# Conditioning of participation of disabled males and females from eastern regions of Poland in tourism and recreation\*

Józef Bergier, Dominik Dabrowski, Jarosław Żbikowski

John Paul II State Higher Vocational School, Biała Podlaska, Poland

# ■ Abstract

Disability is a serious social, cultural and economic problem, the solving of which requires both legal regulations and coordinated activities by the State. A constantly increasing number of the disabled is an important premise for undertaking actions aimed at complex rehabilitation of this population group, and their engagement in social and economic life. Creating possibilities for spending free time in an attractive way, in accordance with one's interests and needs, is an essential area of rehabilitation activities. In 2005, the Institute of Tourism and Recreation at the State Higher Vocational School in Biała Podlaska launched representative, complex studies concerning the social conditioning of involvement of the disabled from the regions of Eastern Poland in tourism and mobile recreation. The presented material is an excerpt from this study report. It concerns barriers which limit or make it impossible for disabled males and females to participate in tourism and mobile recreation in the regions of Lublin, Rzeszów, and Białystok. Among barriers, which to the highest degree limit the participation of the disabled in tourism and recreation, the respondents indicated their poor material standard. Other important barriers were inconveniences associated with transport, lack of up-to-date information, and type of disability. The barriers limiting motor activity were also analyzed according to gender. Statistically significant differences were observed between males and females with respect to the following characteristics: transport, lack of adequate information, lack of offer of activities, and lack of assistance. It is noteworthy that males more strongly than females emphasized such barriers as lack of information, offer of assistance, while females indicated the problems with transport.

# Key words

disabled, gender, tourism and recreation

\*The study was conducted within the project: State Rehabilitation Fund for the Disabled Population (PFRON): 'Social conditioning of participation of the disabled from eastern Poland in tourism and mobile recreation' performed by the State Higher Vocational School in Biała Podlaska during the period 2005-2007. Principal investigator: Prof. Józef Bergier; in the performance of this research project there also participated: Dr Barbara Bergier, Dr Dominik Dąbrowski, Dr Zofia Kubińska, Dr Danuta Nałęcka, doc. dr Jarosław Żbikowski and Elżbieta Szczygielska MA.

### INTRODUCTION

The variety of environmental barriers encountered by the disabled, in addition to them being aware of such limitations, results in a threat to the sense of freedom while undertaking decisions concerning participation in physical activity or forms of tourism. It also exerts an effect on the extent of experience and satisfaction with participation in these activities. Any form of activity undertaken out of necessity may bring about merely frustration and disappointment, instead of the anticipated leisure and pleasure.

Smith [1] carried out the most comprehensive classification of barriers for the disabled. He distinguished three major categories of limitations, considering those which were most specific for the environment discussed:

internal, inherent in an individual, associated with his/her physical and mental condition or state of consciousness.
Into this group of barriers the researcher classified: deficiency of knowledge and awareness (concerning the possibilities of practicing tourism, availability of facilities, as well as rights accruing to the disabled and methods of using support funds), problems related to the state of

health (not only mobility capabilities, but also physical pain often accompanying disability), distortion of social contacts (frequently resulting from social isolation, or overprotectiveness on the part of the environment), physical and psychical dependence on others;

- environmental, imposed on the disabled, external physical and social conditions, which cover the following: barriers resulting from attitudes demonstrated by the surroundings, architectural barriers (inaccessibility of facilities such as hotels, restaurants and tourist attractions (especially those in wheelchairs), ecological barriers (e.g. in relation with terrain conditions hindering mobility, unfavourable weather, etc.), transport limitations, and discriminatory regulations;
- interactional, from the sphere of interaction of the disabled with their environment, both physical and social, which cover limitations in undertaking various forms of tourist activity, requiring specific skills, not always accessible for individuals with disability, as well as transport barriers and communication barriers, which may be intensified by the type and degree of disability.

Other types of limitation described by many researchers are those of an economic nature, considered as a phenomenon typical of and attributed to general tourism, which occur irrespectively of the category of consumers. Economic conditions, including: high costs of travel, stay, renting

Address for correspondence: Józef Bergier John Paul II State Higher Vocational School, Sidorska 95/97, 21-500 Biała Podlaska, Poland e-mail: a.derlukiewicz@pswbp.pl

Received: 13 March 2011; accepted: 09 December 2011

tourist equipment, as well as lack of access to cheap tourist infrastructure. Additionally, the low income of the disabled tourists affect in a specific way the possibilities to select the type of consumption, and the variety of tourist experiences. Economic limitations are the major obstacle in access to tourism, mainly for individuals who maintain themselves primarily on different types of social support funds, and those who require more material support and personal assistance.

According to Murray and Sproats [2], among the limitations hindering access to tourism are: economic and physical barriers, and those resulting from social attitudes towards the disabled.

All the above-mentioned limitations are closely correlated, mutually interact and enhance each other, thus hindering the disabled not only in their access to tourism, but also the possibilities of choice of its forms.

In the relevant Polish literature, the problem of barriers hindering access to tourism by the disabled is hardly mentioned. Attempts have only been made to locate these limitations within a general scheme of barriers related with participation, integration, and opportunities to overcome these barriers, as proposed by Ostrowska and Sikorska [3]. The scheme presented by the researchers demonstrates an individual approach focused on limitations in functioning – the situation of an individual, with the social concept displaying attitudes of the environment towards the disabled, functioning of external institutions and family.

Despite the lack of a separate systematization of participation and integration barriers, Łobożewicz [4] paid attention to the importance of the following seven barriers: urbanistic, architectural, transport-related, social, lack of tourist equipment, high costs of participation in various forms of practicing tourism, in addition to low income of the disabled, insufficient information concerning their tourist needs and the possibilities to satisfy these needs.

Among many environmental barriers, the participation or lack of participation of the disabled in motor activity occupies the first position, as reported by: Berman et al. [5], Nichols et al. [6], Terry [7], Burnett et al. [8], Putnam et al. [9], Ray et al. [10], Kwai-sang You et al. [11], Shaw, Coles [12], Buhalis et al. [13], Daniels, et al. [14], Rudnick [15], King et al. [16], and Liberman et al. [17].

In recent years in Poland, this problem in relation to various types of disability has been undertaken by: Borowiec [18], Bergier, Dąbrowski [19], Bergier B, Bergier J, Grudniewski T [20].

**Objective.** The main objective of the study was recognition of factors which determine an active engagement of the disabled in tourism and recreation, and indication of differences according to gender. Considering the objective and scope of the study, not all determinants have been discussed in detail. Some have only been mentioned. However, these factors cannot be omitted due to their interdependence, cooccurrence and mutual enhancement, as well as a frequent lack of possibilities to unequivocally specify them by the respondents themselves.

The analysis is based on the research problem concerning the effect of the variety of factors which determine the disabled involvement in tourism and recreation: What factors to the greatest degree limit the participation of the disabled in tourism and recreation?

# **MATERIALS AND METHODS**

The study material was collected by means of a survey conducted with the use of a questionnaire among the disabled inhabitants of the regions of Lublin, Rzeszów and Białystok.

The survey was carried out during 2005 - 2007 among 750 randomly selected disabled inhabitants of the eastern regions of Poland. The representative group was selected by means of the method of stratified sampling, where the main strata were: region, urban-rural, female-male, and degree of disability. As much as 100% from among the 750 respondents were legally disabled, i.e. possessed an appropriate, valid decision issued by the relevant authority and ascribed one of three degrees of severity. In the study, the current definition of disability by the WHO was adopted: International Classification of Functioning. Disability and Health, ICF, 2001, which combines medical and social models.

The study was conducted by the method of a diagnostic survey. The number of questionnaire forms at individual strata was proportional to the percentage of the disabled in a stratified region. The collected material was analyzed statistically, and percentage distribution was presented, while the relationships between the variables were investigated with the use of Chi-square test for independence. The analysis focused on the evaluation of limitations according to their importance on a 5-degree scale, from: 1 score – the least important to 5 scores – the most important.

It is noteworthy that in the regions analyzed, the education level of the disabled is the lowest. Over 50% of the disabled in these regions possess elementary or incomplete elementary education, while less than 5% have a university education level; secondary school and vocational school education is possessed by 33.9 % of the disabled in Białystok Region, 37.9% in Lublin Region, and 41.8% in Rzeszów Region. Among the total number of respondents there were 49.7% of males and 50.3% of females. The percentages of males and females in individual regions were similar. The largest group in the study were the disabled aged 25 – 34 (25.2% of the total number of respondents): in Białystok Region - 33.8%, in Rzeszów Region - 32.4%, and in Lublin Region – 17.2%; followed by those aged 16–24, and 35-44. The percentage of the disabled at the age of retirement was the lowest. The education level was as follows: the largest group were those with elementary vocational education -53.1% in Rzeszów Region, 29.8% in Lublin Region, and 23.1% in Białystok Region. Complete elementary school education was reported by 42.5% of respondents from Białystok Region, 32,0% from Rzeszów Region, and over 20% of those living in the Lublin Region. The percentage of respondents who possessed college or university education level was the lowest. Among the total number of the disabled examined, 56.3% were rural inhabitants, and 43.7% lived in the urban areas. According to individual regions, the distribution according to place of residence was as follows: in Lublin Region there were 57.5% of rural and 42.5% of urban inhabitants, in Białystok Region - 44.8% and 55.2%, respectively, and in Rzeszów Region – 60.9%, and 39.1%, respectively.

### **RESULTS**

Among the barriers limiting to the greatest extent the participation in tourism and recreation (Tab. 1), the respondents first of all indicated costs (51.1%), followed by: Józef Bergier, Dominik Dąbrowski, Jarosław Żbikowski. Conditioning of participation of disabled males and females from eastern regions of Poland in tourism...

problems related with transport (18.0%), lack of information (14.0%), and type of disability (13.6%). To the lowest degree, these barriers were: own anxiety/fear (46.7%), lack of assistance expected from others (40.5%), as well as lack of evoked interest in the forms of motor activity (38.7%). The analysis showed a statistical relationship on the level of p<0.05 between gender and selected characteristics limiting the participation of the disabled in tourism and recreation, or making it impossible (Tab. 2-10).

**Table 1.** Factors limiting or rendering impossible an access to tourism and recreation in opinions of males and females in the survey

Type of determinant		Level of importance of reply							
	1	2	3	4	5	Total			
Costs	7.0%	5.6%	11.9%	24.3%	51.1%	100.0%			
Transport	23.6%	17.5%	18.1%	22.8%	18.0%	100.0%			
Anxiety	46.7%	20.2%	13.7%	9.3%	10.0%	100.0%			
Type of disability	33.4%	22.2%	17.3%	13.5%	13.6%	100.0%			
Lack of information	29.8%	16.6%	20.0%	19.7%	14.0%	100.0%			
Lack of assistance	40.5%	20.8%	15.8%	14.4%	8.6%	100.0%			
Lack of offer	34.4%	18.7%	19.1%	16.4%	11.4%	100.0%			
Lack of infrastructure	33.6%	20.5%	19.4%	16.4%	10.1%	100.0%			
Lack of interest	38.7%	19.2%	19.5%	13.1%	9.5%	100.0%			

The study showed that the disabled considered economic barriers as the most important determining their participation in the forms of tourism and recreation (Tab. 2). It should be considered that these barriers were most frequently mentioned by males (50.8%), although it was also indicated by females while selecting forms of tourism or recreation (49.2%).

**Table 2.** Importance of costs limiting or rendering impossible the selection of tourist and recreation forms, by gender.

Gender		Level of importance of costs					
	1	2	3	4	5	Total	
Females	7.29%	5.47%	11.20%	22.92%	53.13%	49.17%	
Males	6.80%	5.79%	12.59%	25.69%	49.12%	50.83%	
Total	7.04%	5.63%	11.91%	24.33%	51.09%	100.00%	

 $\chi^2$ =1.64; df=4; p=0.799

The respondents evaluated the limitation related with transport as important, but not the most important; therefore, the statistical analysis concerned only two levels of significance (4-5).

Communication difficulties were reported to a higher degree by females (19.1%) than males (16.9%) (Tab. 3). A statistically significant relationship was observed between the type of barrier and gender (p=0.04).

**Table 3.** Importance of transport limiting or rendering the choice of forms of tourism or recreation impossible, by gender

Gender	Level of importance of transport						
	1	2	3	4	5	Total	
Females	22.45%	14.10%	21.15%	23.24%	19.06%	49.17%	
Males	24.75%	20.71%	15.15%	22.47%	16.92%	50.83%	
Total	23.62%	17.46%	18.10%	22.85%	17.97%	100.00%	

 $\chi^2$ = .72; df=4; p=0.045

The role of information concerning access and potential possibilities to use tourist and recreation services by those with various degrees and types of disability is essential in everyday life. Full awareness of limitations which may be encountered by the disabled in tourist or recreation facilities frequently result in a passive attitude towards their participation. The problem of 'general accessibility' of a facility is often encountered which, in practice, means the provision of information pertaining entry to a building, and passage towards the reception area.

Based on respondents' opinions, the lack of information concerning tourist and recreation offers for the disabled occupied the lowest position with respect to importance. Despite this, the majority of the relationships noted in this analysis were statistically significant (p<0.05). This barrier is of a more personal character, and associated with some organizational lack of resources by the respondents and their closest surroundings in obtaining information. The above-mentioned difficulties concerned males and females at a similar level (Tab. 4).

**Table 4.** Importance of lack of information hindering or rendering the selection of forms of tourism and recreation impossible, according to respondents' gender

Gender	Level of importance of information					
	1	2	3	4	5	Total
Females	34.13%	15.61%	20.37%	19.31%	10.58%	49.35%
Males	25.52%	17.53%	19.59%	20.10%	17.27%	50.65%
Total	29.77%	16.58%	19.97%	19.71%	13.97%	100.00%

 $\chi^2$ =11.44; df=4; p=0.022

Seemingly, the type of disability as a barrier in the community for the disabled would be obvious; however, according to the respondents, poor health status was not the primary barrier limiting access to the forms of tourism and recreation. The limitations related to disability cause problems not only with leaving one's own environment (flat, house), but also with the performance of many basic activities, and satisfaction of essential needs, which are frequently dependent on assistance from others.

In the study, no statistically significant relationship (p>0.05) was observed between gender and type of respondents' disability (Tab. 5). Females more frequently than males mentioned barriers limiting their participation in tourism and recreation (15.7% and 11.7%, respectively).

**Table 5.** Importance of type of disability limiting or rendering the selection of forms of tourism and recreation impossible, according to respondents' gender

Gender	Level of importance of the type of disability					
	1	2	3	4	5	Total
Females	34.83%	19.94%	15.17%	14.33%	15.73%	47.98%
Males	32.12%	24.35%	19.17%	12.69%	11.66%	52.02%
Total	33.42%	22.24%	17.25%	13.48%	13.61%	100.00%

 $\chi^2$ =6.37; df=4; p=0.173

The lack of offers as a barrier affecting participation by the disabled in the forms of tourism and recreation, was more often indicated by males than females (13.4% and (9.3% respectively) (Tab. 6). A statistically significant relationship was observed on the level p < 0.01.

Józef Bergier, Dominik Dabrowski, Jarosław Żbikowski. Conditioning of participation of disabled males and females from eastern regions of Poland in tourism...

**Table 6.** Importance of lack of offers limiting or rendering impossible the selection of forms of tourism and recreation, by respondents' gender

Gender	Level of importance of the lack of offers					
	1	2	3	4	5	Total
Females	40.43%	14.36%	18.35%	17.55%	9.31%	48.83%
Males	28.68%	22.84%	19.80%	15.23%	13.45%	51.17%
Total	34.42%	18.70%	19.09%	16.36%	11.43%	100.00%

 $\chi^2$ =18.85; df=4; p=0.001

No significant differences were noted in the respondents replies according to gender (p>0.05) with respect to the lack of infrastructure for participate in tourism and recreation (Tab. 7). Males more frequently than females reported the problem of the lack of facilities as a factor on which may depend participation in forms of tourism and recreation (13.4% and 9.3%, respectively).

**Table 7.** Importance of lack of infrastructure limiting or rendering impossible the selection of forms of tourism and recreation, by respondents' gender

Gender	Level of importance of infrastructure							
	1	2	3	4	5	Total		
Females	37.57%	18.25%	18.25%	16.14%	9.79%	49.09%		
Males	29.85%	22.7%	20.41%	16.58%	10.46%	50.91%		
Total	33.64%	20.52%	19.35%	16.36%	10.13%	100.00%		

 $\chi^2$ =5.84; df=4; p=0.212

While analyzing by gender the level of anxiety limiting or rendering impossible the selection of tourism and recreation forms, a slightly higher level of anxiety was noted in females; however, this relationship was not statistically significant (p=0.17) (Tab. 8).

**Table 8.** Importance of anxiety limiting or rendering impossible the selection of forms of tourism and recreation, by respondents' gender

Gender	Level of importance of anxiety						
	1	2	3	4	5	Total	
Females	45.21%	17.82%	15.16%	10.11%	11.70%	50.07%	
Males	48.27%	22.67%	12.27%	8.53%	8.27%	49.93%	
Total	46.74%	20.24%	13.72%	9.32%	9.99%	100.00%	

 $\chi^2$ =6.42; df=4; p=0.170

No statistically significant differences by gender were found with respect to the lack of respondents' interest in participation in the forms of tourism and recreation (Tab. 9).

**Table 9.** Importance of lack of interest limiting or rendering impossible the selection of forms of tourism and recreation, by respondents' gender

Gender		Level of importance of the lack of interests					ests
	-	1	2	3	4	5	Total
Females	38	8.82%	18.53%	17.94%	14.41%	10.29%	50.22%
Males	38	8.58%	19.88%	21.07%	11.87%	8.61%	49.78%
Total	3	8.70%	19.20%	19.50%	13.15%	9.45%	100.00%

<sup>&</sup>lt;sup>V2</sup>=2.36; df=4; p=0.671

While discussing the barrier concerning the lack of assistance (Tab. 10), as expected by the disabled from the society, the delicate problem of self-marginalization should be considered, i.e. withdrawal of the disabled from active life. Such an attitude may result from both negative experiences, and the lack of acceptance of own disability.

**Table 10.** Importance of lack of assistance limiting or rendering impossible the selection of forms of tourism and recreation, by respondents' gender

Gender		Level of importance of the lack of assistance					
		1	2	3	4	5	Total
Females	4	4.59%	19.26%	12.40%	15.30%	8.44%	49.16%
Males	3	6.48%	22.19%	19.13%	13.52%	8.67%	50.84%
Total	4	0.47%	20.75%	15.82%	14.40%	8.56%	100.00%

 $\chi^2$ =9.89; df=4; p=0.042

Lack of assistance was placed on the last position among the presented barriers limiting participation in forms of tourism and recreation. This barrier most frequently afflicted males (50.8%) than females (49.2%), a relationship which was significant statistically (p<0.05).

### DISCUSSION

The reports to-date indicate that the disabled are generally worse educated, which mainly results from barriers limiting access to education (Graciani et al. [21], Soong-Nang et al. [22], Crimmins, Saito [23]). In the younger age groups, males dominate, while the longer life span among females results in a larger number of disabled females (Guralnik, Fried, Salive [24], Crimminis [25], Hardy et al.[26]).

The studies concerning motor activity among the disabled confirm its beneficial effect on treatment, psycho-physical condition and the process of reintegration with society, which is emphasized by many researchers: Łobożewicz [27], Chen, et.al [28], Marchewka [29]. The above-quoted reports indicate the importance of practicing tourism from the aspect of overcoming own weaknesses and enhancing self-confidence.

Also, the type of disability exerts a significant effect on practicing tourism, as reported by Putnam, Green and Powers [9], Daniels, Drogin Rodgers, Wiggins [14], Weisen [30]. Kwai-sang You, McKercher, Pacer [11] show that the type and degree of disability differentiates the development of interest in tourism.

Attention is paid to the fact that activity of the disabled concerning tourism and recreation may be used as an element of rehabilitation, which is indicated not only by the level of engagement in forms of tourism and recreation, but also increasingly more frequent adjustment of hotel infrastructure and the level of co-financing of social funds. Despite this, many disabled still perceive participation in tourism and recreation as the subsequent aspect of self-marginalization, and consequently, social isolation.

With respect to the elimination of barriers, from the aspect of tourism and recreation for the disabled, the adjustment of the means of transport still remains an important issue, not only for those in wheelchairs, but also the total population, e.g. the aged. The activities stimulating an increase in the Józef Bergier, Dominik Dabrowski, Jarosław Żbikowski. Conditioning of participation of disabled males and females from eastern regions of Poland in tourism...

participation of the disabled in the forms of tourism and recreation should be biased towards making them and society aware that these forms, apart from social integration, also perform prophylactic functions and shape the desired social habits and behaviours.

The presented study, conducted among the disabled living in the eastern parts of Poland, shows that low material standard is the dominant factor determining involvement in tourism and recreation. Among other important barriers, the respondents reported difficulties with transport, and lack of precise information concerning the offer of activities. The respondents also indicated difficulties according to the type of disability. The results of the studies showed that among the inhabitants of this part of Poland who have a lower material standard, it would be difficult to expect active engagement in tourism and recreation. They confirmed difficulties with the adjustment of transport, which have been observed for many years. It should be noted that some barriers, such as anxiety, demand for assistance from others, or lack of evoking interest in the forms of activity, have been overcome to a high degree. The differentiation of barriers which hinder tourist and recreational activity was confirmed between males and females. Females reported the greatest difficulties associated with transport, whereas males mentioned difficulties with access to information, offers of activities, or lack of assistance from significant others. Therefore, it may be presumed that females, to a higher degree, cope with the difficulties encountered.

## CONCLUSIONS

Based on the results of studies concerning motor activity among the disabled inhabitants of the eastern regions of Poland the following conclusions were drawn:

- The greatest barrier in the engagement of the disabled examined in tourism and recreation was their low material status. Other important limitations should also be mentioned such as inadequate means of transport, lack of information concerning the offer of activities, and type of disability.
- The least important difficulties in participation in motor activities reported by the respondents were: the need for assistance from others, fear of undertaking recreation activities, and lack of interest aroused.
- 3. Barriers in involvement in motor activities varied between males and females. More males than females indicated the lack of assistance from others, lack of adequate information and proper offer, while females more often than males reported the transport barrier.

# REFERENCES

- 1. Smith WR. Leisure of disabled tourists; barriers to participation. Ann Tour Res 1987;14:376-389.
- 2. Murray M, Sproats J. The disabled traveler. Tourism and disability in Australia. The Journal of Tourism Studies 1990;1:9-14.
- Ostrowska A, Sikorska J. The syndrome of disability in Poland. IFiS PAN, Warsaw 1996.
- Łobożewicz T. Tourism and recreation concerning people with disabilities. Warsaw 2000.
- Berman DS, Davis-Berman J. Adventure as psychotherapy: A mental health perspective. J Leisur 1995;22(2):21-28.

- Nichols D, Fines L. Self-concept, Attitude and Satisfaction Benefits of Outdoor Adventure Activities: The Case for Recreational Kayaking. J Leisur 1995;22(2):1-8.
- 7. Terry T. Universal adventure programming: Opening our programs to people with physical disabilities. J Leisur 1995;22(2):16-20.
- Burnett JJ, Baker-Bender H. Assessing the travel-related behaviors of the mobility-disabled consumer. J Travel Res 2001;40(1):4-11.
- 9. Putnam M, Greenan S, Powers L, Saxton H, Finney S, Dautel P. Health and wellness: People with disabilities discuss barriers and facilitators to well-being. J Rehabil 2003;69(1):37-45.
- 10. Ray MN, Ryder EM. "Ebilities" tourisme: an exploratory discussion of the travel needs and motivations of the mobility-disabled. Tourism Management 2003;24:57-72.
- Kwai-sang Yau M, McKercher B, Packer TL. Travelling with a disability-More than an access issue. Ann Tourism Res 2004;31(4):946-960.
- Shaw G, Coles T. Disability, holiday making and the tourism industry in the UK: a preliminary survey. Tourism Management 2004;25:397-404
- Buhalis D, Eichhron V, Michopoulou E, Miller G. Accessibility market and stakeholder analysis, One-Stop-Shop for Accessible Tourism in Europe (OSSATE), University of Surrey, United Kingdom, 2005.
- 14. Daniels M, Drogin Rodgers EB, Wiggins B P. "Travel Tales": an interpretive analysis of constraints and negotiations to pleasure travel as experienced by persons with physical disabilities. Tourism Management 2005;26:919-930.
- 15. Rudnick A. Psychiatric leisure rehabilitation: conceptualization and illustration. Psychiatr Rehabil J 2005;29:63-65.
- King GA, Law M, King S, Hurley P, Hanna S, Kertoy M, Rosenbaum P. Measuring children's participation in recreation and leisure activities: construct validation of the CAPE and PAC. Child Care Health Dev 2007;33:28-39.
- Lieberman LJ, Arndt K, Daggett S. Promoting leadership in physical education and recreation. JOPERD 2007;78:46-50.
- Borowiec A. Życie z niepełnosprawnością. In: Kościelska M, Aounil B. Człowiek niepełnosprawny: sprawność w niepełnosprawności. Bydgoszcz 2003:184-191.
- Bergier J, Dabrowski D. Evaluation of Physical Development of Children and Teenagers from Lubelskie Voivodeship with Hearing Damage. Pol J Environ Stud 2006;15:490-493.
- Bergier B, Bergier J, Grudniewski T. Free time of the disabled from eastern provinces of Poland. Annales Universitatis Mariae Curie-Skłodowska. Section D, Medicina 2007;62:196-200.
- Graciani A, Banegas JR, Lopez-Garcia E, Rodriquez-Artalejo F. Prevalence of disability and associated factors and health-related factors among the elderly in Spain: a population-based study. Maturitas 2004;48(4):381-392.
- 22. Soong-Nang J, Sung-il C, Kawachi I. Is socioeconomic disparity in disability improving among Korean elders? Soc Sci Med 2010;71(2):282-287
- Crimmins EM, Saito Y. Trends in healthy life expectancy in the United States, 1970-1990: gender, racial, end educational differences. Soc Sci Med 2001;52:1629-1641.
- 24. Guralnik JM, Fried LP, Salive ME. Disability as a public health outcome in the aging population. Ann Rev Public Health 1996;17:25-46.
- Crimmins EM. Mixed trends in population health among older adults: J Gerontol B Psychol Sci Soc Sci 1996;51:223-225.
- 26. Hardy SE, Allore HG, Guo Z, Gill TM. Explaining the effect of gender on functional transition in older persons. Gerontology 2008;54:79-86.
- Łobożewicz T. Turystyka jako forma rekreacji ludzi niepełnosprawnych, Post Rehab 1991;5(1).
- Chen T, Bruinings R, Lakin K, Hayden M. Personal competencies and community participation in small community residential programs: A multiple discriminant analysis. Am J Ment Retar 1993;98:390-399.
- Marchewka A. Wybrane komponenty aktywności życiowej a poziom niepełnosprawności umysłowej. Studia i Monografie nr 34, AWF Kraków, Kraków 2005.
- 30. Weisen M. Dostępność miast europejskich, podróży i kultury dla niewidomych i niedowidzących w Europie. [In:] Ślężyński J, Petryński W. (Eds.). Postęp w turystyce na rzecz osób o specjalnych potrzebach (Accessibility of European cities, travels and culture for the blind and partially sighted in Europe, [In:] Progress in tourism on behalf of population with special demands) Polskie Stowarzyszenie Osób Niepełnosprawnych, Zarząd Główny w Krakowie, Kraków 1995.