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FITNESS-RELATED FLOWS OF RESIDENTS IN POZNAŃ

PRZEPIŁYWY MIESZKAŃCÓW POZNAŃA ZWIĄZANE Z AKTYWNOŚCIĄ FIZYCZNĄ

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ABSTRACT: The aim of this paper is to present the significance of the recreational space in Poznań for the physical activity of the city's residents. The factors considered in the study were the following: the range of possibilities for engagement in paid-for and free-of-charge physical activities, the perceived availability of green areas, the favourite places for physical activity and the role of the neighbourhood and flows in this aspect. The paper presents the results of a survey conducted among 1,244 inhabitants of Poznań in 2017. The respondents positively assessed the possibilities of undertaking physical activity in the context of the city/space offer. The access to various sports was rated positive, among it the paid activities offered were rated higher than free-of-charge ones. The availability of green areas near the place of residence was assessed as good. Two locations, Cytadela Park and Lake Malta with the surrounding green areas, were the most popular for pursuing physical activity.

KEY WORDS: physical activity, recreational areas, green areas, neighbourhood, Poznań

ABSTRAKT: Celem niniejszego artykułu jest przedstawienie znaczenia przestrzeni rekreacyjnej Poznania w aktywności fizycznej mieszkańców miasta. Pod uwagę wzięto ocenę płatnych i bezpłatnych możliwości podejmowania aktywności fizycznej, ocenę dostępności terenów zieleni, ulubione miejsca aktywności fizycznej oraz rolę sąsiedztwa i przepływów w tym aspekcie. Artykuł prezentuje wyniki badania przeprowadzonego wśród 1 244 mieszkańców Poznania w 2017 roku. Ocena możliwości podejmowania aktywności fizycznej pod względem oferty jaką daje przestrzeń była pozytywna. Ocena możliwości uprawiania różnych sportów była zasadniczo dobra, lepiej jednak zostały ocenione możliwości odpłatnego niż bezpłatnego uprawiania aktywności fizycznej. Dostępność do terenów zielonych w pobliżu miejsca zamieszkania otrzymała wysoką ocenę. Dwie lokalizacje, Park Cytadela oraz Jezioro Malta wraz z otaczającymi terenami zielonymi, zostały uznane za najlepsze pod kątem uprawiania aktywności fizycznej.

SŁOWA KLUCZOWE: aktywność fizyczna, tereny rekreacyjne, tereny zielone, sąsiedztwo, Poznań

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Introduction

Physical activity plays a great role in people's lives. It is one of the basic needs of every human being, helping to maintain health, prevent illnesses and fight stress and being a way to spend free time. However, in the society of today physical activity means much more – it is also a lifestyle and a way to express oneself.

The aim of this study is to present residents' fitness-related flows in Poznań. In order to give an overview on the significance of city space for physical activity, a survey was conducted among city inhabitants. Physical activity of the residents of Poznań was examined as part of regular reports published by the Poznań City Hall regarding the quality of life in Poznań (for instance Quality of Life in Poznań 2013). According to this publication, 70.9% of the surveyed declared that they used recreational areas in their free time. These analyses were generalising in nature and lacked references to specific urban spaces and their role in physical activity.

The present study fills this gap by answering the following questions: 1) How do inhabitants rate free and paid options of undertaking physical activity offered in the city space? 2) How do inhabitants rate the accessibility of green recreational areas in Poznań? 3) What are their favourite locations in Poznań regarding physical activity? 4) What is the role of the neighbourhood in undertaking physical activity? 5) What are the main inhabitants' flow destinations within the city with regard to engaging in physical activity?

The study is based on the results of a survey on physical activity of Poznań residents, which was conducted between May and July 2017 by students of the Faculty of Geosciences, Adam Mickiewicz University, Poznań, as part of the Geography of Sport module. The interviewed residents came from the following districts: Jeżyce, Naramowice, Piątkowo, Rataje, Sołacz, Stare Miasto, Stare Winogrody, Warszawskie-Pomet-Maltańskie and Wilda. A total of 1,244 questionnaires were completed. Taking into account gender, 51% of the respondents were women, 49% were men. The largest age group were respondents between 20 and 30 years old.

The study discusses the following issues: 1) physical activity and the role of space in undertaking it, 2) the characteristics of the research area with particular focus on the sports infrastructure base and actions undertaken by the city authorities with regard to physical activity, and 3) assessment of the space in Poznań with regard to inhabitants' engagement in physical activity in view of the survey results.

Physical activity and the role of space in undertaking it

According to Wolańska (1971), physical activity is “the sum of all activities involving sports, movement or tourism, which people undertake of their own accord in their free time, for the purpose of having some rest, enjoying entertainment and developing their own personality.” In this paper, only the activity that the residents undertake in their time off work is considered to be physical activity. There is no doubt that physical

activity has positive effects on the human body. Taking up physical activity is important at any age: children need it to develop motor skills, adults – to maintain fitness and health. Regardless of one's age, physical activity is beneficial to health (Sallis, McKenzie, Kolody, Lewis, Marshall, Rosengard 1999; Keeley, Fox 2009; Yu 2006; Hagger 2012; Hawker 2012). Physical effort helps to prevent numerous diseases, including civilization diseases of the cardiovascular system or cancer. It has also been indicated that physical activity positively affects one's mental state (Field, Diego, Sanders 2001; Keeley, Fox 2009; Biddle, Fox, Boutcher 2001; Biddle, Mutrie 2008; Hamer, Chida 2008; Nowacki 1985). People who engage in physical activity have a greater ability to concentrate, cope better with stress, and are less likely to suffer from depression.

Space plays an important role in physical activity. Rösch (1986) points to the importance of geographic sciences in explaining processes related to physical culture, including human physical activity. These relationships concern not only physical geography, but also human geography. Knowledge on urban and population geography and economic geography is extremely useful in this respect. Human physical activity takes place in a specific space with specific features. This space can be used spontaneously or it may be deliberately planned (Rösch 1986: 18). Rösch also points out that sport (physical activity) can be a space-shaping factor, which is related to space planning and the accessibility of recreational areas.

The interest in spatial aspects of physical activity undertaken in free time stems primarily from:

- the growing importance of physical activity in human life in times of limited everyday mobility and sedentary lifestyle;
- increasing housing density in modern cities, pressure exerted on open spaces or green areas in cities;
- the emerging fashion for physical activity within some urban social groups;
- the growing importance of economic factors in shaping people's physical activity (support from employers, development of recreational facility chains).

The recreational space of the city comprises areas managed by private investors, as well as those planned and managed by city authorities (Fuhrmann 2017). The investments planned by the authorities of Poznań reflect yet another criterion for the division of recreational space: costs of using such spaces. Physical activity may be paid-for free of charge. Combining the above criteria, four types of recreational spaces in the city can be distinguished:

- free public space, managed by local authorities allowing residents to use it free of charge; due to the economic criterion, it is the most desirable type of recreational space; it includes sports fields, cycle paths, green areas and open-air gyms (including those located in urban parks);
- free private space, managed by private investors, with possible limited access for selected groups of residents; it resembles free public space, but is encountered less frequently; it includes mainly outdoor gyms and playgrounds in housing estates;

- paid-for public space, managed by local authorities; using it requires paying a fee; local authorities most often manage pool complexes, halls and sports halls;
- paid-for private space, managed by private investors who offer paid access to gyms and fitness clubs, swimming pools, tennis courts and others.

Research area

Poznań is one of the largest cities in Poland, spanning the area of 262 km², with 540,372 residents.¹ There are 149 sports clubs in the city, with 318 sports sections training 15,228 people, including 9,427 people under 18 years of age.² Public statistics unfortunately do not take into consideration sports activity of non-affiliated individuals.

The city provides its inhabitants with numerous opportunities to engage in physical activity both indoors and outdoors. The base for physical activity in Poznań consists of sports facilities, green areas and cycling routes. There are 770 sports facilities,³ which translates into 708.7 inhabitants per one facility. They have multiple purposes, with highly specialized facilities, such as INEA Stadium, serving professional athletes, but also public football pitches dedicated to the youngest football players, the so-called “Orliki” (Eaglets).

Poznań boasts high indices regarding green areas in general.⁴ Green areas cover 17% of the city’s total area, and the total green area per inhabitant is 82.4 m². Compared to other 18 province capitals in Poland, Poznań ranks 2nd (after Olsztyn) and 3rd (after Olsztyn and Szczecin) in the respective categories. However, considering indices of cultivated green areas (parks, urban greenery, green areas in housing estates), the situation of Poznań is much worse. The share of cultivated green areas located within the city area is 4.1%, and their area per one inhabitant is 19.64 m². In this respect Poznań ranks the 11th and the 10th, respectively, among region capitals in Poland.

Cycling routes are 150 km in length, which gives network density of 0.57 km/km². Although at present the length and condition of cycling routes are not very impressive for such a large city, the indices grow every year. This trend is expected to continue due to the fact that bicycle transport is among the most important areas of interest of the current Mayor, Jacek Jaśkowiak. Cycling is also gaining popularity thanks to Poznań City Bike, a network of bike-sharing stations located in the city.

Physical activity can result from people’s internal need for movement, but it can also be stimulated by the actions of local authorities and appropriate shaping of urban spaces. The importance of sport and physical activity is also recognized as one of the key issues in the Development Strategy for the city of Poznań. An example of such actions on the part of the authorities is the “Sporting Poznań” scheme, developed as part of the

¹ Data of the Central Statistical Office (as of 12.2016).

² Data of the Central Statistical Office (as of 12.2016).

³ Data from the Marshal Office of the Wielkopolska Region in Poznań (as of 06.2014).

⁴ Data of the Central Statistical Office (as of 12.2016).

“Poznań 2030” Strategy, which aims towards, e.g., enriching the sports and recreational offer for the inhabitants and visitors, and promoting active, healthy lifestyle among the inhabitants. The programme also points out that an increase in the level of physical activity depends on the quality of the city’s recreational space, designed for each age group of residents. Consequently, the planned measures include:

- acquisition and expansion of the *Golecin* sports and recreation complex (owned by the police) and;
 - expansion of the sports and recreation complex around *Arena* (event and sports venue), including modernisation of the building, construction of sports pitches and modern playgrounds, modernisation of archery range and summer swimming pool;
 - construction of the *Na cyplu* complex in the Warta River bay at Chrobry Bridge: creation of the recreation, leisure and service complex comprising restaurants, year-round swimming pool, beach, walking routes, courts (tennis, basketball), marina, viewing terrace and ship hotel;
 - expansion of the hockey pitches in Promienista Street;
 - improvement in the attractiveness of the *Chwiałka* sports and recreation complex
- construction of a summer water park, modernisation of the sports facilities available at the venue;
- improvement in the attractiveness of the *Rataje* Water Centre – construction of year-round tennis courts with sanitary infrastructure, skate park roof, construction of a river jetty with a camping site, expansion of playgrounds and construction of sand courts for team beach sports.

Such a considerable proportion of projects related to exercise indicates a continuous and high demand for initiatives of this type. While “Poznań bets on sports” was one of the city’s marketing slogans for many years, one could get the impression that it was not put into practice. Currently, when the slogan is no longer officially used, the actions of the city authorities and the results of citizens’ voting for the participatory budget make Poznań acquire new spaces for physical activity and modernise the existing ones.

All of these actions encourage and strengthen engagement in physical activity among the inhabitants of Poznań.

Assessment of the space in Poznań with regard to inhabitants’ engagement in physical activity in view of the survey results

Introductory remarks

Before proceeding to the results concerning the role of space in physical activity, it is worth presenting some general comments on the respondents’ physical activity itself. The vast majority of participants, 61.2%, were physically active in the year preceding the survey. Within this group, 60.1% (“definitely yes” and “yes” responses) considered physical activity an element of their lifestyle, and 13.1% answered to the contrary (“definitely not” and “no” responses). More than half of the physically active respondents, 51.6%,

engaged in one physical activity, 32.5% – in two, and 15.9% – in three. Three quarters of the respondents did not have a fitness card. Among those who had a card, the most popular ones were Be Active cards (offering access to 16 fitness clubs in Poznań) and Benefit Multisport (offering access to 179 different sports facilities in Poznań for MultiSport Plus card holders). Most of the respondents declared that they did not spend large amounts of money on physical activity. Almost half of the surveyed (46.4%) spent up to PLN 200 a year (e.g. on sportswear and shoes, sports activities in clubs, initiation fees), and 21.2% – between PLN 201 and 400. Larger sums, i.e. PLN 1000 and more, were spent by 11.4% of the physically active respondents.

Importance of recreational space in Poznań for residents' physical activity

The city can encourage its residents to engage in sports through appropriate shaping of the urban space (Kostrzewska 2013). The inhabitants of Poznań positively assessed the possibilities of undertaking physical activity in the context of the city/space offer, with the score of 4.2/5 (on a scale from 1 to 5, where 1 denoted very few options and 5 – a large number of options). The respondents assessed their own capabilities with regard to the city offer as lower, i.e. 3.8/5.

As mentioned before, physical activity can take place in free-of-charge or paid public and private recreational areas. In general, the evaluation of Poznań in terms of access to various sports, either paid or free, was positive (Table 1). The respondents rated the city on a scale from 1 (very bad) to 5 (very good). The paid activities offered were rated higher, at 4.1/5, while the mean score for free options was lower by half a point – 3.6/5.

Table 1

Evaluation of Poznań in terms of access to various sports, either paid or free – the respondents' answers
(1 – very bad, 5 – very good)

Access	Very bad		Very good			No opinion	Average score
	1	2	3	4	5		
Paid	0.3%	2.0%	15.7%	36.2%	30.2%	15.6%	4.1
Free	1.4%	11.3%	27.6%	29.8%	18.0%	12.0%	3.6

Source: authors' own calculations based on survey results.

Assessment of the availability of green areas in the neighbourhood

Green areas play an important role in the context of physical activity (Chojecka 2014; Czepkiewicz 2017). Physical exercise in green areas evokes feelings of recovery, boosts energy and commitment, and can effectively reduce negative emotions such as tension, anxiety, anger and depression (Thompson Coon et al. 2011; Bowler et al. 2010). Its effect on positive mood and self-esteem has also been noted by Barton and Pretty (2010). Considering the above, the respondents were asked to assess the availability of

green areas near their place of residence on a scale from 1 (very bad) to 5 (very good). The average score was 3.8, which indicates quite good overall assessment of this aspect, with 62.2% of the respondents believing that the availability of green areas in Poznań is very good or good, and 10% having the opposite view; 3.8% did not have an opinion on this subject. It emerges that the large proportion of green areas in the general land use structure in Poznań results in their easy availability to the inhabitants surveyed regardless of the place of residence.

Favourite locations for physical activity in Poznań

The respondents were asked to indicate their favourite places in Poznań where they can engage in physical activity. Interestingly, the vast majority, 67.7%, did not indicate such a place. The rest mentioned 93 different locations in Poznań, 52.7% of which were outdoor and 47.3% – indoor sites. It is worth noting that some respondents pointed to more than one place. Among the top 10 locations mentioned by the respondents (Table 2), 7 were public and free of charge. In addition, they took the first five places on the list.

The most frequently indicated locations were by far Cytadela Park and Lake Malta together with the surrounding green areas. They occupied the first two places on the list. These two areas were also among the most popular green areas used for physical activity in Czepkiewicz's study (2017).

A quarter of the respondents declared Cytadela Park to be their favourite place for exercise. Cytadela Park is the largest park in Poznań, located on a hill north of the city, on the territory of the former Winiary Fortress. Located within the historical complex of the city of Poznań, the park is not only a historical monument, but also Natura 2000

Table 2
Favourite places for engaging in physical activity in Poznań –
the respondents' answers

Position	Location	%
1	Cytadela Park	25.4
2	Malta Lake and surroundings	22.9
3	Sołacki Park	6.5
4	Warta River and surroundings	6.5
5	Marceliński Wood	4.5
6	Pure Jatomi Gyms	4.5
7	Malta Baths	4.2
8	John Paul II Park	2.7
9	AMU sports hall	2.5
10	Morasko Campus	1.7

Source: authors' own calculations based on survey results.

protected area, providing a winter habitat for bats. Cytadela is one of the most favourite places where the inhabitants of Poznań like to spend their free time. It is worth noting that the park has been developed in a variety of ways. There are fortifications (ravelins, bastions, flyovers, gates), numerous cemeteries (including the cemetery of the parish of St. Adalbert of Prague, the Garrison Cemetery, the Soviet Heroes Cemetery and the Polish Heroes Cemetery), museums (Museum of Armaments and Poznań Army Museum), statues, an amphitheatre and food venues.

The surveyed participants gave different reasons for choosing Cytadela Park as their favourite place for physical activity. The most common answer mentioned was the wide range of options for undertaking different activities in this area and the large space it offers. This can be exemplified by the following comments: “a space to escape from the city bustle”, “a great place to run, a spacious, interesting area, you can interact with culture”, “a green place, with many runners, that keeps you motivated”, “a lot of space for sports activity”, “a good place to spend your free time cycling”.

Almost an equally high number of the surveyed pointed to Lake Malta together with the surrounding area as their favourite place for physical activity. The popular “Malta” is the territory around an artificial lake, with the adjacent Cybina River and green areas. It is undoubtedly one of the most attractive places in Poznań, hosting numerous international contests, like canoeing, rowing competitions, dragon boat races, or triathlon. The Malta area also comprises a ski slope, mini golf course, bowling alley and other sports facilities.

The comments on this place also mentioned the possibility of undertaking various physical activities in the beautiful scenery of the lake and the green areas: “offers convenient conditions for cycling”, “because there is a lake, lots of green areas, cycling and pedestrian paths”, “there is a cycling lane, so you can ride nicely, you can sit and have a picnic by the water”, “you can jog in a pleasant landscape”, “has paths to run, ride a bike, skateboard, scooter, ski slope”.

The other places highlighted by the residents did not arouse so much interest of the general public and their proportion in the structure of favourite places was much lower, for example, both Sołacki Park and the Warta River with its surroundings were indicated by only 6.5% of the respondents. Sołacki Park is a much smaller area, used mainly by the inhabitants of the Sołacz housing estate, a district of Poznań with old villa buildings. It seems that future will bring an increase in the popularity of physical activity in the area of the Warta River due to numerous city investments, such as, for example, *Wartostrada*, a pedestrian-bicycle route along the river. This investment is planned to connect parts of the city which are far apart. Already today, the residents of Poznań are encouraged to spend their free time by the Warta River and exercise there, for instance by using outdoor gyms located in this area.

Outdoor sites, Pure Jatomi Gyms, Malta Baths and AMU sports hall were indicated by a small percentage of the respondents – 11.2% altogether.

The location of favourite places for engaging in physical activity is presented in Figure 1.

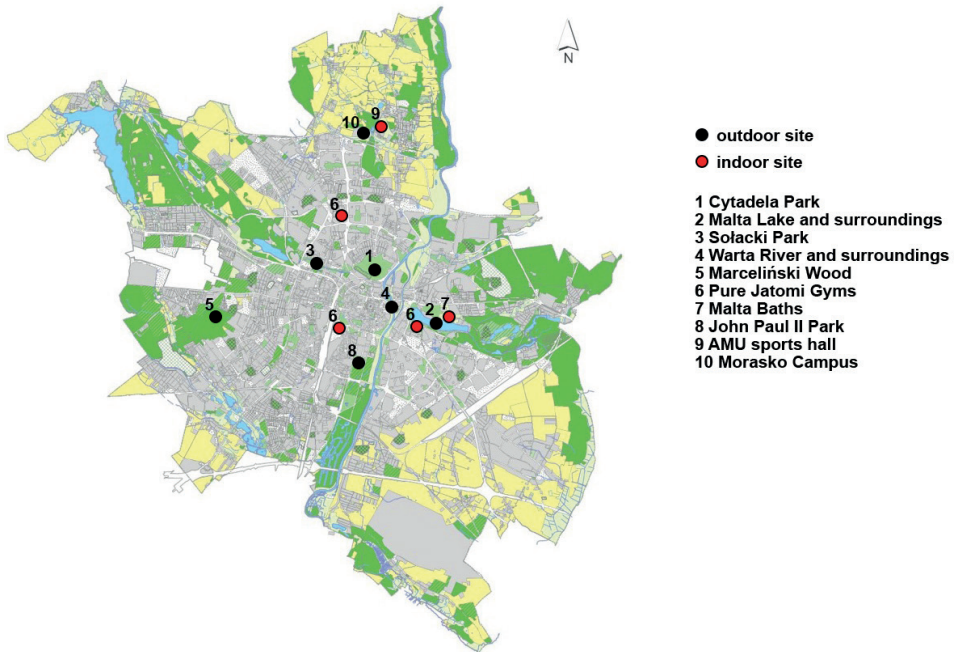


Fig. 1. Location of favourite places for engaging in physical activity in Poznań

Source: own elaboration on the basis of www.mpu.pl.

Neighbourhood as a flow area for physical activity

Neighbourhood can play an important role in undertaking physical activity. It can even be considered crucial in today's world, where the pace of life is fast, people spend most of their day at work and there is considerable social pressure on staying fit.

The majority of respondents (55.6%) engaged in physical activity near their place of residence. The most popular forms of activity were running, fitness, cycling and gym. The more different sports the respondents listed, the more important they considered the physical activity to be in general. This means that a large part of the flows associated with the analysed aspect of people's lives was related to their immediate environment (flows taking place in the space close to home).

As for the possibility of undertaking physical activity in accordance with one's needs and free of charge, the respondents gave slightly lower scores to their neighbourhood as compared with the availability of green areas and the range of options for engaging in various sports for a fee. The average score in the evaluation of the neighbourhood in this aspect was 3.7/5. The majority of respondents answered positively – 56.6%. Negative answers constituted 12.7% of the responses.

Neighbourhood is highly important as a flow area for physical activity. First of all, the conducted surveys indicate that it is willingly used as a place for doing sports. Secondly, the favourite places mentioned by the respondents were closely related to the area they

lived in. The surveyed residents of the Warszawskie-Pomet-Maltańskie housing estate, where Lake Malta is located, appreciated this area much more than other people and were more likely to point to it as a place to engage in physical activity. The inhabitants of the Stare Winogrody housing estate, where Cytadela Park is located, also indicated this place as their favourite regarding physical activity. Similarly, residents of Sołacz were more likely to mention Sołacki Park, Golęcín and Lake Rusałka.

Conclusions

Engaging in physical activity is an important element of human life. Research has pointed to its two crucial effects: maintaining or improving physical health and maintaining or improving mental health.

Proper development of the city space is an essential factor in undertaking as well as supporting physical activity as it provides residents with both free-of-charge and paid-for exercise options. Poznań offers a wide selection of such places, both citywide and in local neighbourhoods. The present study has shown that the inhabitants of Poznań display a high level of physical activity, which has become part of their lifestyle. They positively assessed the city's recreational space in general but gave higher scores to the space the use of which they had to pay for.

Availability of suitable space elements, including green areas, is the main spatial factor that determines whether city residents can lead an active lifestyle. Green areas constitute a significant proportion of the overall land use structure in Poznań. As a result, their availability was assessed positively regardless of the respondents' place of residence.

Some places in Poznań, such as Cytadela Park and Lake Malta with its surroundings, are particularly important for the residents with regard to the possibility of engaging in physical activity. While these areas are important to all residents, it has been noted that they were particularly popular with the residents who live in the surrounding neighbourhoods.

Another important factor supporting physical activity is the organization of the space which is closest to an individual, i.e. the surroundings of the place of residence. The authorities of Poznań see the need to develop recreational space and understand the benefits of the citizens having their part in deciding about this space, especially in their immediate neighbourhood. This is visible in projects initiated by residents within the participatory budget. The proportion of projects expanding the offer of physical activity in the neighbourhood is significant.

The recreational space was assessed in three aspects. The inhabitants of Poznań rated the availability of green areas and paid recreational sites higher than the availability of places where they can freely undertake activities meeting their needs. The latter result leads to the conclusion that it is necessary to monitor the needs of residents in terms of physical activity, as well as conduct further studies on residents' satisfaction with the

current recreational offer of the city. Such studies might help to better shape residents' physical activity.

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