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PHYSICAL ACTIVITY OF TOURISM AND RECREATION STUDENTS IN TERMS OF ACCESSIBILITY TO OPEN AREAS

Abstract: The aim of the article is to present the factors which affect the choice of place of recreation, as well as indicate the preferred forms of physical activity taken up there. The authors also discussed the relationship between distance from open areas and frequency of visits. Moreover, they evaluated current knowledge about the role of the natural environment as a physical recreation space. The research was conducted among a group of 305 physically active individuals (students of the Academy of Physical Education and Sport in Gdańsk), using questionnaires. The respondents defined the role of location in comparison to other motivational factors for a range of physical activities (recreation). They also spoke about their preferred forms of physical activity in the natural environment, compared to the roles of natural and human environments with regard to physical activity. They also provided an answer to the question whether an open area which does not provide respondents with an opportunity to undertake their favoured recreation would remain of interest. The study results demonstrate the unquestionable importance of having access to attractive natural surroundings with respect to physical activity. This allows a relation to be made between leisure in the natural environment and an improvement in the health of the physically active.

Keywords: physical activity, recreation, health, natural environment, open areas.

1. INTRODUCTION

Natural areas, including forests, are an inherent part of human existence and a place where people engage in physical activity. The recreational use of the forest not only improves stamina, but is also a form of preventive health care due to the detoxification properties of forest complexes, such as the ability to cleanse the air from dust and heavy metal compounds, as well as the emission of organic anti-fungal and anti-bacterial aerosols (PASEK & ZIÓLKOWSKI 2014). Favourable health conditions in the forest are also created due to its filtration properties which include reducing wind energy, suppressing acoustic waves, and decreasing sunlight penetration to the forest floor which is particularly important in warm seasons (FONT 2002).

Apart from forests, recreation is also available in city parks, promenades, boulevards, gardens and other areas which create opportunities for sport, recreation, meeting friends, trips, as well as spending time alone in the open. The continually increasing pace of life and the accompanying lack of time generate a need for relaxation opens, possibly close to home, as a result of which green roofs and terraces are increasing in popularity, similar to private gardens

and other places where it is possible to find fresh air (CHOJECKA 2014).

Contact with nature is of key importance for the formation of cognitive processes. It allows stress to be given to the role of a natural open space as suitable setting for observation, education and recreation activities (NĘCKA & ŻBIKOWSKI 2005) which enables nature to be appreciated and understood better (Henderson 2002). The recreational use of the forest environment may indicate a desire to re-evaluate human values and needs (TOCZEK-WERNER 2004), recently too strongly focused around technological development in the modern world.

In the broad sense, 'natural open space education' includes developing spatial orientation, overcoming terrain obstructions, toughening the body, implementing safety rules, learning to process natural foods found there, as well as integrating open experience with prior knowledge (GILBERTSON *et al.* 2005). Physical activity referring to open education remains a term difficult to define, but according to the research assumption presented here, it may be associated with concepts such as physical or active recreation. Based

on these associations, it is possible to define physical activity as all kinds of games, exercise and sport for pleasure, recreation and health purposes (BARANKIEWICZ 1998).

Theoretically, we may talk about the multifaceted benefits brought by recreational contact with nature. At this point, the discussion is the question of the actual range of this contact in times when passivity (RUSKIN 1994) and isolation from nature are a standard characteristic of life philosophy, particularly among the young (PAŃCZYK 2003). The aim is to define the factors determining the choice of places for active recreation, as well as to establish its most popular forms.

The researchers also investigated the relation between the frequency of visiting open areas and their distance from the respondents' place of residence. Considering this distance, they also evaluated their knowledge of the legal restrictions concerning its use as well as its importance as a place of physical activity.

2. RESEARCH ORGANIZATION

The research was conducted in the academic year 2016-17, among 305 *licencjat* students (187 male and 119 female) at the Tourism and Recreation Department of the Academy of Physical Education and Sport in Gdańsk.

Its method was the use of a diagnostic questionnaire concerning pro-environmental attitudes, a part of which included issues relating physical activity to the natural environment. The respondents assessed the importance of location against other factors in choosing the place of recreation, as well as their favoured activities there. Moreover, they responded to three statements by selecting one of five responses, marked 0 to 4, where 0 meant complete disagreement, 2 - a neutral stance, and 4 - full agreement. They first indicated their favoured place of active recreation, choosing between the natural environment and sport and recreation centres (human environment). Furthermore, the level of knowledge on the legal aspect of recreation in areas protected by law was examined. Respondents also declared whether an open area where their favoured physical activity cannot be undertaken would still be of interest.

The initial perception of these issues, supported with an analysis from the available literature, led the authors to formulate the following hypotheses:

- The location of a recreational space is a key factor determining the decision to undertake physical activity.
- Open areas create the opportunity to undertake many forms of active recreation, but only a few are specified.

- The level of knowledge concerning the legal restrictions of using natural space for recreational purposes is unsatisfactory.

- There is a lack of clear indications as regards a preferred place of physical activity when comparing sport and recreation facilities to natural open space.

- As open areas serve contemporary people nearly exclusively as a recreation base, if they did not offer recreation opportunities, they would lose their significance.

3. RESULTS

The distance between the place of residence and the closest open area turned out to be an important factor determining frequency. When open areas are close by, it is easier to visit them, and the further they are, the less the visits.

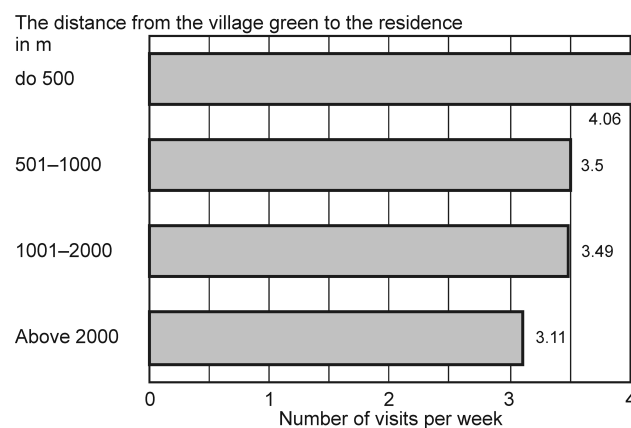


Fig. 1. The frequency of recreational visits to open areas, depending on distance from place of residence
Source: authors

Location turned out to be the most important factor determining choice. It was indicated by nearly 70%, 19% more than landscape assets and significantly more than other environmental factors. It is worth mentioning that nearly 30% considered the forest to be the factor motivating them to spend time in the open. These elements combined appear to be a powerful incentive to undertake physical activity. It is also necessary to justify the suggestion that the list of factors should include natural and health assets, despite their obvious links with other elements such as forests, water, land relief or tranquillity. After studying issues related to the environmental aspects of physical culture, the respondents understood natural assets in a particular way, as forest fruit, air ionization and the organic aerosols present there. On the other hand, health assets were as a rule associated with a wide array of acoustic stimuli (leaves rustling, birds

singing), as well as visual ones (subdued colours), having a positive effect on the nervous system.

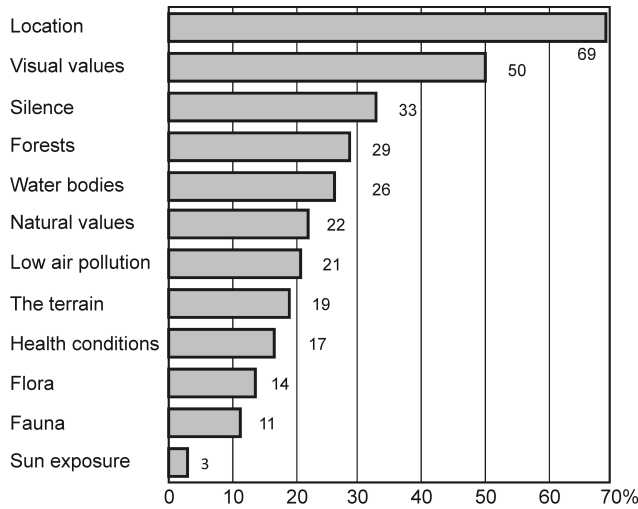


Fig. 2. The significance of factors determining the choice of place of recreation in respondents' opinions
Source: authors

The distribution of responses to the question on predominant forms of recreation taken up is strongly polarized. The respondents, who could point to only one form of activity but sometimes, unable to decide, chose to indicate additional forms, usually cycling, followed by jogging and going for walks. The remaining forms of activity were selected sporadically and none of them exceeded 10%.

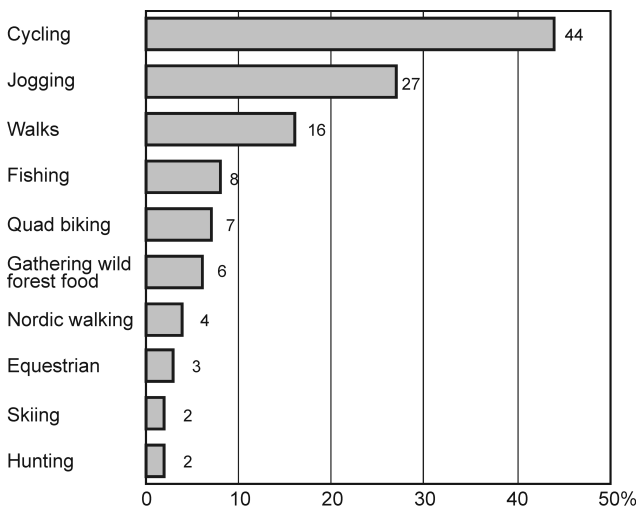


Fig. 3. Forms of physical recreation undertaken by respondents in open areas
Source: authors

Knowledge of the legal restrictions concerning active recreation in protected areas should be defined as rather unsatisfactory. On the four-point rating scale, the respondents' average score was about 2; there was

no relationship between the level of knowledge and distance between place of residence and open area.

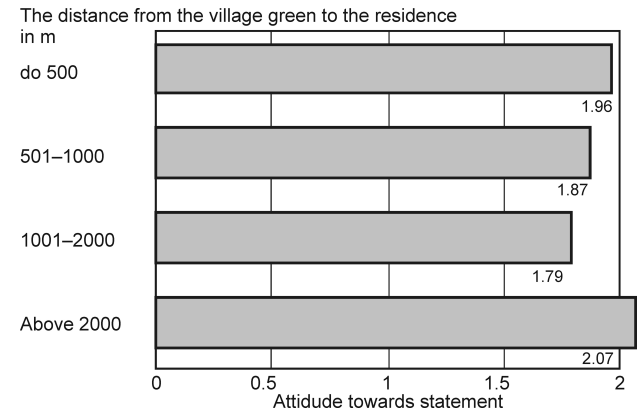


Fig. 4. Attitudes towards the statement concerning knowledge of legal restrictions on recreation in protected areas
Source: authors

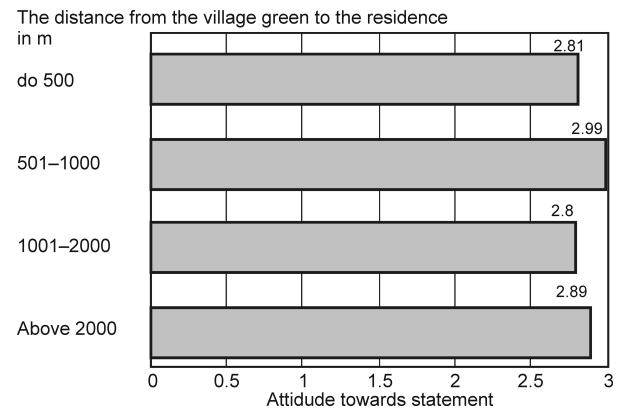


Fig. 5. Attitudes towards the statement that the natural environment is used as a place for active recreation more frequently than indoor sports facilities
Source: authors

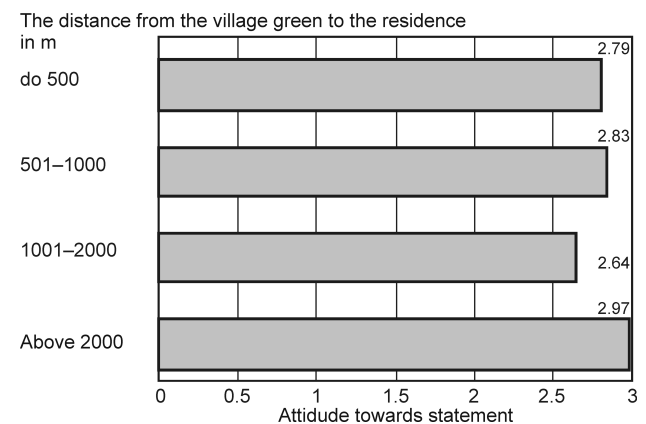


Fig. 6. Attitudes towards the statement that an open area where it is not possible to undertake a favoured form of recreation would still be visited
Source: authors

The respondents definitely supported the statement that natural open spaces become places of physical activity more often than closed sports facilities. However, no correlation between this opinion and distance from home to the nearest open area was found.

The opinion that an open area where it is not possible to undertake recreation would remain a visited site reached 3 on the four-point scale, which should be considered a good result. However, it did not substantially improve when the distance from home to the nearest open area decreased.

4. DISCUSSION

Numerous publications have been devoted to issues of rehabilitation through contact with natural space, and its positive influence has been stressed in this respect (LEE & MAHESWARAN 2011, MYTTON *et al.* 2012, RICHARDSON *et al.* 2013, D'ALESSANDRO *et al.* 2015). Physical activity in open areas may be a positive element as regards public health, as it strengthens the immunological system and reduces the risk of chronic diseases or makes them less acute, for example some diseases of the circulatory system and diabetes (HANSKI *et al.* 2012). Although it is difficult to define the real role of these areas as an element of community health prevention policy, due to the complexity of cause and effect relationships (MORRIS 2003), the information obtained from a review of the literature provides evidence that wellbeing improves and allergy incidence decreases (KELZ *et al.* 2013). Moreover, open areas support effective cognitive and social development of the young who often experience problems with concentration and motivation at work (LAAKSOHARJU *et al.* 2012). Compared to physical activity in a space limited by walls, attitudes regarding the emotional and behavioural component in this age group reach higher values during time spent in the forest (ROE & ASPINALL 2011). Probably that is why it is easier for children staying at a summer camp in natural open space to develop friendly relations than for those who spend holidays in the city (COLLADO *et al.* 2013). The fact that regeneration of mental and physical strength after work and study is most effective in natural conditions is an encouragement to take up specific activities as regards spatial planning of open areas in cities (TYRVÄINEN *et al.* 2014).

The research results show the positive physiological reactions of the organism in contact with nature in the form of a lower heart rate and blood pressure, a lower level of cortisol, suppressed activity of the sympathetic system and increased activity of the

parasympathetic system (HORIUCHI *et al.* 2013). Many hospitals, sanatoria and old people's homes are located close to nature, which is an additional tool used in therapeutic interventions (ADEVI & MARTESSON 2013, PÁLSDÓTTIR 2014).

Aspects of nature additionally concern physical activity strictly associated with health. If undertaken in open areas, it decreases the danger of a stroke (Wannamethee & Shaper 1999), cardiovascular disease (SESSO *et al.* 1999, LEE *et al.* 2001) and obesity (NIELSEN & HANSEN 2007). Easy access to nature encourages walking or cycling more often, which brings additional benefits such as avoidance of exhaust emissions (MOFFAT *et al.* 2010).

Many authors have investigated the problem of environmental stress caused by the worsening condition of natural settlements or their destruction which may result in anxiety disorders, chronic stress and elevated blood pressure (HENWOOD 2002), as well as in a better recognition of health problems (QUERESHI *et al.* 2010).

Thus, the huge amount of information about the positive influence of physical activity practiced in open areas on mental health is not surprising, especially that which concerns a higher resilience to stress and a more accurate perception of one's own health (THOMPSON, COON *et al.* 2011, KENIGER *et al.* 2013, HARTIG *et al.* 2014). The proximity of open areas, which heightens landscape attractiveness, increases the level of physical activity therefore they should be situated close to residential areas ((GILES-CORTI *et al.* 2005, ROEMMICH *et al.* 2006, NEUVONEN *et al.* 2007, MC MORRIS *et al.* 2015).

5. SUMMARY

The study showed the unquestionable significance of the location of open areas when choosing a place for physical activity. It was the most frequently indicated factor, both by male and female respondents, which allowed the researchers to make a positive verification of their first research hypothesis.

The second hypothesis proved to be true as well, since among all indicated forms of physical activity, only three were chosen definitely more frequently than others.

Also, as expected, the issue of the legal restrictions on physical activity in attractive natural places proved such a specific issue that not many respondents were familiar with it.

The results concerning the preferred place of activity show no pattern and do not indicate a definite advantage of the natural environment or closed recrea-

tional spaces. Having confirmed the fourth hypothesis, we can only predict that natural areas will be increasingly perceived as places to engage in activity and exercise, enjoy rest and recreation, and at the same time places which benefit health.

Only the last of the research assumptions was not clearly confirmed during the study. The respondents' attitudes towards the statement that they would remain interested in an open area even if it was not possible to undertake physical activity there, were mostly positive. This brings us to the conclusion that the forest has more than just a utilitarian dimension for those who are physically active. It shows the holistic character of the relation between man and nature, which also offers an opportunity for spiritual development.

BIBLIOGRAPHY

- ADEVI A.A., MARTENSSON F., 2013, Stress rehabilitation through garden therapy: The garden as a place in the recovery form stress, *Urban Forestry and Urban Greening*, 12 (2), pp. 230–237.
- BARANKIEWICZ J., 1998, *Leksykon wychowania fizycznego i sportu szkolnego*, WSP, Warszawa.
- CHOJECKA A., 2014, Znaczenie terenów zielonych w przestrzeni publicznej oraz ich wpływ na jakość życia miejskiego, *Rynek – Społeczeństwo – Kultura*, 1 (9), pp. 48–54.
- COLLADO S., STAATS H., CORRALIZA J.A., 2013, Experiencing nature in children's summer camps: Affective, cognitive and behavioural consequences, *Journal of Environmental Psychology*, 33, pp. 37–44.
- D'ALESSANDRO D., BUFFOLI M., CAPASSO L., FARA G.M., REBECCHI A., CAPOLOGO S., 2015, *Green areas and public health: improving wellbeing and physical activity in the urban context*, *Epidemiol Prev*, 39 (4), Suppl 1, pp. 8–13.
- FONT X., TRIBE J. (eds.), 2002, *Forest tourism and recreation: case studies in environmental management*, Buckinghamshire Chilterns University College, High Wycombe, UK.
- GILBERTSON K., BATES T., MCLAUGHLIN T., EWERT A., 2005, *Outdoor education: Methods and strategies*, Human Kinetics Publishers, Champaign IL.
- GILES-CORTI B., BROOMHALL M.H., KNUIMAN M., COLLINS C., DOUGLAS K., NG K., LANGE A., DONOVAN R.J., 2005, Increasing walking: how important is distance to, attractiveness, and size of public open space?, *American Journal of Preventive Medicine*, 28, pp. 169–176.
- HANSKI I., VON HERTZEN L., FYHRQUIST N., KOSKINEN K., TORPPA K., LAATIKAINEN T., KARISOLA P., AUVINEN P., PAULIN L., VARTIAINEN E., KOSUNEN T.U., ALENUS H., HAAHTELA T., 2012, Environmental biodiversity, human microbiota, and allergy are interrelated, *Proceedings of the National Academy of Sciences of the United States of America*, 109 (21), pp. 8334–8339.
- HARTIG T., MITCHELL R., DE VRIES S., FRUMKIN H., 2014, Nature and health, *Annual Reviews of Public Health*, 35, pp. 207–228.
- HENDERSON J.C., 2002, The survival of a forest fragment: Bukit Timah Nature Reserve, Singapore, [in:] X. Font, J. Tribe (eds.) *Forest tourism and recreation: case studies in environmental management*, Buckinghamshire Chilterns University College, High Wycombe, UK.
- HENWOOD K., 2002, *Issues in health development: Environment and health: Is there a role for environmental and countryside agencies in promoting benefits to health?*, Health Development Agency, London.
- HORIUCHI M., ENDO J., AKATSUKA S., UNO T., HASEGAWA T., SEKO Y., 2013, Influence of forest walking on blood pressure, Profile of Mood States, and stress markers from the viewpoint of aging, *Journal of Aging & Gerontology*, 1, pp. 9–17.
- KELZ C., EVANS G.W., RÖDERER K., 2013, The restorative effects of redesigning the schoolyard: A multi-methodological quasi-experimental study in rural Austrian middle schools, *Environment and Behavior*, 12 (1), pp. 1–21.
- KENIGER L.E., GASTON K.J., IRVINE K.N., FULLER R.A., 2013, What are the benefits of interacting with nature?, *International Journal of Environmental Research and Public Health*, 10, pp. 913–935.
- LAAKSOHARJU T., RAPPE E., KAIVOLA E., 2012, Garden affordances for social learning, play, and for building nature-child relationship, *Urban Forestry and Urban Greening*, 11, pp. 195–203.
- LEE A.C., MAHESWARAN R., 2011, The health benefits of urban green spaces: a review of the evidence, *Journal of Public Health (Oxf)*, 33 (2), pp. 212–222.
- LEE J., SCOTT D., FLOYD M.F., 2001, Structural inequalities in outdoor recreation, *Journal of Leisure Research*, 33, pp. 427–449.
- MCMORRIS O., VILLENEUVE P.J., SU J., JERRETT M., 2015, Urban greenness and physical activity in a national survey of Canadians, *Environmental Research*, 137, pp. 94–100.
- MOFFAT A.J., PEDIADITI K., DOICK K.J., 2010, Monitoring and evaluation practice for brownfield regeneration to green-space initiatives. A metaevaluation of assessment and monitoring tools, *Landscape and Urban Planning*, 97 (1), pp. 22–36.
- MORRIS N., 2003, *Health, well-being and open space: literature review*, OPENspace, Edinburgh 2003, Available at: <http://www.openspace.eca.ed.ac.uk/pdf/healthwellbeing.pdf> (last accessed 17 February 2016).
- MYTTON O.T., TOWNSEND N., RUTTER H., FOSTER C., 2012, Green space and physical activity: An observational study using health survey for England data, *Health & Place*, 18 (5), pp. 1034–1041.
- NEĆKA D., ŻBIKOWSKI J., 2005, Tendencje organizacyjne i programowe w rekreacji ruchowej, [in:] Z. Kubińska, B. Bergier (eds.), *Rekreacja ruchowa w teorii i praktyce*, PWSZ, Biała Podlaska, pp. 253–269.
- NEUVONEN M., SIEVÄNEN T., TÖNNES S., KOSKELA T., 2007, Access to green areas and the frequency of visits – A case study in Helsinki, *Urban Forestry & Urban Greening*, 6 (4), pp. 235–247.
- NIELSEN T.S., HANSEN K.B., 2007, Do green areas affect health? Results from a Danish survey on the use of green areas and health indicators, *Health & Place*, 13, pp. 839–850.
- PÁLSDÓTTIR A.M., 2014, *The role of nature in rehabilitation for individuals with stress-related mental disorders: Alnarp Rehabilitation Garden as supportive environment*, doctoral thesis, Swedish University of Agricultural Sciences, Alnarp.
- PAŃCZYK W., 2003, Posługiwanie się ciałem wobec zagrożeń cywilizacji konsumpcyjnej, *Lider* (numer specjalny), pp. 13–18.
- PASEK M., ZIÓŁKOWSKI A., 2014, *Ekologiczny wymiar kultury fizycznej*, AWFis, Gdańsk.
- QURESHI S., KAZMI S.J.H., BREUTSE J.H., 2010, Ecological disturbances due to high cutback in the green infrastructure of Karachi: Analysis of public perception about associated health problems, *Urban Forestry & Urban Greening*, 9(3), pp. 187–198.
- RICHARDSON E.A., PEARCE J., MITCHELL R., KINGHAM S., 2013, Role of physical activity in the relationship between urban green space and health, *Public Health*, 127 (4), pp. 318–324.

- ROE J., ASPINALL P., 2011, The restorative outcomes of forest school and conventional school in young people with good and poor behavior, *Urban Forestry & Urban Greening*, 10, pp. 205–212.
- ROEMMICH J.N., EPSTEIN L.H., RAJA S., YIN L., ROBINSON J., WI-NIEWICZ D., 2006, Association of access to parks and recreational facilities with the physical activity of young children, *Preventive Medicine*, 43 (6), pp. 437–441.
- RUSKIN H., 1994, Mit i rzeczywistość – spór o kształt wychowania fizycznego w szkołach, *Kultura Fizyczna*, 1/2, pp. 20–25.
- SESSO H.D., PAFFENBARGER R.S., HA T., LEE I.M., 1999, Physical activity and cardiovascular disease risk in middle-aged and older women, *American Journal of Epidemiology*, 150 (4), pp. 408–416.
- THOMPSON COON J., BODDY K., STEIN K., WHEAR R., BARTON J., DEPLEDGE M.H., 2011, Does participating in physical activity in outdoor natural environments have a greater effect on physical and mental wellbeing than physical activity indoors? A systematic review, *Environmental Science & Technology*, 45 (5), pp. 1761–1772.
- TOCZEK-WERNER S., 2004, Trendy obserwowane w rekreacji na świeżym powietrzu, [in:] J. Wyrzykowski, K. Klementowski (eds.), *Współczesne tendencje w turystyce i rekreacji*, AWF, Wrocław, pp. 105–112.
- TYRVÄINEN L., OJALA A., KORPELA K., LANKI T., TSUNETSUGU Y., KAGAWA T., 2014, The influence of urban green environments on stress relief measures: A field experiment, *Journal of Environmental Psychology*, 38 (6), pp. 1–9.
- WANNAMETHEE S.G., SHAPER A.G., 1999, Physical activity and the prevention of stroke, *Journal of Cardiovascular Risk*, 6, pp. 213–216.

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