 0 and 1, where the maximum value shows that throughout the county there is more than one team per city/commune, in which low values indicate a very low level of development and the absence of teams sports (Table 1).

Table 1. The results of the index that indicate the particularities of the territorial administrative units related to the presence in the territory of the sports teams

Class	Value	Peculiarities at the level of cities + communes
1	Above 1,00	The degree of territorial coverage indicates the fact that on the entire territory of the county there is more than one football team per city / commune.
2	0,75-99,00	High degree of coverage highlighting a high level of development of amateur football.
3	0,50 – 0,74	Average level of development with two subcategories differentiated by the average value of the indicator per country.
4	0,25- 0,49	Low level of development.
5	Below 0,30	Very low level of development.

The amateur football practice index (I_{pfa}) through its values can highlight the impact of this type of sport and the related competition on the population in a reporting area (country, region, county, locality etc) by reporting the number of legitimate practitioners per thousand of inhabitants (male and female population; by age groups etc). For the present study, this indicator was adapted as follows:

$$I_{pfa} (N_j/P_{m4-19})*1000 \quad (2)$$

where:

N_j – the total number of players in the county;

P_{m4-19} – specific reporting population. In our case it was about junior teams, we used the male population aged between 4 and 19 years;

1000 – constant multiplication value.

This indicator can be adapted to specific age groups, in the case of the present study to the groups included in youth football, between 4-19 years (Figure 1).

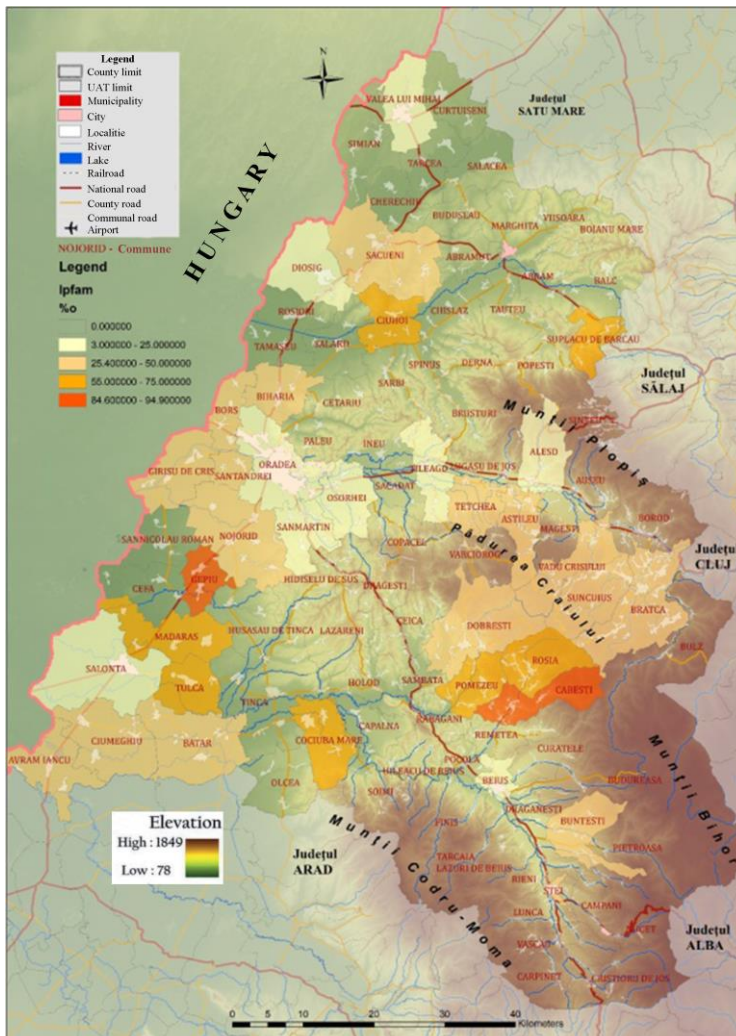


Figure 1. Amateur football practice index at the level of 2017 (processing after Bulz, 2017)

Results and discussions

Demographic component - resource for youth sports

The human resource of the county on July 1, 2020 amounted to 617.927 inhabitants, a value that places Bihor on the 13th place in Romania (INSSE, 2020).

From a structural point of view, the population of the county was distributed as follows:

- 48.78% (301,476 inhabitants) male population;
- 51.22% (316,451 inhabitants) female population.

At the media level:

- the urban population from the 10 cities, through the 316.979 inhabitants represents 49.2% of the total population per county, in turn being

structured by gender as follows: 150.928 male population (47.61%) and 166,051 female population (52.39%);

- the rural population with 300.948 inhabitants represents 50.8%, of which 150.548 are male (50.02%); 150.400 women (49.97%).

The population density at county level was 82.0 inhabitants/km², differentiated as follows: 370.7 inhabitants/km² in urban areas and 43.8 inhabitants/km² in rural areas.

The ethnic and confessional structure promotes the image of a multicultural and heterogeneous county in terms of ethnicity and confessional. From an ethnic point of view, on a dominant Romanian background 63.7%, in the localities of the county, grouped or dispersed together with other ethnic communities are: Hungarians (24.0%), Roma (6%), Slovaks (1.1%), Germans etc. In terms of spatial distribution and the level of confessional structure we find a distribution similar to the ethnic one, there is a certain overlap and an ethno-confessional identity at the level of localities. And in this case on a dominant Orthodox background (55.8%) the confessional structure includes Reformed (16.6%), Roman Catholics (8.4%), Greek Catholics (2.1%), Pentecostals (6, 6%), Baptists (3.8%), others (6.7%) etc.

An important aspect for the study is the structure of the population by age groups, which reflects the demographic potential for the selection of participants in sports activities.

At the level of 2019, the major age group 0-14 years amounted to 94.272 people, representing 15.3% of the total population of the county. At the gender level, the male population was 48.266 people (17.3%) and the female population was 46.067 people (15.5%). The important share was held by the adult population 15-59 years with a total of 381.077 representing 61.8%. The population over 60 years represents 22.8% (140.680 people). The school population of the county as the main resource for recruiting athletes in youth sports included 108.162 people representing 17.5% of the county's population.

At the level of the 107 schools in the county, at the level of the 2018/2019 school year, 49.652 students attended, of which 24.130 were female (48.6%). In high school education (Figure 2 and Table 2), their number in the 51 high school institutions was 18.116 of which 9.367 were female (51.7%). The only high school structure with a sports profile, LPS Bihorul Oradea had 258 students enrolled in the 2018/2019 school year, a much lower value compared to the 2014/2015 school year with 311 students.

The dropout rate was 1.8% differentiated as follows: 1.6% in the primary school, 2.1% in middle school and 1.5% in high school education.

Table 2. Bihor County. The main age groups overlap the selection areas for youth sports in general and football in particular.

Age group	Total (no.)	Male (no.)	Female (no.)
1-4 years	25.361	12.964	12.397
5-9 years	31.217	16.003	15.214
10-14 years	31.847	16.337	15.510

15-19 years	33.350	17.261	16.289
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The sports activity, according to the same county statistical source at the level of 2018, registered 5,536 legitimate athletes distributed at the level of 183 affiliated sports sections under the guidance of 251 coaches and 72 instructors.

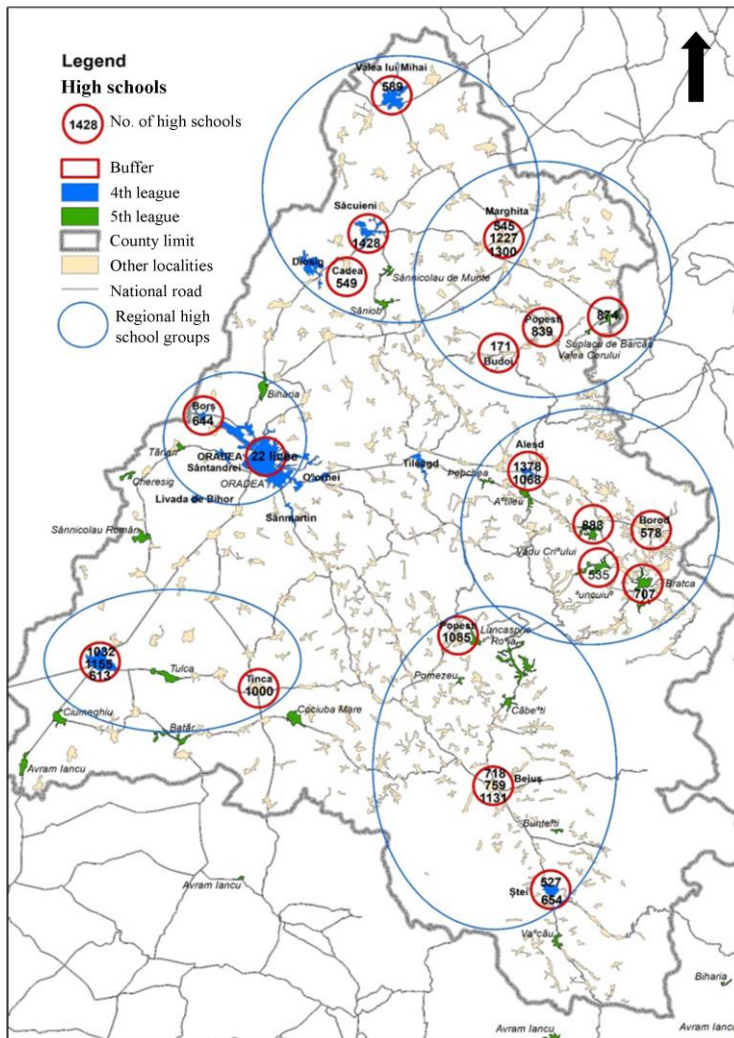


Figure 2. Bihor County. The localities with high schools and the number of students at the level of the 2019/2020 school year, respectively the localities with football teams in leagues 4 and 5 in the 2019/2020 season

Infrastructural component

A reference work in the literature is the one published in 2014 in the *Geographical Atlas of the tourist heritage of Crişana and Maramures* (Ilies et al., 2014c) with a chapter dedicated to tourist infrastructure. The transposition of this model at the level of Bihor county comes in support of a spatial analysis of the specific

infrastructure in terms of quantity (number, elements) but also qualitative (equipment level etc). The management of such a database through GIS faithfully reproduces this type of information through the resulting cartographic product.

The sports bases identified in the localities of Bihor county, also used by the youth football, are differentiated according to the age category, being generally, especially at the level of the rural environment, with the basic infrastructure of the locality. At the level of urban environment there is a diversification of the infrastructure generated by the existence of support financial resources with values higher than those existing in rural areas. At the level of this study we propose a mapping of the specific infrastructure on two categories:

- outdoors;
- covered land, which is usually identified for small age groups with gyms belonging to schools or town halls.

Another typology concerns:

- lands with natural grass;
- land of various sizes covered with synthetic surfaces.

From the point of view of the competitive level for which the football fields of the clubs with football teams at the level of Bihor county have been approved, in 2020 the infrastructure of this type can be ranked as follows:

1. **League 3: Oradea**

- Iuliu Bodola municipal stadium with two fields with natural grass and a synthetic field, where the CAO 1910 Oradea club operates;
- Tineretului stadium with a field with natural grass and a synthetic field, for the Junior Elite Championship. To this are added three covered fields for mini-football;
- University of Oradea stadium with natural grass field and two synthetic mini-football fields.

Sânmartin

- CSC Sânmartin team stadium - two fields with natural grass;
- Luceafărul Oradea stadium - two fields with natural grass.

In certain situations, in localities where football teams have been active in the upper echelons of Romanian football, there is a high quality infrastructure currently used only at the level of lower leagues of amateurs (4 or 5), children and juniors: Salonta, Aleșd, Beiuș , Valea lui Mihai, Marghita, Ștei etc. Although it has a stadium where league 3 matches were played, currently the city of Marghita is represented in Bihor football only by junior teams. There are also good quality football fields: Borș, Sântandrei, Valea lui Mihai, Aleșd, Tileagd, Salonta, Beiuș, Ștei etc. Unfortunately, there is also quality infrastructure, unused or temporarily used: Paleu, Marghita, Hidișelu de Sus, Gepiu etc.

2. The infrastructure approved for the development of League 4 senior and junior competitions includes at the level of 2020 stadiums from 18 localities, 9 cities:

Oradea, Salonta, Beiuș, Ștei, Valea lui Mihai, Aleșd, Săcuieni and 9 communal stadiums: Avram Iancu, Cociuba Mare, Sânmartin, Tileagd, Borș, Mădăras, Livada, Diosig, Voivozi.

The way of cartographic representation of infrastructures uses the ArcGis program as a tool and the elements and quantitative and qualitative phenomena are rendered by signs, symbols, pictograms rendered at scale and chromatically supported by color spectrum to render the intensity of the phenomenon and the size of the element. All these methods of cartographic representation facilitate at the highest level the spatial analysis with an important role in the elaboration of spatial planning strategies in general and in the field of sport in particular. This type of map is extremely useful in the competitive region, especially correlated with the communication infrastructure.

3. Infrastructure approved for football competitions at league level 5.

4. Approved or adaptable infrastructure for mini-football. In this case, reference is made especially to the synthetic mini-football fields managed by schools or local communities.

Youth competitions

Analyzing the competitions organized at county level in the 2019-2020 season, until the declaration of the state of emergency, we found a certain stability compared to the previous season.

The content of this chapter focuses on qualitative representation. The map made shows spatially, through symbols adapted to localities, the level of competition in hierarchical aspect or by age categories. The method of concentric circles combined with symbols or icons is the most suggestive to highlight the competitive level or age category in which a club in a particular locality participates. In certain situations, as is the case of Oradea, such cartographic representations also result in a ratio between the number of clubs/teams and the existing infrastructure. Such analyzes highlight the pressure exerted by the youth human resource on the infrastructure; its insufficiency; poor quality etc.

Juniors A, B and A1 (17-19 years old)

The A1 junior group includes children aged 17-19 and younger and who are usually high school students in grades XI-XII. The exceptions are usually in rural areas, where some of them dropped out of school. In these cases, through a strategy at community level, through a well-defined relationship between family, school and club, they can be attracted to sports and implicitly motivated to continue school. Such situations can be found in Tileagd, Livada, Diosig or Săcuieni.

In the 2019/2020 season, at the level of the 4th league, 12 junior teams were activated. Of these, two teams are from Oradea, CAO 1910 and FC Universitatea Oradea, 5 teams are from the Oradea metropolitan area: Crișul Sântandrei, Viitorul Borș, CSC Sânmartin, Embrak Livada and CS Oșorhei, and another 5 junior teams come from areas with tradition in this sport: CSO Ștei, Crișul Aleșd, CS Unirea Valea lui Mihai, CSM Olimpia Salonta and Foresta Tileagd. We mention that compared to the previous seasons (2017/2018 and 2018/2019), the number of A1 junior teams is on

a negative trend and this should give food for thought to those involved in this phenomenon. At this level, compared to the previous season, these groups were abolished at the clubs in Beiuș, Săcuieni, Diosig and Mădăras. If in the communes of Diosig and Mădăras the lack of human resources of selection was invoked, the situation in the cities of Beiuș and Săcuieni, old centers of Bihor football, is not even more explained. In both cities there are high schools as a selection area (Table 3), those in rural areas are usually based on children from the local horizon. As can be seen in Figure 2, the commune of Diosig has a high school unit in the vicinity of Cadea, which could ensure a club-high school partnership relationship.

Table 3. The junior teams from Bihor county registered in the 4th league, 2019/2020 season
(Source: AJF Bihor - Juniors 4th league, 2020)

#	Echipa	M	V	E	I	GM	GP	P
1	ACS CAO 1910 Oradea	11	11	0	0	90	6	33p
2	FC Universitatea Oradea	11	10	0	1	58	18	30p
3	Clubul Sportiv Oșorhei	11	8	0	3	39	17	24p
4	CSO Ștel	11	7	1	3	44	14	22p
5	Crișul Aleșd	11	7	0	4	58	24	21p
6	CS Unirea Valea lui Mihai	11	5	1	5	27	25	16p
7	CSC Crișul Sântandrei	11	4	1	6	62	31	13p
8	CSM Olimpia Salonta	11	4	1	6	52	37	13p
9	CSC Sănmartin	11	3	2	6	26	41	11p
10	CS Viitorul Borș	11	2	1	8	12	48	7p
11	Unirea Embrak Livada	11	1	0	10	17	132	3p
12	Foresta Tileagd	11	0	1	10	16	108	1p

The relationship between high school institutions and sports clubs: Strategies and solutions

A strategy to revive youth football at this age category can be based on a correlative spatial analysis at the level of localities with teams in league 4 where there is an obligation to have such a group and the existence of high schools that could provide the necessary human resources. Thus, a county strategy can be put into practice that combines the dual concept of school and sports (Herman et al., 2020c). Specifically, it would be necessary to sign a partnership between the club and the high school(s) in the locality or neighborhood, and according to the Western model, those who, in addition to teaching and extracurricular activities at club level to be compensated through the school with sports scholarships. This mechanism, if there is interest from clubs and local communities, should be put into practice given that most clubs and all public schools are under the authority of the mayor's office (Table 4 and 5).

Table 4. The high school network from Bihor County in the 2019/2020 school year (*ISJ BIHOR, 2020*)

Nr. Crt.	Residence	Name of the educational unit	Locality	Total no. of classes PJ	Total no. of students PJ	School sports club
1	URBAN	COLEGIUL ECONOMIC "PARTENIE	ORADEA	48	1272	
2	URBAN	COLEGIUL NAȚIONAL "EMANUIL	ORADEA	40	1153	
3	URBAN	COLEGIUL NAȚIONAL "IOSIF VULCAN"	ORADEA	58	1557	
4	URBAN	COLEGIUL NAȚIONAL "MIHAI	ORADEA	50	1395	SSC 1
5	URBAN	COLEGIUL NAȚIONAL "ONISIFOR	ORADEA	61	1813	
6	URBAN	COLEGIUL TEHNIC "MIHAI VITEAZUL"	ORADEA	54	1544	
7	URBAN	COLEGIUL TEHNIC "TRAIAN VUIA"	ORADEA	73	1910	
8	URBAN	LICEUL CU PROGRAM SPORTIV	ORADEA	21	578	SSC 2
9	URBAN	LICEUL DE ARTE ORADEA	ORADEA	36	885	
10	URBAN	LICEUL GRECO-CATOLIC "IULIU	ORADEA	37	1025	
11	URBAN	LICEUL ORTODOX "EPISCOP ROMAN	ORADEA	28	782	
12	URBAN	LICEUL REFORMAT "LORANTFFY	ORADEA	21	457	
13	URBAN	LICEUL TEHNOLOGIC "CONSTANTIN	ORADEA	30	876	
14	URBAN	"VASILE VOICULESCU" ORADEA	ORADEA	29	728	
15	URBAN	LICEUL TEHNOLOGIC SPECIAL NR.1	ORADEA	45	502	
16	URBAN	LICEUL TEOLOGIC BAPTIST	ORADEA	31	915	
17	URBAN	LICEUL TEOLOGIC PENTICOSTAL	ORADEA	53	1446	
18	URBAN	LICEUL TEOLOGIC ROMANO-CATOLIC	ORADEA	37	893	
19	URBAN	LICEUL TEORETIC "ADY ENDRE"	ORADEA	28	734	
20	URBAN	LICEUL TEORETIC "AUREL LAZĂR"	ORADEA	19	548	
21	URBAN	"FRIEDRICH SCHILLER" ORADEA	ORADEA	36	785	
22	URBAN	LICEUL TEORETIC "LUCIAN BLAGA"	ORADEA	37	1014	
23	URBAN	COLEGIUL NAȚIONAL "SAMUIL	BEIUȘ	28	759	SSC 3
24	URBAN	COLEGIUL TEHNIC "IOAN CIORDAȘ"	BEIUȘ	30	718	
25	URBAN	LICEUL VOCAȚIONAL PEDAGOGIC	BEIUȘ	43	1131	
26	URBAN	COLEGIUL NAȚIONAL "AVRAM IANCU"	ȘTEI	20	527	SSC 6
27	URBAN	LICEUL TEHNOLOGIC "UNIREA" ȘTEI	ȘTEI	26	654	
28	URBAN	COLEGIUL NAȚIONAL "OCTAVIAN	MARGHITA	47	1300	
29	URBAN	LICEUL TEHNOLOGIC "HOREA"	MARGHITA	20	545	
30	URBAN	LICEUL TEORETIC "HORVATH JANOS"	MARGHITA	53	1227	
31	URBAN	LICEUL TEORETIC "ARANY JANOS"	SALONTA	46	1032	
32	URBAN	COLEGIUL NAȚIONAL "TEODOR NEȘ"	SALONTA	46	1155	SSC 4
33	URBAN	LICEUL TEHNOLOGIC NR.1 SALONTA	SALONTA	23	613	
34	URBAN	COLEGIUL TEHNIC "ALEXANDRU	ALEȘD	43	1068	SSC 5
35	URBAN	LICEUL TEORETIC "CONSTANTIN	ALEȘD	60	1378	
36	URBAN	LICEUL TEHNOLOGIC NR.1 VALEA LUI	VALEA LUI	25	589	
37	URBAN	LICEUL TEORETIC "PETOFI SANDOR"	SĂCUENI	73	1428	
38	RURAL	AGROINDUSTRIAL "TAMASI ARON"	BORȘ	33	644	
39	RURAL	LICEUL TEORETIC "GABRIEL TEPELEA"	BOROD	29	578	

40	RURAL	LICEUL TEORETIC NR.1 BRATCA	BRATCA	38	707
41	RURAL	LICEUL TEORETIC "JOZEF KOZACEK"	BUDOI	12	171
42	RURAL	LICEUL TEHNOLOGIC NR. 1 CADEA	CADEA	26	549
43	RURAL	LICEUL TEHNOLOGIC NR.1 DOBREȘTI	DOBREȘTI	51	1085
44	RURAL	LICEUL TEHNOLOGIC NR.1 POPEȘTI	POPEȘTI	42	839
45	RURAL	LICEUL TEHNOLOGIC NR.1 SUPLACU	SUPLACU DE BARCAU	49	874
46	RURAL	LICEUL TEHNOLOGIC NR.1 ȘUNCUIUȘ	ȘUNCUIUȘ	26	535
47	RURAL	LICEUL TEORETIC "NICOLAE JIGA"	TINCA	48	1013
48	RURAL	COLEGIUL TEHNIC NR.1 VADU	VADU CRIȘULUI	43	883
				1852	44.814

Table 5. The network of high schools with sports classes under the title of School Sports Club rounded LPS CSS Bihorul from Oradea

Residence	Name of the educational unit	Locality
URBAN	School sports club No.1	ORADEA
URBAN	School sports club No.2	ORADEA
URBAN	School sports club No.3	BEIUS
URBAN	School sports club No.4	SALONTA
URBAN	School sports club No.5	ALEȘD
URBAN	School sports club No.6	STEI

Quantitatively correlating the age group 14-19 years with the number of students in high school and the number of existing A1 and B1 junior football teams can be noted the interest shown by local authorities and communities for sports but especially the possibility of developing a strategy to create a useful connection to the community in this regard, Of the 48 high schools in the county, 37 are in urban areas (77.0%) with a total of 36936 students (82.4%) of which 22 (45.8%) in Oradea municipality with a total of 22,812 students (50.9%). To these are added 11 high schools in rural areas distributed in 11 localities and totaling 7878 students (17.6% of the total by county). Based on this analysis, the regional grouping could look like this:

1. The municipality of Oradea, which includes over half of the number of students in the county and almost similarly the number of high schools (22) has the most important selection base.

2. The group of localities with 2-3 high schools that includes 5 cities: Beiuș (3), Marghita (3), Salonta (3), Ștei (2) and Aleșd (2). The following mention is required: except for the municipality of Marghita, all the other cities included in one of the rounded high schools and sports classes, respectively School Sports Clubs.

3. Grouping localities with a high school: two cities: Valea lui Mihai and Săcuieni; and 11 rural localities: Borș, Borod, Bratca, Budoii, Cadea (administratively belongs to the town of Săcuieni), Dobrești, Popești, Suplacu de Barcău, Șuncuiuș, Tinca and Vadu Crișului.

In table 6 we present correlatively the relationship that could exist in a future county strategy for reviving youth football between the local authority, high school and sports club.

Table 6. Bihor County. ATUs, high schools and sports clubs with a football profile at the level of 2020

Nr. Crt.	Locality	No. Of high schools	Competitive level			No. teams
			Republican championship	4th league	5th league	
1	Oradea	22	Luceafărul LPS Bihorul CSM Viitorul Pandurii	CAO FC Universitatea	CAO	13
2	Salonta	3		CSM Olimpia		1
3	Marghita	3	Without team			
4	Beiuș	3		CF Bihorul		1
5	Aleșd	2		Crișul		1
6	Ștei	2		CSO		1
7	Valea lui Mihai	1		Unirea		1
8	Săcuieni	1		Stăruința		1
9	Borș	1		Viitorul		1
10	Borod	1	Without team			
11	Bratca	1			Unirea	
12	Budoi	1	Without team			
13	Cadea	1	Without team			
14	Dobrești	1			Vulturii	
15	Popești	1			Poienarii	
16	Suplacu de Barcău	1			Voința	
17	Șuncuiuș	1			Minerul	
18	Tinca	1	Without team			
19	Vadu Crișului	1			Stânca	
	Total	48	8	9	7	20

Unfortunately, the negative trend regarding the declining interest among young people is also reflected in table 5 which shows the following conclusions: Oradea, which also has a high school with a sports program, at a number of 22 high schools has only 9 teams juniors A and B of which 8 in national level competitions and only 3 in amateur competitions. To these are added another 6 teams at league level 4, of which only 5 in urban and one in rural La Borș. On a normal logic of encouraging sports so that each high school has at least one team, we find a large territorial deficit. At a number of 15 high schools in the urban area there are only 5 junior teams, all in amateur football. Of the 11 rural localities with high schools, only Borșul is in league 4 and has a team of juniors A1, instead other 6 rural localities with high schools have senior teams in league 5. The probability that high school students from these localities will work in these teams is also high. On the other hand, the municipality of Marghita does not exist on the map of Bihor football at the level of seniors and juniors A1, to which are added 4 other communes, of which Borod and Tinca with a great youth potential.

A solution in this sense would be the organization at the level of Bihor county, in partnership between AJF Bihor, ISJ Bihor, the town halls from the localities with high schools and the existing football clubs, a championship between educational institutions. The map of such a championship would include no less than 21 localities with high schools: 10 urban and 11 rural. Specifically, teams could be registered as follows:

- high school representatives: theoretically a potential of 48 teams, of which in Oradea there are 22. This aspect would impose a championship at municipal level;
- if there are partnerships between the clubs in the locality or neighboring localities attesting the fact that at least 75% of the players are the students of the partner high school, the clubs in question can be graduated by the existence of a junior team. A good example in this sense could be the commune of Diosig, with a team in league 4 but which there is a high school nearby in Cadea that also has an homologable football field. A partnership between the CS Diosig club and the Cadea High School, even if they are in different ATUs, would substantially contribute to the development of youth football, to the reduction of school dropout and especially to the increased social integration at the level of the local community;
- another advantage from an economic point of view would be the support of these school teams from the MEN budget and additionally from the funds of the local authorities under whose jurisdiction the high school or club is located, and the third source is local, regional sponsors etc.

Sports clubs and football teams: Spatial analysis

The graphic and cartographic way of representing in quantitative and qualitative aspect the human resource that forms a team/club but also their number is extremely diverse. At the level of this study we will present some ways of representation and the typology of specific or synthetic cartographic products.

Cartographic modeling can very faithfully render a territorial reality of a phenomenon generated by the geographical positioning of the component elements. For example, we will present a junior championship project (14-19 years) as a way to revitalize the sport in this age group and especially the possibility of increased interest from communities and local authorities to support such a demers.

The actors of such a project are: local sports clubs with a football profile (it can be transposed as a model for other sports); local authorities, local socio-economic communities and the most important "recruitment field" are the existing high schools in the network in Bihor County.

The aim is to create a socially and economically efficient regional structure with a positive impact at the level of local communities. A model based on the promotion of the dual concept *education* and *sport*. Thus, regarding the analysis of the number and territorial distribution of the localities that have football teams (Figure 3a) indicates a uniform distribution in the territory, with a final number of 43 such localities. Regarding the competitive distribution: 2 clubs operate in the 3rd

league, 20 in the 4th league and 20 in the 5th league, while one team has only groups of children and juniors (Figure 3a).

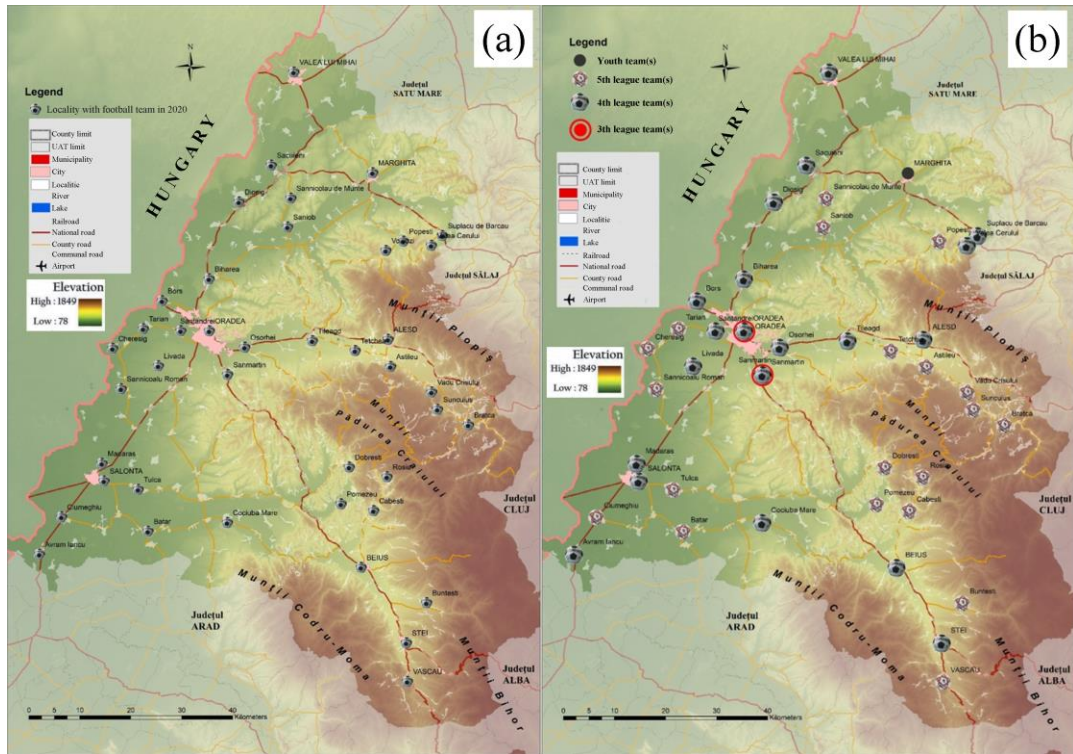


Figure 3. Football map from Bihor county in 2020 (a - sports clubs with local football teams; b - ierarhizarea competițională a cluburilor la nivel de localități) (Source: AJF Bihor, 2020)

The action area is structured as follows with 5 regional groups:

1. An area included in the Oradea Metropolitan Area that groups the best performing clubs and the highest infrastructural density: 3 clubs in league 3; LPS Bihor in the Elite League; 7 clubs in league 4 and 3 clubs in league 5. In this geographical area there are also the largest number of clubs and teams of children and juniors: 11 in Oradea and 6 in the communes of ZMO (Figure 4)

2. Other 4 regional groups at county level having as concentration poles localities with high schools: Barcău-Ier Region (Figure 5); Valea Crișului Repede (Figure 6); Salonta area (Figure 7) and Crișului Negru Valley (Țara Beiușului; Figure 8)

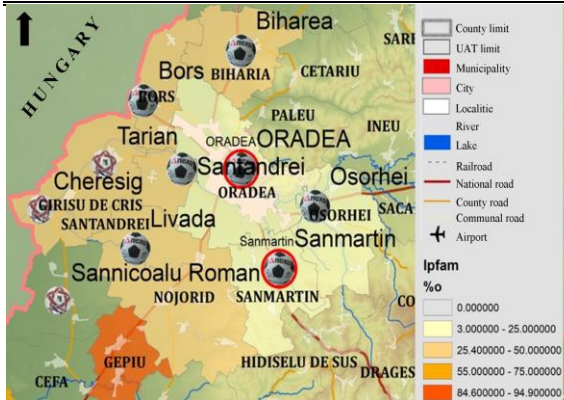


Figure 4. Oradea Metropolitan Area: Sports clubs and competitive levels in 2020

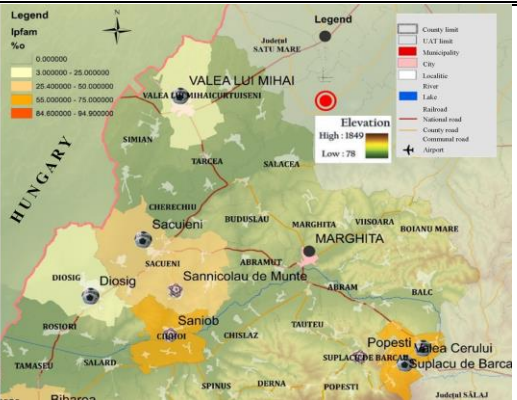


Figure 5. Barcău-Ier Area: Sports clubs and competitive levels at the level of 2020



Figure 6. Crișului Repede Valley: Sports clubs and competitive levels in 2020



Figure 7. Salonta Area: Sports clubs and competitive levels by 2020

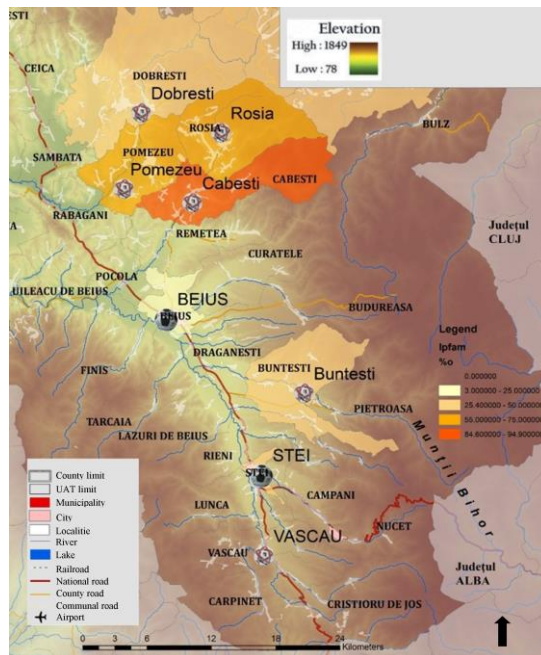


Figure 8. Crișul Negru Valley: Sports clubs and competitive levels in 2020

In the geographical football space of the county are thus identified 6 polarization regions outlined around urban centers and rural localities with high schools and sports clubs. According to table 6, the map of Bihor football includes 55 clubs, of which 12 have only activity with junior teams. The total number of clubs with junior teams is 31 and which totals 84 junior teams. A number of 24 clubs with senior teams 55.8% (out of 43) have no activity with junior teams.

Most clubs that have junior activity are in Oradea 16, followed by Salonta 3, the rest of the localities having only one club. These clubs are distributed in 23 localities. Only 19 clubs with activity in the senior teams also have groups of children registered in official competitions: 3 from league 3 and 16 from league 4 (Table 7).

Table 7. Bihor County. The network of sports clubs with junior and children's football teams in 2020
(Source: AJF Bihor, 2020)

Nr.crt	Team name	League	Senior Groups						
			Elite	A	B	A1	C	D	E
A	3th League								
1	CAO Oradea	3, 5				1	2		
2	Luceafărul Oradea	3		1	2		1	1	1
3	CSC Sânmartin	3, 4				1	1	2	1
B	Clubs without senior teams								
1	CS Athletic Oradea							1	1
2	AS Zenit Oradea							1	2
3	Viitorul Oradea			1	1		1		1
4	LPS Bihorul Oradea		2	2	2		3	4	1
5	NAC Oradea						1	1	1
6	CSM Oradea							2	2
7	CS Dinamo Oradea						1	1	
8	CS Inter Oradea								1
9	CF Liberty Oradea								1
10	CS Junioru 2017 Salonta								1
11	CSS Salonta							1	
12	Viitorul Marghita						1	1	1
C	4th League								
1	FC Universitatea Oradea	4				1			
2	CSM Olimpia Salonta	4				1	1	1	1
3	Bihorul Beiuș	4					1	2	1
4	Cs Viitorul Borș	4				1			
5	CS Unirea Valea lui Mihai	4				1	1	2	1
6	Unirea Livada	4				1			
7	CSO Ștei	4				1	1		
8	Crișul Sântandrei	4				1			
9	CS Oșorhei	4				1			
10	Foresta Tileagd	4				1	1		
11	Crișul Aleșd	4				1	1	1	1
12	CS Diosig	4						1	
13	ACS Vulturii Săcuieni	4						1	
14	CS Mădăras	4							1
15	Voința Suplac	4					1	1	1
16	Izvorul Cociuba Mare	4					1		
17	Victoria Avram Iancu	4							
18	ACS Slovan Valea Cerului	4							
19	AS Gloria Beiuș	4							
D	5th league								
1	ACS Progresul Săniob	5							
2	AS Vadu Crișului	5							

3	Cetatea Biharia	5							
4	CSC Viitorul Bratca	5							
5	Inter Aștileu	5							
6	Locadin Țețchea	5							
7	Minerul Șuncuiuș	5							
8	Toldy Sânnicolau de Munte	5							
9	Voința Cheresig	5							
10	ACS Viitorul Batâr	5							
11	ACS Voința Ciumeghiu	5							
12	Biharia Marmogranit Vașcău	5							
13	Gloria Căbești	5							
14	Partizanul Sânnicolau Român	5							
15	Unirea Roșia	5							
16	ACS Poienarii Popești	5							
17	Victoria Tulca	5							
18	Vida Pomezueu	5							
19	Viitorul Târian	5							
20	Vulturul Dobrești	5							
21	Zorile Buntești	5							
	Total		2	3	4	12	19	24	20

Regarding the number of junior teams that can be linked to high school activity (14-19 years) the number of clubs is extremely low, only 13 clubs: Luceafărul from league 3 and 12 from league 4 to which is added LPS Bihorul with teams in national championships: Elite and Republican U19 and U17 (Figure 9, 10 and 11).

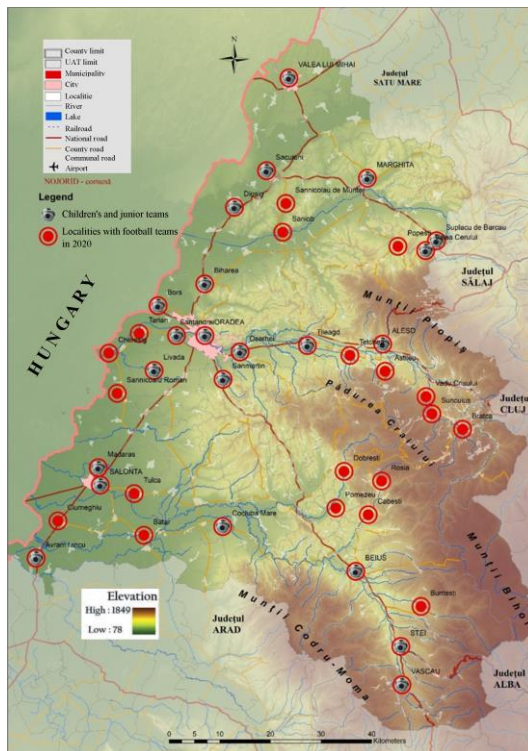


Figure 9. Bihor County: Localities with football clubs and teams of children and juniors at the level of 2020 (Source: AJF Bihor, 2020)

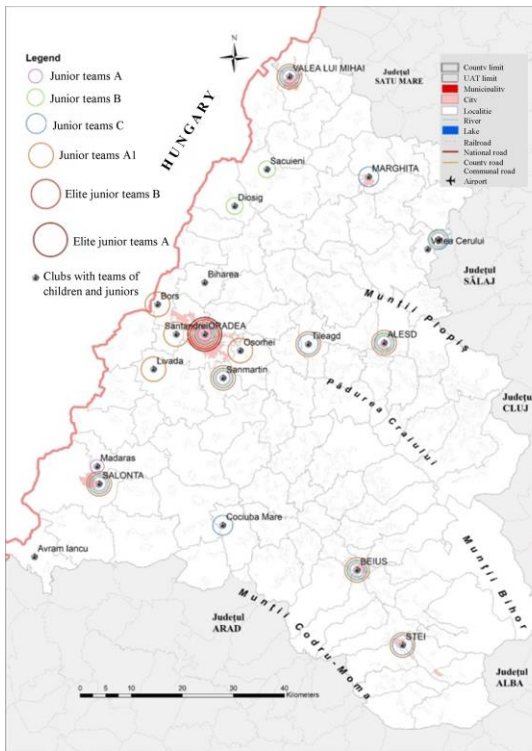


Figure 10. Bihor County: Localities with football clubs and teams of children and juniors at the level of 2020 on competitive levels (Source: AJF Bihor, 2020)

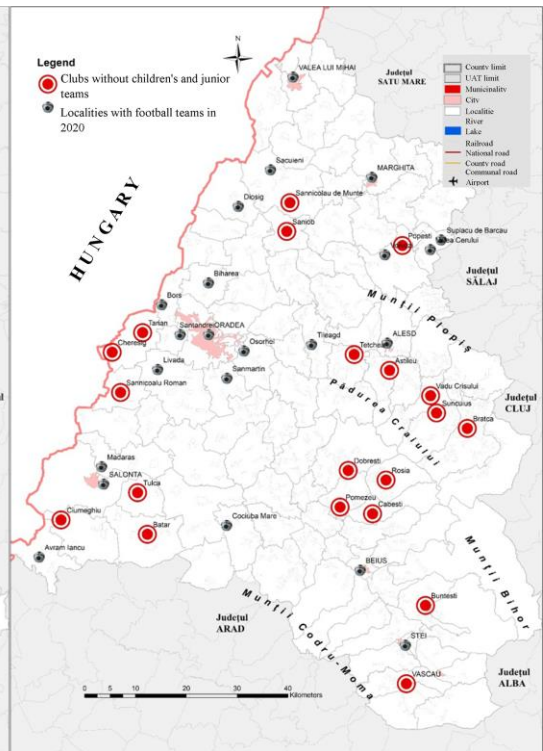


Figure 11. Bihor County: Localities with football clubs without teams of children and juniors at the level of 2020 on competitive levels (Source: AJF Bihor, 2020)

Post-junior continuity in the university socio-sports environment: National University League

The strategic chain can continue beyond the age of juniority. In the same idea of reducing school dropout a significant number of students who choose the dual form of education and sports, football in this case can continue at the university level. Such a project aims to develop a national university football championship in Romania in order to coagulate the university environment, following the British model, and through representation at the level of sports movement. With a potential of 92 public and private universities and implicitly as many university teams, a large part of young juniors have such a perspective of personal development on a professional level in parallel with sports. The maps presented (Fig.22 and 23), by the way they are made and the number of elements presented are extremely suggestive in order to highlight a huge untapped sports potential in Romania, focused mainly on young people between 16-23 years old.

And in this context, at the level of Bihor County, the Oradea university center with the 5 higher education institutions can be constituted in poles of coagulation of the university sports movement. In this sense, in 2011, As FC Universitatea Oradea was established, a sports club with a football profile that operates at county level and in the national university championship.

After its establishment, in the absence of a professional perspective on sports, a significant number of juniors turned to higher education at the University of Oradea. In parallel with the university studies, in the 9 years of operation, over a hundred sports students were identified. Usually a complete cycle in the university football team coincides with the student period.

In general, university clubs have their own infrastructure (Figure 12 and 13) that facilitates the access of a significant number of sports students to extracurricular activities.

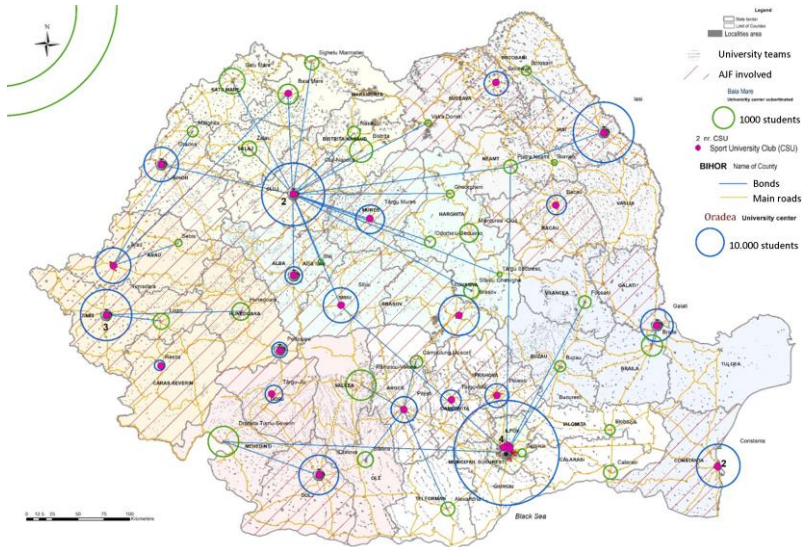


Figure 12. Romania. The network of public and private universities, university centers and sports clubs existing in Romania at the level of 2020

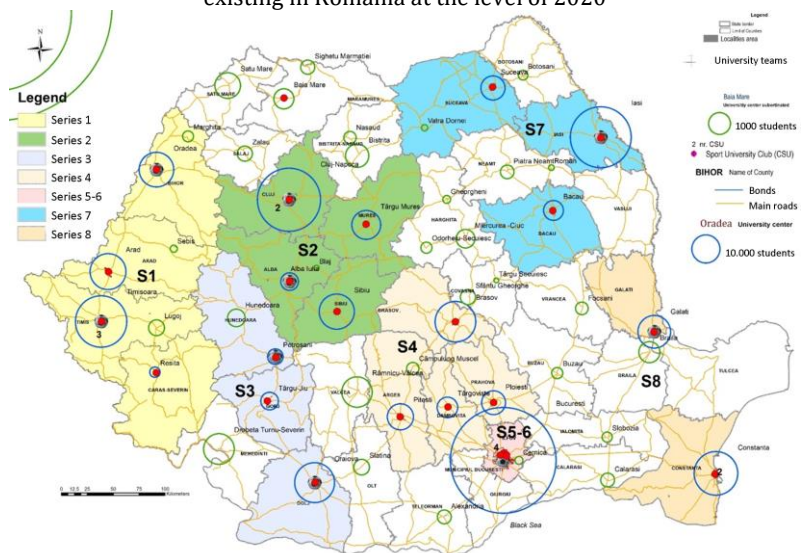


Figure 13. Romania. The network of public and private universities, university centers and sports clubs existing in Romania at the level of 2020 and a proposal for their grouping in order to establish the national university football league in Romania

Conclusions

Through this study we aimed to improve the cartographic aspect the representation of the sports phenomenon in general and the football one in particular in order to show the importance of the cartographic product in the qualitative and quantitative spatial analysis, in the analytical and synthetic one. Using methods and tools specific to the geographical field and delving into the geography of sport, after a complex national study conducted in 2017 and other niche works published in 2014-2020, we come with this study focused on a specific component such as youth football. After defining the qualitative and quantitative elements that are the object of the study, we hope that through the original methods of representation we bring a substantial contribution to the methodology of spatial analysis of the sports phenomenon in general and of football in particular.

In the first phase, after the spatial delimitation of the study area superimposed on the Bihor county area, we defined the elements of representation: human resource, infrastructure and competitive level. All 3 groups of elements are represented qualitatively and quantitatively by the maps included in the study.

The first map is the physical-geographical and administrative one of Bihor county as a basis for representing the proposed elements. The second set of maps covers the infrastructure in terms of quantity (number) and quality (approval level etc).

Group three of maps identifies the level of competition and the degree of involvement at the level of local communities. The most complex set of maps targets the human resource in terms of quantity (number, age groups, etc.) and qualitative (competitive level of participation, teams, performance etc).

A number of over 30 cartographic materials made using a specific cartography methodology, were designed to render individual or group elements, phenomena, aspects of a quantitative and qualitative nature, etc. generating for the first time such cartographic products to define a cultural-sports space having as main theme football in general and youth football in particular.

Also, the spatial analysis allowed us the geographical regionalization of the cultural-sports space defined by football at the level of Bihor county in 5 specific regions: Oradea metropolitan area; Salona plain area; Ier-Barcău area; Crisului Repede Valley Area and Țara Beiușului or Crișului Negru Valley Area.

The basic product of this study is the synthesis map that cumulates the elements previously presented individually, systemically transposed. The map must be suggestive, correctly made and adapted to scale in order to be useful both to specialists in the geographical field but especially to the communities that manage the sports phenomenon from local to regional and national level.

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