

NATIONAL SPORTS ACADEMY „VASIL LEVSKI“

SOFIA

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**ANALYSIS OF THE CONDITIONS FOR DEVELOPMENT OF ALPINE
SKIING FOR PEOPLE WITH DISABILITIES IN BULGARIA**

ABSTRACT

of the dissertation for the award of the educational and scientific degree
"Doctor" in the scientific specialty "Theory and methodology of sports science",
professional field 7.6 Sport

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Sofia, 2021

The dissertation contains a volume of 177 standard pages. It is illustrated with 31 tables and 53 figures. The bibliography includes 88 literature sources, 13 of which are in Cyrillic, 61 in Latin and 14 on the Internet.

The dissertation is approved, discussed and directed for official defense at a meeting of the Snow Sports Department at the National Sports Academy "Vasil Levski".

The public defense of the dissertation is scheduled for 23/02/2021 at 14.30 in hall A3 of NSA "V. Levski".

Protective materials are available to those interested in the NSA library "V. Levski".

INTRODUCTION

Innovations in equipment and changes in social attitudes continue to break down barriers to sports participation, allowing people with disabilities to participate in almost any athletic activity. Sport is an effective means of combating the shortcomings of modern society and strengthening the healthy physical and mental condition of the population.

Skiing for people with disabilities is an accessible physical activity in many countries and although it requires snow conditions, technological development as well as engineering innovations allow this activity to take place in places with warm climates. The Paralympic Winter Games have a significant role to play in promoting the sport among the people. Alpine skiing is a pleasant and useful winter physical activity that people with disabilities can learn safely with the right instructions (Edward and Laskowski, 1991). There are developed modules and systems for work, training and sports for excellence. The definition of a ski for people with disabilities used in English is "adapted ski". In Bulgarian we will accept the translation of this definition and will use the term "adapted skis", distancing ourselves from the translation "adaptive skis", because this is a quality that does not determine the whole specificity of physical activity.

Bulgaria is a country with a relatively small area, but with a great variety of natural resources. This is a prerequisite for practicing a wide range of outdoor activities and sports activities, including alpine skiing. On the territory of the country there are both large winter resorts and smaller ski centers. The information available in Bulgaria and in Bulgarian about skiing for people with disabilities is scarce, and the practical activity is very limited. Therefore, we aim to study the conditions for the development of adapted skis at the national level and form the following *working hypothesis*:

An in-depth study of the existing conditions for the development of adapted skis on the territory of the Republic of Bulgaria, as well as good international practices, would provide substantiated information that can be a starting point for the development of sports activity as a functional and practically applicable system at national level.

PURPOSE, TASKS, METHODS AND ORGANIZATION OF THE RESEARCH

Purpose of the study

Analysis and assessment of the current state of access to winter sports for people with disabilities and the prerequisites for the development of adapted skis in the Republic of Bulgaria.

Tasks of the study

1. Study of the nature of the adapted ski and international structures, developing activities directly related to winter sports for people with disabilities.
2. Study of the necessary conditions and prerequisites for practicing adapted skis.
3. Analysis and assessment of the possibilities for practicing adapted skis in the Republic of Bulgaria: natural resources, material and technical provision, human resources and their attitude, accessibility of the infrastructure, specialized ski equipment, demand and supply of physical activity.
4. Study and comparison of national organizational models of the system of adapted skis in the countries: Finland, Canada, Australia, Israel and Bulgaria.
5. Conducting field observations of adapted skiing classes (organized forms of training).

SUBJECT MATTER, OBJECT AND SUBJECT OF THE RESEARCH

Subject of the research - Alpine ski sports for people with disabilities (adapted skis)

Object of the research - system and opportunities for practicing adapted skis within the Republic of Bulgaria

Participants in the study are 65 ski instructors, 2 ski school managers, 3 hotel managers, 8 volunteers (5 people with disabilities who use a wheelchair in their daily lives and 3 companions).

METHODOLOGY AND RESEARCH METHODOLOGY

To solve the specific tasks and achieve the goal of the research, the following research tools were used, which include:

1. Literary research;
2. Questionnaire method;
3. In-depth interview;
4. Single case study;
5. Field observations and expert assessments;
6. Mathematical and statistical methods

Literary research covers 88 literature sources - 13 in Bulgarian, 60 foreign languages and 15 Internet sources. This includes books, scientific publications, conference proceedings, and more.

Questionnaire method. A survey was conducted in order to identify the attitude of professional ski instructors to work with people with disabilities. The questionnaire is based on Ajzen's Theory of Planned Behavior.

Ajzen formulates three components that predetermine intentions and behavior: attitude to action, social norms, perceived behavioral control.

1. The attitudes of the ski instructors' guild, regarding the phenomenon - the practice of alpine skiing by people with disabilities.
2. The degree of readiness (desirability) for inclusion in support, through sports training, of people with disabilities.
3. Whether this "desirability" results in the formation of real intentions for action.

The design of questions in the survey is based on the "Likert scale", taking into account specific requirements. The question is a statement that respondents should evaluate by indicating a quantitative assessment expressing degrees of agreement or disagreement with the statement. The degrees of the scale are symmetrical and contain an equal number of positive and negative possible answers, the respective distances of which are symmetrical about the "neutral" answer.

The "Semantic Differential" or also known as the "Polar Profile Method" makes it possible to study the individual's subjective ideas about various aspects of reality. Allows the establishment of connections of cognitive - behavioral and emotional - personal nature. As a

rule, each scale of the semantic differential has seven gradations, which can be expressed numerically (3, 2, 1, 0, 1, 2, 3) or orally (strong, moderate, weak, in any way, weak, moderate). ,strongly) with respect to the allegations. The fourth degree is zero, which for us will take into account the lack of attitude or ignorance on the part of the respondent.

Factor analysis is a section of multidimensional statistical analysis that allows to determine generalized criteria (factors), each of which contains (simultaneously) the properties of several variables. We apply this method to separate statistically significant information, as the factor summarizes information about the many variables, the purpose of which is to reduce the dimensionality of the studied features.

An in-depth interview is aimed at obtaining detailed, comprehensive and direct information from the respondents, and is not limited to pre-formulated questions and answers, but uses the so-called "Guide". The guide contains a set of topics to be discussed. Each topic can have subtopics, but neither has fixed answers. The aim is for the respondents to answer in free text in as much detail as possible.

Single case study is one of the qualitative methods for conducting research in the social sciences, which analyzes real-life situations and evaluates the result of the application of certain methods and ideas. We apply the method to study the development of the skills of a sitting skier and a skier with a visual impairment within three years.

Field observations are used as a research method for perception, registration and evaluation of phenomena, processes and conditions.

Nine included and indirect observations of organized forms of adapted skiing activities were held in five different countries. One-time and periodic surveys were conducted in the period 2017 - 2019, each of which has a different duration. Five countries with different climatic and organizational models - Finland, Italy, Dubai, Israel and Bulgaria - were selected with the presumption of collecting comprehensive information to present the "full picture" of the opportunities for practicing adapted skis. The participants in the observations are people with disabilities, from different categories of adapted skiers, as well as experts in the field of snow sports.

During the field observations we gathered information about the accessibility of the infrastructure elements and their connection together with five volunteers.

ORGANIZATION OF THE RESEARCH

The organization of such a project as a dissertation , requires strategic planning. None of the stages is strictly limited in time. It is a research process in which the flow of information, the impact on the environment and a number of external factors overflow. However, we have set some limits so that we can keep the focus on the topic of the study.

We distinguish five stages, through which the preparation and realization of the present dissertation passes. As mentioned earlier, some of the research activities have a duration that falls into more than one stage. We will mention these activities separately.

The first stage starts on 04.04.2016 and includes a study of literature sources on the topic, information is collected that is directly and indirectly related to the problem.

The second stage lasts three months - from September to November 2017, and consists of a selection of research tools.

The third stage is deployed within a year, starting in December 2017. It includes an assessment of the accessibility and connectivity of the environment and infrastructure in Bulgarian ski areas, ski centers and resorts, as part of the field observations.

The fourth stage begins in December 2018. A survey of in-depth interviews and field observations are conducted. Application of mathematical and statistical tests, as well as additional research.

The final **Fifth stage** begins in January 2019, during which the results are analyzed and systematized.

It is important to note that the field observations described in this dissertation were carried out over a period of three years. Also, the collection of data on accessibility of the environment and infrastructure is longer and overlaps two stages.

The survey includes a group of 65 ski instructors ($n = 65$), of which 26 women and 39 men from the resorts of Bansko, Borovets, Pamporovo and the ski center "Opheliite".

Through the method of in-depth interview the participants are:

- two managers of ski schools in Republic of Bulgaria;
- three hotel managers in three Bulgarian ski resorts;
- eight volunteers;
- five people with disabilities who use a wheelchair in their daily lives and three assistants.

RESULTS AND ANALYSIS

Natural resources and opportunities for practicing adapted skis in the Republic of Bulgaria

Bulgaria is a naturally rich country with four seasons. There are both, large ski resorts and many small ski areas with a variety of lifts. The total length of the ski slopes in Bulgaria exceeds 210 km. The highest point is located at 2600 meters above sea level, and the maximum displacement reaches 1630 m. Winter ski tourism is well developed and is of interest to both Bulgarians and foreigners.

On the territory of the country there are two organizations responsible for the certification of professional ski instructors - Association "Bulgarian Ski School" and Association "Bulgarian Professional Ski Instructors". At this stage, none offer a training program for an adapted ski. On the other hand, the National Sports Academy "Vasil Levski" trains specialists in the field of adapted physical activity and sports. In their training there is a module of adapted alpine skiing, but on an informative level with a limited practice. Most students have knowledge in the field of sports for people with disabilities, but very little such in the field of teaching alpine skiing, and for the most part they themselves learn to ski during the training process.

The organizations that develop adapted alpine skiing on the territory of the country are Special Olympics and NGO ParaKids. So far, the Bulgarian Paralympic Federation has been developing cross-country skiing, but not adapted alpine skiing.

Special Olympics covers athletes with intellectual disabilities and has been operating since 2003, responsible for the preparation and participation in competitions and world summer and winter games.

Active development of all categories of adapted skis in Bulgaria has been carried out since 2016 thanks to ParaKids, which offers a variety of outdoor and indoor sports opportunities for people with disabilities, with a focus on opportunities rather than difficulties.

In the period 2017 -2019, requests for participation in individual classes of adapted skiing are nearly 130, of which only 50% are aloud to join. In regard to winter sports camps, the proportions are similar, with a demand of over 270 participants. This leads to the inclusion

of children and people with disabilities on a first-come, first-served basis, and as a result many applicants fail to learn about winter sports at all.

Apart from the local inquirers for adapted winter sports, we are also observing foreign ones. The Israeli Erez Foundation held 4 adapted ski camps in Bansko per season. The ski resort of Pamporovo is also annually chosen as a place for practicing adapted alpine sports by the British and Irish. Last but not least, the interest in participating in the INTERSKI International Congress was extremely high, but the barriers in the accessibility of the environment hindered the stay of the adapted skiers and as a result many of them refused to visit Bulgaria.

Our observations show that the interest of Bulgarian citizens and foreign tourists is growing, in contrast to the offering.

Accessibility of ski areas in Bulgaria for people with disabilities

Bulgarian legislation sets out the requirements for accessibility of the environment for people with disabilities, but in practice they are not applied conscientiously and in most cases are only imitated.

The research was conducted in Bansko, Borovets and Pamporovo, and with the help of 5 adapted skiers who use wheelchairs, we were able to establish the actual accessibility. There are two main groups of criteria, which we combine into two factors that affect the practice of adapted skis.

The first factor relates to the tourist infrastructure - entrance, parking, reception, access to the restaurant, elevator, lounge.

The second factor refers to the material base and the characteristics of the ski areas - parking space in the ski center (connection vehicle –ski lift), passing through the ski data (access mechanism to the lift), independent use of lift, approach and exit from lift facilities, ski slopes (difficulty level), artificial snow facilities and toilets suitable for people with disabilities.

The number of hotels and accommodations that offer adequate living conditions for people using wheelchairs is limited. These are hotels with a class of 3 to 5 stars and fall into the group of accommodation for customers with higher solvency. Their satisfactory accessibility for people with disabilities is a consequence of professionalism in the hotel

business, as well as the availability of financial resources for the implementation of adequate access conditions.

Bansko

Accommodation - hotels "Bansko", "Casa Karina", "Kempinski" and "Unique Boutique".

Characteristics of the ski area - The slopes are of varying levels of difficulty, suitable for both beginners and advanced. The ski lifts are: one gondola lift, eight active chair lifts, four drag lifts (type "Botom" and "T-bar"), three drag lifts (type "Baby", with a handrail), two mobile paths. The main ski area can also be reached by car. The gondola lift in the ski resort of Bansko has an elevator that takes the person with the wheelchair from a specialized parking lot to the climbing facility itself, which allows independent access to the gondola. In order to carry out the lifting itself, it is necessary to stop it and to place a movable ramp at the entrance of the cabin, after which there is again a possibility for independent access. The descent is analogous. From the point of view of adapted skiers, the disadvantage of the ski area is the access to sanitary facilities. The only separate place is located at the last station of the gondola lift.

Borovets

Accommodation - hotels "Lion" and "Rila"

Characteristics of the ski area - The access to the ski slopes can be done from three places, both with specialized climbing facilities and by car. The ski area can be divided into three subzones. Subzone 1 offers easy access to ski facilities and slopes suitable for beginners and advanced. The access to subzone 2 is realized only with the Yastrebets gondola lift, which starts from the resort village. Next to it is a parking lot, which is managed by the municipality of Samokov, but there are no specialized parking lots for people with disabilities. However, it is accessible and relatively convenient. The first and last stations of the gondola lift are built at two levels, without an elevator or ramp, which makes them impossible for a person using a wheelchair to access. Borovets has one gondola lift, four chair lifts, seven ski lifts, two baby lifts and one mobile walkway. Subzone 3 of the ski center Borovets is provided by a chair lift - "Yastrebets Express", which gives access to red slopes. Suitable only for advanced sit skiers. In addition to the level of difficulty of the slopes, their length also requires good technical and physical preparation of sit skier. Sanitary facilities for people with disabilities are a problem in the whole ski area.

Pamporovo

Accommodation - hotels "Orlovets", "Camellia", "Orpheus" and "Perelik".

Characteristics of the ski area - Specialized climbing equipment - chair lifts and ski lifts type "Botom", "T-bar" and "Baby" ski lift, no gondola lift. The challenge is the connection vehicle – ski lifts and revers. There is only one specialized parking space, which is located in the "Stoykite" area. Despite its presence, in order to reach the slope itself, there is a displacement of one meter, usually covered with snow, which makes access difficult. The ski slopes are suitable for beginners and advanced. Sanitary facilities are also a problem for people with disabilities in this ski area.

Organizational models of the system for Adapted skiing and good practices in Canada, Finland, Israel, Australia and Bulgaria

The organizational models of the adapted ski system that we have looked at in different countries are very similar. In Bulgaria, Canada, Finland, Israel and Australia, governments are responsible for sport in general and exercise control. Organizations that have a relationship and connection with adapted skiing are non-governmental ones that self-regulate. They are responsible for the management and coordination of winter adapted activity, such as sports for all.

We look at the highest governing body of sport, organizations certifying professional ski instructors, non-governmental organizations developing adapted skis, such as grassroots sports and professional sport, illustrated in figures 1 to 5.

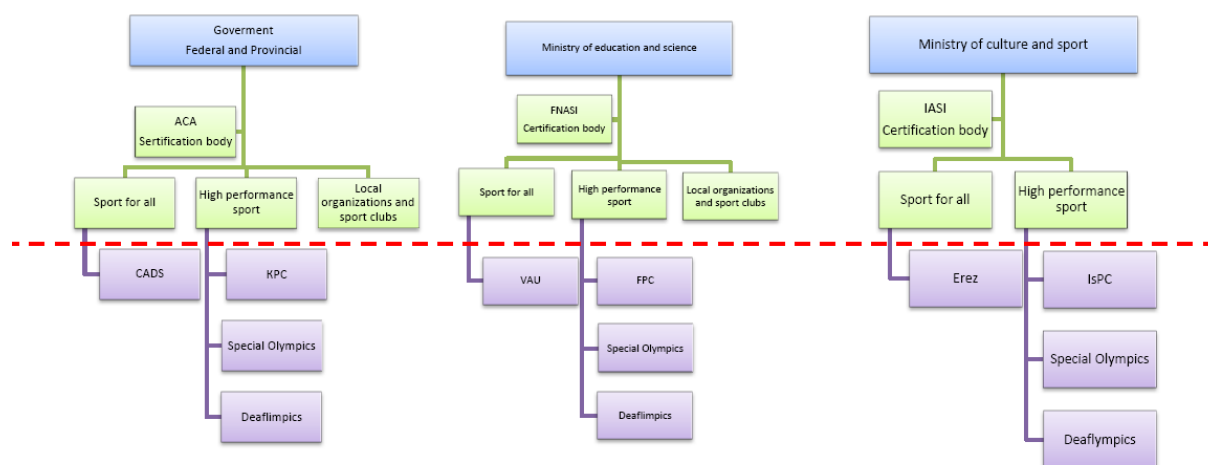


Figure 1 Connectivity scheme of organizations developing Skiing for people with disabilities in Canada

Figure 2 Connectivity scheme of organizations developing Skiing for people with disabilities in Finland

Figure 3 Connectivity scheme of organizations developing Skiing for people with disabilities in Israel

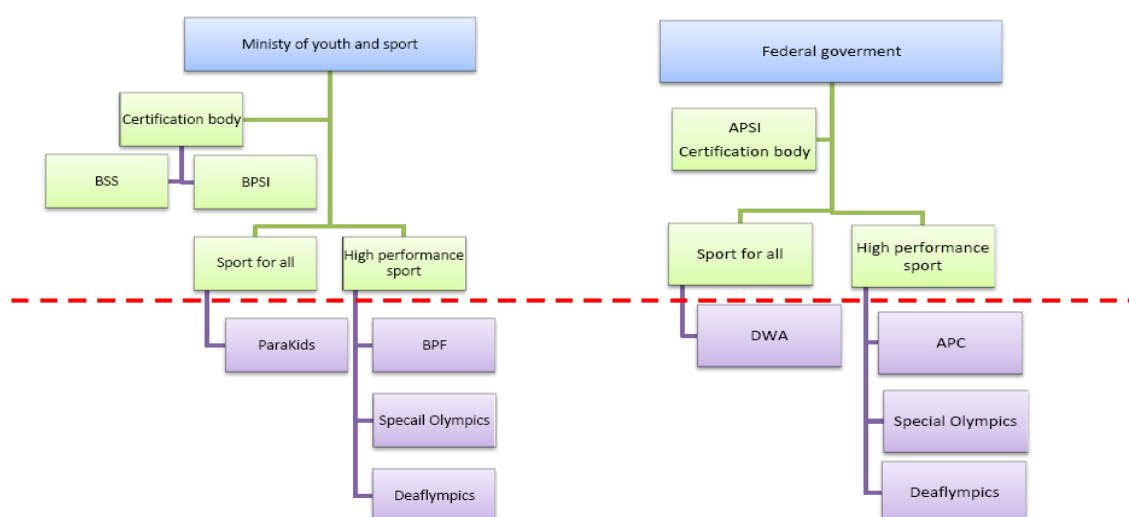


Figure 4 Connectivity scheme of organizations developing Skiing for people with disabilities in Bulgaria

Figure 5 Connectivity scheme of organizations developing Skiing for people with disabilities in Australia

We consider the similarities and differences between the countries in Table 1

Table 1 Comparative table of the elements in the organizational models of adapted skis in the countries Bulgaria, Finland, Israel, Australia and Canada

	Bulgaria	Finland	Israel	Australia	Canada
State structure responsible for and controlling sports	Ministry of Youth and Sports	Ministry of Education and Culture	Ministry of Culture and Sports	Government	Federal and provincial government
Certification experts - instructors in alpine sports	-BSU -BPSI	- FNASI	-EREZ - Israeli association of ski instructors	- APSI	-ACA
Qualified experts in the field of adapted skis		Certified instructors in alpine sports	Members of the Erez Foundation	Certified instructors in alpine sports	Certified instructors in alpine sports
Non-governmental organizations developing adapted skiing as an activity	-ParaKids	- VAU - Malike - Solia	-EREZ	-DWA	-CADS
Instructors, part of international organizations that develop adapted alpine skis	-SO	-FPC - SO -Deaflympics	-Israeli PC - SO -Deaflympics	-APC - SO -Deaflympics	-KPC - SO -Deaflympics
Forms of financing of activities related to adapted skiing	-Donations	-Taxes - Corporative donations - Government funding	-Donations	-Taxes -Donations	-Taxes -Donations
Staffing the process	-Experts	-Experts -Volunteers	-Experts -Volunteers	-Experts -Volunteers	-Experts -Volunteers

There are organizations certifying professional ski instructors in each of the countries, but not all of them offer additional qualifications for teaching adapted skis. The exception is made by the organizations in Bulgaria. Their experience in the field of snow sports and professional training is not small, but none of them has taken the initiative so far.

Adapted skis are well known as a sport in foreign countries, developed by NGOs with many years of experience. There are also organizations in Bulgaria that strive for accessibility to winter adapted physical activity.

Founded in 2016, ParaKids is providing accessible outdoor and indoor sports for people with disabilities. It is noteworthy that in some of the countries a partnership between NGOs and patient organizations has been developed, which we believe is a very good example. This shortens the distance and facilitates access to adapted skis for potential practitioners.

From the point of view of professional sport, in all countries there are substructures of international sports organizations such as International Paralympic Committee, Special Olympics and Deaflympics. However, on the territory of Bulgaria only Special Olympics has a program for adapted alpine skiing. This can be seen as a disadvantage, but also as an opportunity for the development of sports and especially inclusive sports in Bulgaria.

The provision of adapted skiing in the five countries is mainly based on revenues from donations. There are also revenues in the form of fees or membership fees, government funding. We believe that the maintenance and upkeep of the system for adapted skis only from donations is risky, but nevertheless the Erez Foundation demonstrates excellent results. The Finnish organization Malike also develops adapted skis thanks mainly to donations, but the interesting thing is that there is one main annual sponsor. Securing the costs through donation campaigns is possible and applies everywhere. In some countries, financial incentives are also available, such as a discount on a ski pass or the right to an escort who does not pay for a ski pass.

The presence of experts in the specific field is mandatory, but the presence of volunteers further expands the scope. The combination of professional ski instructors and volunteers has a highly developing social effect that affects even public attitudes. This is also a role model.

Field observations of adapted skiing classes in Bulgaria and around the world

For the implementation of any form of training it is necessary to organize and implement the events. This organization sets a framework for action, which implies the achievement of specific goals in specific conditions and circumstances.

In this study we have held 10 observations in 5 countries (Finland, Israel, Dubai, Italy and the Republic of Bulgaria) on 2 continents, combined in three groups according to the frequency of conduct- *Single, Episodic and Perennial*.

Single field observations

1. Israel – Adapted skiing training held at ski simulator

The purpose of the one-day event is to promote alpine sports among people with disabilities, given the freedom thanks to the descent and the gravitational forces .

The event, held on 5th Oct 2017, which was the subject of our observation, was attended by 1 coordinator, 3 experts, 39 participants (direct beneficiaries) and 20 volunteers, of which 6 are the highest level ski instructors (ISIA), and the rest - with average professional qualification. The duration is 5 hours and 30 minutes, starting at 16:30 and ending at 22:00 and is carried out on two simulators in the indoor ski center. The participants are completely beginners children and adults, from the categories of sit skiers and skiers with visual impairments.



Figure 6 First steps of monoskiers on a ski simulator with the help of adapted ski instructors from the Erez Foundation. Tel Aviv, Israel

2. Courmayeur - exchange of experience, knowledge and innovations part of a European project

One of our observations took place thanks to a European project for exchange of experience and innovative specialized alpine equipment.

The event lasted one day and the venue was Courmayeur, Italy. Experts from five European countries took part.

The aim of the project was to present two innovative, specialized alpine equipment - Troti ski and BAS board. Acquaintance with the principle of operation and methods of working with people took place on the track and the use of chair lifts.

Trotti skiing is designed for people with disabilities who have a deficit of balance, but could stand upright while leaning. The construction of the skis allows the implementation of only parallel skis, sliding and carving. A turn occurs when the handlebars are tilted to the side. No brakes, no poles. It could be managed on its own or with an instructor.

BAS board is a snowboard that meets the needs of people similar to those of the Trotti skis. With this equipment, the presence of an instructor is for most of the practice. There are few snowboarders who manage to use a BAS board on their own.



a.



b.

Figure 7 a. Innovative adapted ski equipment - Troti ski; b. Trotti test, Boyana Kotseva. Courmayeur, Italy.

3. Dubai - Training camp for adapted skiers, organized by the IPC

Pedagogical observation of a training camp for adapted skis for sit ski and skiers with VI, as well as a slalom competition for both categories of skiers, part of the sports calendar of

the IPC. The participants were from the three age groups described in the rules of the IPC, who have reached a minimum of 14 years of age. The training camp was designed for beginners and the competition for experts.



Figure 8 Participation in a training camp organized by the IPC. From left to right - Boyana Kotseva, Vladimir Gyurov, Yavor Froloshki. Dubai, UAE.

Thanks to technological advances and solid investments, an indoor ski slope has been built in Dubai, which is open all year round. It has a chairlift, a drag lift and a moving walkway. The track has a length of 350 m and a deviation of 85 m, with a diverse profile offering conditions for all skill levels from beginners to experts.

The program of the training camp lasted six days or 5 nights with a fixed daily routine (Table 2) and was intended mainly for beginners.

Table 2. Training camp program for adapted skiers in seated and blind categories to the IGC, held in Dubai

Date and time	07:00-09:00	09:00-10:00	10:00-12:00	12:30-13:00	13:00-14:30	15:00-17:00	17:30-19:00	19:30 -21:00
8.nov	Arrivals							
9.nov	Breakfast	Warm up	Snow session	Strechng	Lunch	Snow session	Strechng and workshop	Dinner
10.nov	Breakfast	Warm up	Snow session	Strechng	Lunch	Snow session	Strechng and workshop	Dinner
11.nov	Breakfast	Warm up	Snow session	Strechng	Lunch	Snow session	Strechng and workshop	Dinner
12.nov	Breakfast	Warm up	Snow session	Strechng	Lunch	Snow session	Strechng and workshop	Dinner
13.nov	Breakfast	Warm up	Snow session	Strechng	Lunch	Departure		

Episodic field observations

4. Finland - training sports camps for adapted skis

Sports camp "Try to ski" is held over three days or two nights and is organized by VAU and Malike with the support of FPC. The Himos ski area is equipped with two T-bars, one drag lift and one moving trail. The staff in charge of the lift facilities were pre-trained and instructed on how to assist the adapted skiers to keep the process safe. A wide variety of specialized ski equipment was provided for use by the Malike organization. We applied direct and inclusive monitoring of mono-skier training.

Participant in our pedagogical experiment was Annie Tuckman (Finland), who is 31 years old, beginner, with spinal cord injury, class LW 12. Observations, experience and expert opinions allow us to offer a model for initial training of a monoskier.

Learning phases illustrated in Figures 9, 10, 11, 12, 13:

1. Introduction to the equipment and its functions;
2. First steps:
 - Balance exercises;
 - Rotation / inversion techniques;
 - Moving back and forth by pushing with the outriggers;
 - Falling and straightening technique;
 - Use of the evacuation system from the lift facility;
3. Straight downhill running:
 - It is performed on a suitable terrain with a small slope and a flat part at the end. The monoski is placed on a base, and the outriggers slide parallel to the slope also on a base. The hands are on the sides of the body.
4. Turning with sliding (with instructor):
 - Performed on a wide track with a moderate slope - Blue track; necessarily with an instructor who is connected to the sit-ski by means of a belt approximately 3 meters long. The sit skier performs three consecutive actions to make the turn - looks in the direction of movement, leans forward in the direction of movement, uses the inner outrigger relative to the turn, turning it towards the center of the turn (the term "door opening" is used. The goal is to make connected turns.

The instructor uses skis that are 15 cm shorter than those he would use when training standing skiers, gives clear and concise verbal commands and, if necessary, controls the speed through a belt. The monoskier uses the lifts independently, and the belt connecting the

instructor is detached. Before starting the training, the instructor should get acquainted with the specifics of the disability of the participant in a dialogue with himself or his family. Two-way communication is extremely important and should not be neglected.

Annie Tackman went through the training process, forming the basic skills for practicing adapted skiing. She mastered the element of turning with sliding. At the beginning of the sports camp, it was difficult for her to use the T-bar lift. This reflected on the muscle fatigue in the hands, which subsequently affected the acquisition of basic skills.



a.



6.



B.

Figure 9 a., B., C. Sequence of balance exercises. Sitting skier - Annie Takman, instructor - Boyana Kotseva. Himos, Finland.



Figure 10 *Falling and getting up with the help of an instructor. From left to right - instructor Boyana Kotseva, professional adapted skier. Himos, Finland.*



Figure 11 *Study of a lift evacuation system. From left to right - sitting skier Annie Takman, instructor Boyana Kotseva. Chimos, Finland.*



Figure 12 *Straight downhill run*



Figure 13 *Learning the element turns with sliding*

On the territory of Bulgaria, observations were held of four training camps organized by the ParaKids project (Bulgaria), one training camp of a monoskier and two training camps of the Erez Foundation (Israel) was applied.

ParaKids - Adapted ski program - individual lessons and sports camps

ParaKids is a project of the Bulgarian non-governmental association Sports Club "Shark", which started in 2016. It basically offers access to children and people with disabilities to various sports and activities, both year-round and seasonal. One of the activities is adapted skiing and thus is one of the leading organizations carrying out this type of activity.



a.



6.

Figure 14 *a. First steps of a sitting skier; b. Adapted skier training for a person with VI. Opheliite area, Vitosha mountain.*

ParaKids provides individual activities and group training camps (Fig. 14 and 15) of adapted skis for all categories of skiers, in different ski areas throughout the country. The

strategy for planning and implementation of winter ski camps for people with disabilities, which the organization take into account of two main factors - the specifics of disability and the category of skier. Following this logic, during the winter season ParaKids organizes two training camps. The duration of each camp is four days or three nights, sit ski classes are held within two days. During the first day the participants are accommodated and get to know each other, and during the next two days they join four-hour classes with a lunch break of one hour. ParaKids has three specialized sit ski facilities - "HOC" and two monoskies,

One camp is aimed at children with mental disabilities (children with autism spectrum, children with Down syndrome, mental retardation, developmental disorders), who fall into the category of standing and use standard ski equipment. ParaKids selects small ski areas to suit the skills of the participants and is not expected to gather many people in one place. The winter ski camps, which were subject to pedagogical observation, took place in February 2018 in the resort "Semkovo" and in March 2019 in the ski slope "Zdravets", Plovdiv region.

The second type of camp is designed mainly for people with mobility impairments, who are in the category of sit skiers, but also include people with visual impairments. The main group of participants are children and adolescents, while the number of adults is very small compared to all others, and the skill level is beginner. The observation included sit ski camps held in March 2018 and March 2019 in Bansko.



a.



b.

Figure 35 *a. First steps of sit skier; b. Recreational adapted skiing. Bansko, Bulgaria.*

Erez - sports camps for adapted skiing, organized on the territory of the Republic of Bulgaria

In Israel, the snow days in Mount Haramon are not many. Due to this fact, the Erez Foundation organizes training camps for intermediate adapted skiers abroad. One of the destinations in the 2017/2018 season is Bansko, Bulgaria. We observed four camps for people with post-traumatic stress disorder, for sit skiers and those with amputations, for the skiers with VI, and, last but not least, for children and their families. Erez has partnered with ParaKids to implement adapted ski camps.



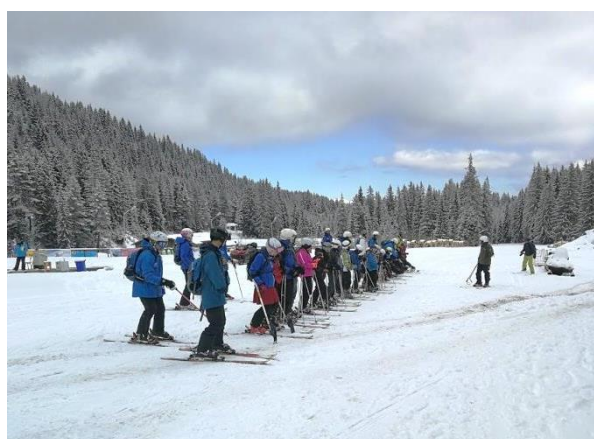
a.



b.



c.



d.

Figure 16 Adapted ski training camp for different categories of adapted skiers, organized by the Erez Foundation. Bansko, Bulgaria. a. Technique three tracks, first steps; b. Technique three tracks, turn with slide; c. Training of a sitting skier; d. Group practice of adapted skiers in different categories, developed skills for independent practice.

The duration of one camp is seven days or six nights. The adapted skiing classes are within five days, five hours a day with a lunch break of one hour plus short stops. We observe a strict daily routine.

It is impressive that the program of the camps organized by Erez pays special attention to the feedback from experts and volunteers at the end of each day. In these meetings, everyone shares their experience over the past day, the progress of the adapted skier, difficulties and successes. The chairman of the foundation, Eyal Yarimi, shares that ontime information directly affects the success of adapted skiers.



Figure 17 *Training activity for sit skiers. Improving a turn with a sliding. Bansko, Bulgaria.*

In addition to the feedback, the organization strives to promote Erez's activities through social media. According to Yarimi, sponsors must constantly see the effect of adapted skis and thus strengthen partnerships, but of course, and attract new supporters to recognize the cause.

Long - term field observations

Vladimir Gyurov has a spinal cord injury at the T3 level of the vertebrae as a result of a bicycle accident when he was a young man. His condition is paraplegia, which is expressed with zero sensitivity, no control of the lower limbs and abdominal muscles and falls into the category of sit skiers.

Vladimir got acquainted with the skis in Pamporovo thanks to an English organization visiting the ski resort in the 2017/2018 season. The facility with which he makes his first test is a bi-ski, managed by an expert. He shares that the emotion of adapted skis for him is big enough to invest money in personal sit ski equipment. He acquired mono sit skiing in

February of the same season and in his desire to practice on his own he connected with the ParaKids project.



Figure 18 Study of the ski equipment and first steps. Boyana Kotseva, Vladimir Gurov, Yavor Froloshki. Opheliite ski zone, Vitosha mountain.

The next classes in adapted skis are held in Pamporovo. Together with an English organization, he managed to practice for six days, during which he studied a turn with sliding. On the last day, the adapted skier managed to ski by his own. During his stay in the resort Pamporovo, Vladimir is studying how to use a chair lift. For a sit skier with an injury like his, it is a challenge to get on and off a chair lift on his own, which is why he is accompanied by skilled skiers or ski instructors.

At the end of the season, Vladimir was invited by the Bulgarian demo team to join the team's practice, held in Borovets within three days.

The 2018/2019 winter season for Vladimir starts in November, when he takes part in a training camp organized by the IPC in Dubai. Within five days, the sit skier practiced four hours on the slope and two hours in the gym (stretching and balance exercises).

In December, Vladimir joined a three-day training camp of the Erez and ParaKids Foundations. Professional sit skier Inbal Pesaro and expert volunteers arrive for this camp from Israel. The training sessions included four hours of training on the blue tracks with an hour of lunch break. The focus of this ski camp was to consolidate skills and learn a short turn with a small radius.

In March, Gyurov trained with the national demo team in the resort Pamporovo, as preparation for participation in an ensemble combination for presentation at the INTERSKI Congress. During the international event, Vladimir took part in the adapted ski workshops, where experts from different countries shared experience, techniques, methods and specialized ski equipment. Thanks to perseverance, practice and good expertise, at the end of the season Vladimir Gyurov managed to overcome a black track.



a.



b.

Figure 19 Congress INTER. a. and b. Sessions for sharing international experience in the field of adapted skis. Pamporovo, Bulgaria.

Tsvetan Baidanov contracted a degenerative disease that led to vision loss. Has minimal experience with alpine skiing since childhood. After losing his sight, Tsvetan did not practice snow sports until the winter season of 2016/2017, when he resumed his activities at the age of thirty, thanks to ParaKids. We follow his preparation during four consecutive winter seasons.

During the first season, the adapted skier participates in individual activities held on the ski slope Opheliite, Vitosha Mountain. When working with such a skier, the priority is the connection between the skier and the coach, coordinating commands and more. After the mutual development of communication mechanisms, tactile acquaintance with the skis and ski boots is started. Also the application of the equipment - putting on, taking off, buttoning, unbuttoning and wearing it.

In the first steps, an auxiliary device is used - a slalom pole, in order for the skier to feel safe. The elements of walking, turning and climbing the skier mastered in one astronomical hour, which includes enough repetitions to strengthen the skills. In this activity,

time was spent practicing falling and getting up, but without focusing on them to keep the beginner skier motivated. It took two astronomical hours to master a straight downhill run, a sliding and stopping snow plow, turns with snow plow. During the classes, the expert assists the skier through additional means such as a poles.

When developing skills for independent and controlled downhill skiing, the next challenge for the skier and his coach is the use of ski lifts, which on the ski slope Ophelia are drag lifts. As the eyes of his student, the trainer describes in detail the situation, the lift, the approach and the exit, the way of evacuation and imitation exercises. In most cases, the adapted skier gets on the lift first, followed by his coach. Communication during transport is of particular importance. Tsvetan learned to use the drag lift for an astronomical hour.



Figure 20 Warm-up before practical alpine skiing classes in front of MTSB "Ivan Staykov". Tsvetan Baidanov is part of the group of students from NSA "Vasil Levski". Vitosha Mountain

In the winter season 2017/2018, Tsvetan continues to practice alpine skiing with the ParaKids project. Took part in five individual activities on the Ophelia ski slope. With the assistance of the Snow Sports Department at the NSA "Vasil Levski", Tsvetan Baidanov participated in the winter course "Snow Sports" in March.

As the base is located on Vitosha Mountain, the meteorological features of the domed mountain apply, which are associated with rapid weather changes and windiness. This is important when working with a visually impaired skier. In conditions of wind, heavy snowfall

or rain, the communication between the adapted skier and his coach is obstructed, which increases the risks in terms of safety of all participants on the slopes and lifts.

The 2018/2019 season was analogous to the previous one for the preparation of Tsvetan Baidanov. The adapted skis started on the Ophelia ski slope with eight one-hour training sessions and a ten-day ski camp at the mountain training base "Prof. Ivan Staykov".

Tsvetan Baidanov's participation in mass events brings added value for the other participants. Few people have experience in communicating with people with disabilities. Thanks to the adapted skier, students were even able to "walk in his shoes", showing more tolerance, respect, attention and recognition to people with visual impairments, both in everyday life and on the piste.

The 2019/2020 season begins with individual training sessions on the Ophelia ski slope within 14 hours. The adapted skier learned to use a "moving path" type of climbing facility. It is challenging for people with VI, as they rely on kinetic energy and tactile sensations. During the tenth session, Tsvetan together with his coach managed to overcome obstacles on the track in the form of a slalom track for amateur children. It took three attempts to cross the whole route without mistakes and falls.

The preparation of Tsvetan during the winter season includes two visits to the resort Borovets. During the first visit, the adapted skier practices alpine skiing at the bottom of the resort, on blue slopes. The progress that Tsvetan is learning to use a chair lift. The second visit takes place on the slopes in the upper part of Borovets. access to it is via a gondola lift, which was also a new facility for Tsvetan.

Analysis of the attitude of professional ski instructors to work with people with disabilities

Informed instructors who can meet the unique needs of people with disabilities are an essential component of adapted snow sports programs (Mavritsakis, et.al. 2019). We conducted a survey among Bulgarian professional ski instructors, which is based on the Theory of Planned Behavior.

We apply factor analysis in order to reduce the dimensionality of the space from the observations without significant loss of information. We want to determine a number of latent (unobservable) quantities - factors.

We check the overall sample adequacy by applying the Kaiser-Meyer-Olkin sample adequacy measure known as (KMO and Bartlett's Test). The test result is applied in Table 3.

Table 3 *KMO and Bartlett's Test - Sample adequacy measure*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	KMO	.626
Bartlett's Test of Sphericity	Approx. Chi-Square	579.602
	df	253
	Sig.	.000

We compare the result obtained from (KMO - Bartlett's) test with the Cronbach coefficient Alpha (α). The result of (CMO) test = 0.626 - assumes values for α between $0.6 \leq \alpha < 0.7$ this shows us an "acceptable" (for all statements) sample adequacy.

Table 4 presents the results of the total, as well as for each factor, explained variation during the three main stages of the analysis: initial factor weights; extraction; rotation of factor weights.

Table 4 *General explained variation for four factors*

Compo-nents	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Vari-ance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulati ve %
F1	4.729	27.819	27.819	4.729	27 .819	27 .819	3.372	19 .834	19 .834
F2	2.269	13.349	41.168	2.269	13 .349	41 .168	2.995	17 .618	37 .451
F3	2.008	11.812	52.980	2.008	11 .812	52 .980	2.117	12 .454	49 .905
F4	1.506	8.856	61.836	1.506	8 .856	61 .836	2.028	11 .930	61 .836

The total explained variation in the 4-factor model is nearly 62%. A very satisfactory result in the relationship: number of factors / explained variation.

The first factor is conditionally called "Debt to society". Indicators of the first factor are the variables are listed in Table 7.

Table 7 *Factor 1 indicators*

F1.1. To repay your society is:	.743	K
1.2. The attachment to people with disabilities is:	.722	K
1.3. I feel very confident in my ability to connect with people with disabilities.	.658	S
1.4. Working with people with disabilities who may be difficult to train due to the fact that they cannot always control their actions is:	.641	K
1.5. To have fun through sports and to gain unique experience with people with disabilities is:	.620	K
1.6. I can play sports or be on the same team with people with disabilities.	.541	S
1.7. I would train people with disabilities in my free time.	.514	F

The second factor is conditionally called "Self-satisfaction", as its indicators are as follows in Table 8.

Table 8 *Factor 2 indicators*

F2.1 The feeling of self-satisfaction is:	.846	K
2.2. Helping people with disabilities to play sports and giving them a chance to achieve something is:	.799	K
2.3. Do you think that people with disabilities have the right to access winter sports?	.772	F
2.4 Meeting people who are different and gaining experience working with them is:	.666	K

We definitely call the third factor "demographic". Its self-grouped demographics are expressed in Table 9.

Table 9 *Factor 3 indicators*

F3.1 Ski instructors level	.757	Q
3.2 Professional experience	.672	Q
3.3 Sex	-.618	Q
3.4 I think I have a good knowledge of how to train / train people with disabilities.	.558	S

The fourth factor can be conditionally called "Perceived behavioral control". With indicators presented in Table 10.

Table 10 *Factor 4 indicators*

F4.1 I believe that working with people with disabilities should be paid.	-.807	F
4.2 I would work with people with disabilities without pay.	.755	F

Table 11 shows the statistically processed data from the survey according to the variation analysis. The values of the coefficient of variation vary from 7% to 43% with the exception of indicators K10, K11 and F17, which reach very high values. For most of the tabular indicators there is a normal distribution, except for the cited three parameters.

Table 11 *Variation matrix*

Показатели	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11	S12	S13	S14	F15	F16	F17	F18
X	6,57	5,68	6,82	5,93	6,64	5,86	6,04	6,75	5,82	2,21	1,68	5,32	4,46	5,96	6,11	5,61	4,25	6,75
S	0,98	1,73	0,47	1,33	0,77	1,12	1,43	0,57	1,28	2,21	1,54	1,51	1,94	1,45	1,08	1,74	2,32	0,69
V	15%	31%	7%	23%	12%	19%	24%	9%	22%	100%	92%	28%	43%	24%	18%	31%	55%	10%
As	-2,62	1,43	-2,81	0,62	-2,28	0,34	1,86	2,31	0,61	1,60	2,52	0,72	0,18	1,27	0,94	0,94	0,21	-3,09
Ex	2,64	1,31	13,60	0,69	2,20	1,12	2,41	9,51	0,94	0,61	7,65	0,57	1,39	0,92	0,89	0,59	1,19	11,78
Max	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00	7,00
Min	3,00	1,00	4,00	1,00	4,00	4,00	1,00	4,00	3,00	1,00	1,00	1,00	1,00	2,00	1,00	2,00	1,00	4,00
R	4,00	6,00	3,00	6,00	3,00	3,00	6,00	3,00	4,00	6,00	6,00	6,00	6,00	5,00	6,00	5,00	6,00	3,00

We apply a method for testing the hypotheses for normality of the distributions in Tables 12, 13, 14 and 15, calculating the P-value of the test criterion - χ^2 (chi square) of Pearson.

Table 12 *Linear Pearson correlation, Factor 1*

Chi-Square Test	Value	df	Significance (2-sided)
Pearson Chi-Square	34.944^a	20	.020
Likelihood Ratio	32.765	20	.036
Linear-by-Linear Association	12.127	1	.000
N of Valid Cases	65		
a. 26 cells (86.7%) have expected count less than 5. The minimum expected count is .03.			

Table13 *Linear Pearson correlation, Factor 2*

Chi-Square Test	Value	df	Significance (2-sided)
Pearson Chi-Square	99.159^a	9	.000
Likelihood Ratio	24.894	9	.003
Linear-by-Linear Association	29.643	1	.000
N of Valid Cases	65		

Table 14 *Linear Pearson correlation, Factor 3*

Chi-Square Test	Value	df	ASignificance (2-sided)
Pearson Chi-Square	70.652^a	9	.000
Likelihood Ratio	25.939	9	.002
Linear-by-Linear Association	22.201	1	.000
N of Valid Cases	65		
a. 14 cells (87.5%) have expected count less than 5. The minimum expected count is .03.			

Table 15 *Linear Pearson correlation, Factor 4*

Chi-Square Tests	Value	f	A Significance (2-sided)
Pearson Chi-Square	13.232^a		.040
Likelihood Ratio	14.243		.027
Linear-by-Linear Association	4.925		.026
N of Valid Cases	65		

In Table 16 we observe a logical pattern - with the increase of the ski instructor class the confidence in the knowledge for training people with disabilities increases. Nearly 28% of class C / ISIA fully agree with this statement at the expense of about 9% of class A.

Table 16 *Ski instructors level * I think I have a good knowledge of how to train, train people with disabilities.*

Ski instructors level	I think I have a good knowledge of how to train, train people with disabilities.							Total
	Absolutely disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Absolutely agree	
A	Count	5	9	5	4	1	5	32
	%	15.6%	28.1%	15.6%	12.5%	3.1%	15.6%	100.0%
B	Count	0	1	3	3	2	5	15
	%	0.0%	6.7%	20.0%	20.0%	13.3%	33.3%	100.0%
C/ISIA	Count	2	3	1	3	0	4	18
	%	11.1%	16.7%	5.6%	16.7%	0.0%	22.2%	100.0%
Total	Count	7	13	9	10	3	14	65
	%	10.8%	20.0%	13.8%	15.4%	4.6%	21.5%	100.0%

In Table 17, however, we observe a not very logical pattern - with a decrease in the class of ski instructor increases the percentage of those who absolutely agree with the statement that work with people with disabilities should be paid.

Nearly 34.5% of Class A fully agree with this statement at the expense of 5.6% of Class C / ISIA. It turns out that those who are more insecure about this task are more likely to get paid for it than those who are more confident. From this we can conclude that the lack of awareness of lower class ski instructors about the difficulties that accompany the implementation of this type of task - training people with disabilities, is the probable reason for the self-confidence they show.

Table 17 *Ski instructor's level * I think that working with people with disabilities should be paid.*

<i>Ski instructor's level</i>		I believe that working with people with disabilities should be paid.						Total
		Absolutely disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Absolutely agree
A	Count	4	2	1	4	5	5	11
	%	12.5%	6.3%	3.1%	12.5%	15.6%	15.6%	34.4%
B	Count	2	1	0	2	1	4	5
	%	13.3%	6.7%	0.0%	13.3%	6.7%	26.7%	33.3%
C/ISIA	Count	5	2	1	7	1	1	1
	%	27.8%	11.1%	5.6%	38.9%	5.6%	5.6%	5.6%
Total	Count	7	11	5	2	13	7	10
	%	10.8%	16.9%	7.7%	3.1%	20.0%	10.8%	15.4%

Men feel more prepared about how to train people with disabilities (Fig. 21). Only 2.6% of them completely disagree with this statement. While women close to her believe that they have absolutely no confidence in coping with this type of task.

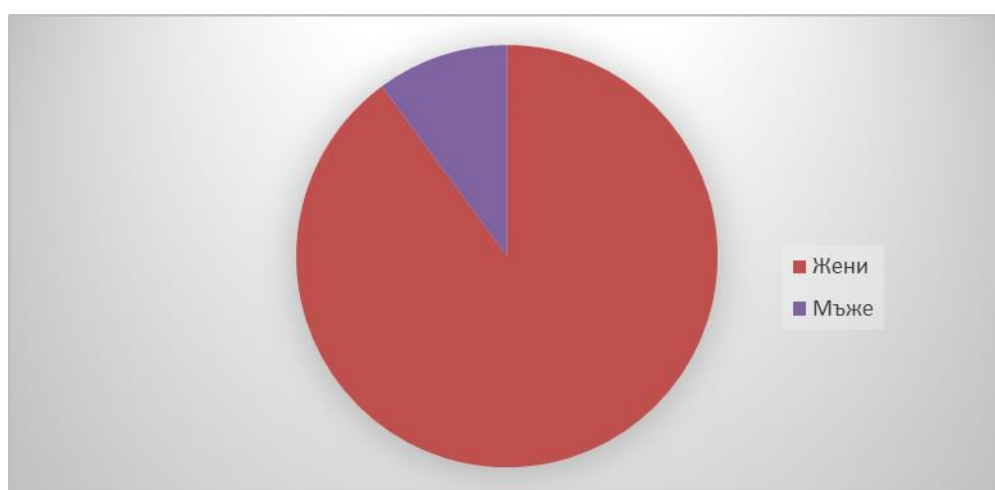


Figure 21 *Gender * Absolutely disagree that they have a good knowledge of how to train people with disabilities*

In general, there is no strong confidence in either sex. We see that the result of the table is almost proportionally distributed, there is no accumulation in a specific segment of the scale (Fig. 22).

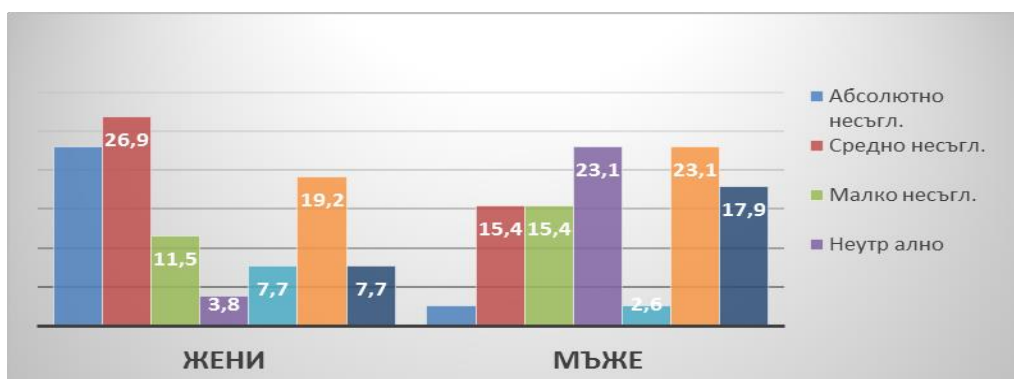


Figure 22 Gender * *I think I have a good knowledge of how to train people with disabilities*

With the increase of the absolutely agreeable ski instructors to work with people with disabilities without remuneration (Fig. 23), the number of those who absolutely agree that the work with these people should be paid also increases (Fig. 24).

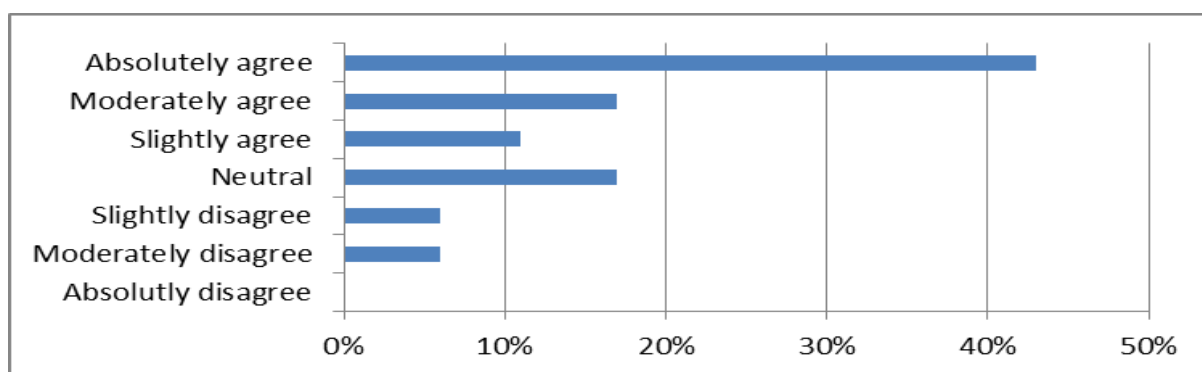


Figure 23 *Distribution of responses to the statement "I would work with people with disabilities without pay"*

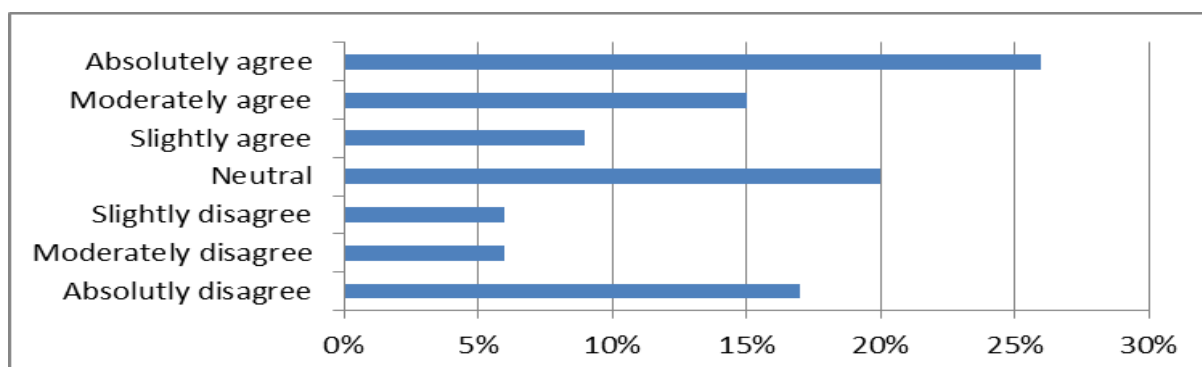


Figure 24 *Distribution of responses to the statement "I think that working with people with disabilities should be paid"*

CONCLUSIONS

1. The accessibility of winter resorts and ski areas in the Republic of Bulgaria is possible, but not satisfactory. There are few places where state requirements are met with empathy for different people.
2. People with disabilities in Bulgaria are increasingly looking for opportunities of a variety of physical activities, one of which is adapted skiing. There are those who want it, but the supply is scarce or not available at all.
3. The geographical coverage of ski resorts and ski areas is large enough to meet the needs of adapted skiers, regardless of their category or skills.
4. The model of sports management in the Republic of Bulgaria is similar to those of other countries where adapted skis exist as a system. However, there is no national framework in the country and the activity is slow, thanks to two non-governmental sports organizations, Special Olympics and ParaKids.
5. Certification bodies have not yet taken the initiative to train professional teaching staff in the field of adapted skiing.
6. The conducted field observations of various forms of organization and conduct of classes in adapted skis around the world and in our country give us direct information about good practices. .
7. Professional ski instructors, as a human resource, are a key unit in the development of adapted skis.
 - The guild has a positive attitude towards working with people with disabilities;
 - The lack of information and methodology makes ski instructors feel insecure and unprepared to teach adapted skiing;
 - The motivation to carry out such specific work is linked to a desire for financial remuneration,.

RECOMMENDATIONS

Taking into account the current state and the available opportunities for practicing adapted skis on the territory of the Republic of Bulgaria, we have the following proposals:

1. Improving the accessibility of the infrastructure elements and their connectivity in the Bulgarian ski resorts and ski areas.
 - Tourist infrastructure: The Ministry of Tourism together with the municipalities to conduct an information campaign on the benefits of compliance with accessibility requirements.
 - Ski areas and Specialized climbing facilities: Concessionaires and owners of specialized climbing facilities (lifts and ski lifts) to commit to conduct annual training of lift operators to assist people with disabilities. Where it is necessary to create special corridors for passing through a "ski date". To have accessible toilets for people with disabilities, which can be reached comfortably and safely.
2. Preparation and application of methodological trainings in adapted skis, as an additional qualification for professional ski instructors.
3. To ensure the sports activity of adapted skis on the territory of the Republic of Bulgaria, we propose to have at least two trained experts employed all season round in the large ski resorts of Bansko, Borovets and Pamporovo.
4. In addition to qualified experts, it is necessary to have specialized ski equipment. We recommend in the big ski resorts (Bansko, Borovets and Pamporovo) to have 2 pcs. ski facilities, and additional and varied equipment to be offered by an organization responsible for storage and maintenance.
5. Similar to the international models of organization and management of the system of adapted skis at the national level, we propose the coordination and development of the activity (such as mass sports) to be concentrated in one organization. As ParaKids has been carrying out similar activities since 2016, it is suitable to take on the role of an information platform and a link between people with disabilities and ski schools and instructors. We do not rule out the possibility of creating another organization or unit.
6. As an inclusive sport, adapted skis to be included in the sports calendar of the Bulgarian Ski Federation. To have two quotas in different disciplines and age

groups. In addition to Special Olympics, the Bulgarian Paralympic Association and Deaflympics to conduct training programs in adapted skis.

7. To prepare a unified strategy for the development of adapted skis at the national level, which will set standards and requirements for the implementation of the activity in all its aspects.
8. We recommend a campaign to promote the activity, through which information reaches people with disabilities and society as a whole.

SCIENTIFIC AND PRACTICAL CONTRIBUTIONS

1. The lack of specific research and published data on adapted skiing as an activity and as a system in Bulgaria gives reason to believe that this first study on the issues raised in the topic needs to be continued.

2. The results of the study have an immediate practical value that can be used as a starting point in the development of adapted skis at national level.

PUBLICATIONS ON THE TOPIC OF THE DISSERTATION

1. Коцева Б., Кр. Згуровски, П. Косева – Характеристика на специализирана ски екипировка за хора с увреждания. Сп. Спорт & Наука, БПС ООД, бр.2/2014, с. 35-43, ISSN: 1310-3393
2. Kotseva B., K. Zgurovski – Management of a sport event for adapted skiing. 9th FIEP European Congress and 7th International Scientific congress “Sport, Stress, Adaptation”, Scientific Journal, Sofia, Bulgaria, 2014, p.882-884, ISSN: 2367-458X
3. Kotseva B. – Are professional ski instructors in Bulgaria ready to work with people with disabilities. International Scientific Congress “Applied Sport Sciences”, NSA Press, Sofia, Bulgaria, 2019, p.174-176, ISBN: 978-954-718-601-9, ISBN: 978-954-718-602-6