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Sport and physical activity in the urban area – housing estate greens for three generations

Jak cytować [how to cite]: Ostrowska-Tryzno A., Nałęcz H., Pawlikowska-Piechotka A. (2020): *Sport and physical activity in the urban area – housing estate greens for three generations*. Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe, 3, 2, p. 105–128.

Sport i aktywność fizyczna w przestrzeni miasta – osiedlowe tereny zielone dla trzech pokoleń

Streszczenie

Cel badań: Tereny rekreacji na osiedlach mieszkaniowych powstawały przede wszystkim dla dzieci i młodzieży, obecnie pożądane są nowe funkcje tych miejsc, kierowane do wszystkich grup wiekowych. Celem badań było rozeznanie, jakie wyposażenie jest pożądane na uniwersalnych placach zabaw, przeznaczonych dla trzech generacji: dzieci, rodziców i dziadków. **Metodologia badań:** Projekt statutowy ds.-300 AWF – grant MNiSW. Na terenach sportu i rekreacji osiedlowej

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w Warszawie i gminach sąsiednich zbadano, jak są urządzone, kto z nich korzysta i jakie są opinie i oczekiwania użytkowników. Wykorzystując dorobek badań, zidentyfikowano czynniki określające „integracyjny plac zabaw” przeznaczony dla trzech generacji. Brano pod uwagę także atrakcyjność urządzeń, poziom bezpieczeństwa i korelację z płcią, wiekiem, stymulacją fizyczną i psychiczną. **Wyniki badań:** Aby zapewnić dostępność placów zabaw dla wszystkich grup wiekowych, należy przestrzegać podstawowych zasad: dostępności fizycznej, wieku i adekwatności rozwojowej, elementów stymulujących fizycznie, społecznie i sensorycznie. **Wnioski:** Wykazano, że dogodna lokalizacja, atrakcyjne, stymulujące rozwój psychofizyczne wyposażenie osiedlowych terenów rekreacji są ważne, aby zachęcać do codziennej aktywności fizycznej w każdym wieku, pomóc wzmacniać i doskonalić umiejętności społeczne, umysłowe i fizyczne trzech pokoleń.

Słowa kluczowe: sport, aktywna rekreacja, międzypokoleniowe place zabaw.

Abstract

Research aim: Playgrounds were historically designed only for children, today we can observe new concept of recreation sites, aimed for all ages. Traditional playground was furniture with kids' equipment, while universal playgrounds have also facilities for adults. These facilities enable families to play together. **Research methods:** Research project ds-300 AWF was a continuation of the ds-114 AWF – the MNiSW grant. Using the field survey with participant observations, structured and semi-structured interviews methods, factors determining the ‘inclusive urban playground’ for three generations were identified. **Research results:** To achieve the open access to the universally designed, inclusive playgrounds for all ages, basic components should be included: physical accessibility, age and developmental appropriateness, physical, social and sensory-stimulating components. **Conclusions:** Results show that exciting, engaging and challenging sport and recreation housing green areas are important to encourage physical activities for all age and enhance social, mental and physical skills of the three generations.

Keywords: sports, active recreation, playgrounds for all generations.

Introduction

The need to provide urban residents with an appropriate space conditions for active recreation, treated both as a daily need for physical effort, and a way to enjoy free time together with family and peers – has been known and repeatedly described in the literature of the subject [1], [2], [4], [14], [16], [17], [18], [19], [20], [21]. Especially the importance of systematic physical recreation of children, carried out in open green areas of high environmental quality, suitably furnished, preserving natural and aesthetic values – is indisputable, multithreaded by researchers from various academic centres [19], [20], [21], [22]. A growing body of research focuses on urbanization in the context of health documents a significant effect of the urban environment: toxins, pollutants, noise, crowding, chaos, housing on children and adolescents' cognitive, physical and socio-emotional development and wellbeing. These studies prove that physical activity in properly prepared open areas is of great importance for the three generations:

children, adults and elderly members of community, providing sustainable development, health, physical and mental fitness, and proper socialization.

How do modern urban citizens enjoy their free time? For example, two decades ago (in the years 1990–2000), Polish children spent most of their free time in the nearby housing greenery: in winter 33%, in autumn 48%, in summer 90% – in the studied group. The research concerned children at the primary school age (7–14 years of age), who already can decide about the choice of recreation in their free time [3], [12]. To the regret of parents, pedagogues, physicians and specialists in physical culture, these proportions are currently different, active outdoor recreation loses out to computer games, TV and films on DVD media. Recent studies show that currently only about 10% of children relax daily in the estate squares [1], [12].

This new tendency is also observed in most European countries [17], [19], [20], [21], [22]. The results of research carried out in 2010 in London housing estates have shown that only 25% of children living there spend their free time on the playground, but among them only half (12%) use the devices installed there. Other British studies, conducted by professor Anna Goodman from the University College in London, aimed at checking the extent of the use of playgrounds in different seasons of the year. According to these studies, the percentage of children using devices on playgrounds on an annual basis was on average 8%, slightly higher during the spring and summer – 13% (mainly in the afternoon and the evening, between 4 pm and 8 pm), and the least in winter and autumn, only around 3%. It turned out that most of the children visit the local recreation area mainly once a day, usually to spend about 10–15 minutes there. Only a few visitors stayed there longer than 30 minutes. Almost no differences were noticed in the length of time spent in the urban greens on school days and at weekends, summer/winter holidays or other days off from their school duties. Researches carried out in other European countries also show a bad image of children's physical activities. For example,, it appears from studies conducted at the same time in Germany that as much as 80% of children spend less than 5 minutes on the outdoor playgrounds, 15% from 5 to 15 minutes, and only 5% stay there longer than 15 minutes [5]. Similar conclusions have been drawn out from recent surveys conducted in the United Kingdom [19], [20], [21].

In the literature on the subject, attention is paid to a number of negative consequences of such tendency: limitation of motor development, physical fitness, difficulties in coping with stress, strengthening the attitude of withdrawal in peer groups, antisocial behaviour, reluctance to implement common tasks, lack of training of such social abilities as conversations and effective negotiation [15], [16], [17]. In other words, without frequent, preferably – everyday, play and team games, children lose the opportunity to develop desirable traits for their future social coexistence: emotional intelligence, independence, self-esteem, and the ability to cooperate. How to change these tendencies in the three generations of urban citizens? Perhaps the answer is in more attractive playground equipment,

which might encourage children, adults and the elderly to have daily physical activities. Another important issue is the accessibility of urban greens, planned for sports and recreation, and the liquidation of barriers, to allow them to be used by the disabled children and adults.

Therefore, the progressive phenomenon of limiting physical activity in free time, as well as the shrinking of urban parks and public green areas, and their insufficient preparation for everyday recreation of children of all ages should be the subject of constant concern. It is accepted to complain about the younger generation, deprived of sports spirit, but at the same time there is a lack of well-organized, generally available, non-commercial, interesting playgrounds, adventure parks, swimming pools, playing fields, tennis courts. This is mainly because today the traditional large playgrounds are treated as a reserve for possible future investments, and the new housing complexes are deprived of public common green space and do not meet the expectations of their users.

Unfortunately, due to the economy hard rules, developers, administrations and managers of numerous housing estates, often neglect recreation areas, intended primarily for public use or even decide to liquidate them, wishing to reduce the cost of living and hoping that the sale of valuable, attractively located, urban areas will enable them to obtain funds for necessary investments (insulation of buildings, exchange of carpentry, central heating system repairs, etc.). Recent reports of local media about plans to liquidate green public spaces and playgrounds, under the pressure of the residents themselves are particularly worrying – a recent example (according to the local media news) is one of the housing communities in Warsaw.

Therefore, well-designed open spaces and playgrounds aimed for all three generations, residents of various age ranges, have become rare in the urban estates. Today, those considered as attractive – are more often difficult to access, distant from the place of residence and excessively crowded on public holidays.

This article presents the results of studies, conducted under the ds-300 project in 2016–2019, focused on the contemporary conditions for active recreation of the three generations of urban residents.

Historical tradition of shaping sport and recreation space in the housing estates

Until the 19th century, in the majority of European cities, there was no need to prepare special recreational areas for children, near their place of residence. In ancient Greek cities, both in private gardens and in public areas (along the less busy streets, around urban squares, temples) children could play freely. This custom was cultivated not only in Greece but also in other Mediterranean cities. In chapter 8.5 of the Book of Zacharias, there is a record of the vision and prophecy

pertaining to the future of Jerusalem during the reign of Persian King Darius I, who reigned in the fifth century BC: 'A place of the city (Jerusalem) will be again full of boys and girls playing there' (Holy Bible 1990, p. 1110), undoubtedly evidencing the obvious custom of children's annexing of squares and streets of this ancient city. It was the same in modern European cities. In the well-known painting by Peter Brueghel the Elder 'Children's Play' (1560), we can see a city square and a narrow street, with one or two-story houses built on both sides. Over a hundred children, aged 3–12, are playing on dusty, muddy, unpaved streets and square. One can also notice over a hundred different games depicted in this picture.

Until the 19th century, in consequence of the relatively extensive urban development, public safety and calm traffic, urban children were able to play, just like the ones seen in the Brueghel's painting: on the streets, city squares (where traffic was minimal), in the immediate vicinity of the houses, in gardens and orchards, on undeveloped plots – often at the same time taking care of their younger siblings. It should be emphasized that we cannot see older children in the painting of Brueghel, because until the early 20th century, 12- to 16-year-old children were forced to take up paid employment [11], [13].

At the end of the 18th and early 19th centuries, people became aware of the terrible sanitary conditions, in which urban children played and relaxed (primarily alarmed the pedagogues and doctors – in Poland – Stanisław Staszic, Henryk Jordan). Hence, starting from the mid-nineteenth century, solutions were sought in the type of outdoor play areas in the city parks and there were even specially set up children's gardens modelled on the first one founded in Leipzig (opened in Poland thanks to the initiatives of Henryk Jordan and Wilhelm Rau). From the beginning of the 20th century, fragments of local recreation areas or city parks have been arranged in the form of playgrounds, specially prepared for the needs of children. The first, experimental in this respect, were the cooperative multi-family housing estates erected just before the outbreak of the First World War in Italian and German cities [6], [11], [13].

Polish social activists, architects and town planners during the Second Republic of Poland (II RP in 1918–1939) were fully aware of the necessity of providing recreation areas for town and city dwellers in the immediate vicinity of their place of residence even before there were possibilities to implement such postulates [6]. Hence, the first purely theoretical concepts of housing estates with extensive recreation areas appeared, some highly rewarded at international competitions (for example in 1928). At that time, in Europe, new housing projects guaranteed 30 m² – 40 m² of green areas per 1 inhabitant. Warsaw was an example of the practical implementation of the innovative principle of organizing public open spaces. New estates, such as Rakowiec and Żoliborz, had a reserve area between housing blocks. The green space for daily physical activities were spacious, sunny, and could be reached directly from the staircases which overlooked the local green areas. They were safe for the children. Playgrounds were sur-

rounded on all sides by blocks of flats, isolated from traffic, dust and noise. A typical equipment program included a sandpit (called “sandbox” then), shallow paddling pool and gazebo, greenery of trees and shrubs, lawns, some season flowers and benches for relaxation [11], [13].

In the first years after the Second World War, before well organized, outdoor open spaces were established again, Polish children and adolescents often spent their free time in empty, undeveloped areas of the city, playing team games in the ruins of houses and construction sites. Instead of having Indian Villages and Pirate Islands, children engaged their imagination and utilised everything that could be used to play with: left tools, building materials, old furniture, wrecks of machines and vehicles. Everything that could be found in the rubble (and was not claimed by adults) was used to play games: pieces of bricks, stones, pieces of glass and metal, broken furniture. All those mysterious items, strange parts of ‘something’, because they were hard to identify, were enough to implement the imagined game scenario and play. Unfortunately, these games in burnt-out buildings threatening to collapse, unexploded shells, or just erected, poorly protected constructions, often ended in serious accidents, disability and even death [11], [13].

Gradually, along with the reconstruction of Polish cities after the war, special green open spaces were created for housing complexes, meeting the needs of the three generations. At first, they were improvised, as a result of the social initiative of the residents themselves, from substitute materials. There were even book guides with practical proposals for cheap and available field equipment, construction organization rules: starting from the levelling of the area and putting up a fence and preparing the surface of playgrounds, pits for team games, as well as instructions how to build some basic simple devices. One could also find valuable pieces of advice there on how to arrange an ice rink, a small ski jump or a tobogganing hill. There were instructions available on how to build an Indian Village, house on a chicken foot or Slavic Settlement (Viking Village) from logs, a train from concrete pipes remaining after some inbuilt construction. People were instructed how to build a toy caravel from an old boat transported to the playground, how to build a swing, simple wooden see – saw or ‘goat’ for a jump, how to organize a safe swimming pools in open waters of a local river or lake. People were also encouraged to get involved in the organization and construction process – as far as their free time and strength allowed them, so that their proposals for the way public open spaces were arranged were heard. In the book guides published in 50s and 60s of the past century, you could find practical suggestions for organizing local Olympics games, along with proposals for a competition program in such disciplines as jumping from a rope suspended on a tree, throwing a lasso, knee bends, changing a bike wheel in time etc.

After 1972, planning regulations and standards on urban public open space were obligatory in Poland, influencing not only the area, but also the functional programme of the greens in the newly erected housing estates (Ordinance no. 9

of the Ministry of Building Economy and Environmental Protection, 29 January 1972 on urban indicators and guidelines for residential areas in the cities, *Dziennik Budownictwa* 1972, no. 2 item 2). Therefore, it was impossible to develop a housing estate too extensively, as it too often happens today, when only a small area is settled for the recreation of a few thousand inhabitants. According to the regulations of 1972, if an estate occupied a significant area, it was recommended to establish several green areas in order to keep the daily isochronal access safe for children and adults, not further than 300 m from their place of accommodation (5–7 minutes). The equipment was predominantly predicted: sandpits, swings, interlaces, slides, grassy areas for resting and team games, benches and lighting. Only the larger area, Jordanian Gardens for children, urban parks for families allowed amore extensive programme, a greater variety of devices. Nevertheless, the law and theory were often different from the reality. For example, although the literature on the subject from that period [11], [13] recommended creating and arranging separate playgrounds for three generations, even distinguishing the needs of small children, older children and adolescents, it was not always possible to locate such a rich programme on housing estates. Providing suitable size and programme for open green space was particularly difficult to solve in Warsaw and other large Polish cities, where urban planning standards provided for a more modest area for sports and leisure areas. Very often in such a situation, it was too optimistic to consider that older children and adults would use local school sports clubs' facilities. It was certainly rational, but most often it turned out to be a utopian assumption, consistently boycotted by the school administration, who did not want to mess with children and adults they do not know staying at the facility after completing school activities.

It should be mentioned, that among the specialists themselves, there was neither agreement, as to the criteria for distinguishing age groups, selection of devices suitable for particular age groups nor unanimity regarding the functional zoning, green areas facilities and the size area. Even the same professionals, changed their minds every few years, on how to divide children into age groups, which proves that the issue was (or rather – constantly is) controversial, and the criteria change depending on the scientists' suggestions, based mainly on the details of current school programme reforms. Besides, there has been, a large group of specialists, who believe that it is more natural and beneficial for the community integration to set up one common, universal playground for three generations – to be shared by children of all ages and adults.

At present, there are no standards for areas aimed for sports and recreation in Poland. There are only sanitary and safety standards for devices which are to be met. Because there are seldom possibilities to create spacious green areas in the newly erected urban settlements, public outdoor recreation spaces are located in narrow inter-block spaces of 30 m² – 60 sq. m, usually with a very limited play-

ground programme for the youngest and a typical set of facilities, made of colourful synthetic materials most often placed on artificial grass.

Considering this context, although it might be assumed that the discussion how to divide or combine age groups on the small playground does not generally make sense, this does not mean that the problem itself ceases to exist. For example, older children and adults, if they make a heroic decision to detach themselves from the TV or computer, are doomed to spend their leisure time on the local car parks, among garbage cans, in busy streets or around the local market. Sadly, there are often no attractive pitches for team games, more ambitious structures of ‘spiders – pyramids’, gymnastic devices and climbing walls.

Contemporary program: functional quest for the universal playground ‘for all’

The consequences of civilization progress are connected, apart from the benefits, with several negative changes in our living environment: constant urban sprawl (mainly at the expense of green areas), increasing traffic, noise, dust and gas pollution of atmospheric air, as well as lack of public safety due to the increase in crime. As a result, we have less friendly urban environment and limited possibilities for safe active recreation in urban open areas [15], [16], [17], [19], [20], [21], [22]. Unfortunately, the negative effects of urbanization are also present in many Polish cities and we are no longer able to enjoy open green spaces of our neighbourhood in the way that previous generations did. Obviously, establishing safe, attractively arranged places for active recreation near the place of our residence is a necessity. For over a hundred years, specialists and researchers have agreed: active rest is the most beneficiary, especially for the children, who learn most and develop best through playing with their peers. In a pleasant and unforced way, they improve social contacts with their peers or carers, assimilate the rules of team play, develop some good habits of team cooperation, and above all, develop physical fitness [1], [2], [6], [14], [16]. Such leisure activities in the outdoor open areas can have many forms: a walk, participation in team sports games, individual gymnastic exercises, gardening, playing in the sandbox or exercise playing on instruments. A novelty in many European cities is the appearance in the last two decades of numerous playgrounds near public buildings: churches, museums, libraries, restaurants and petrol stations – in places where they have never been established before.

In order to fulfil its task, reasonably arranged public greens should meet various needs and abilities of their visitors of a given age, mental and physical development stage:

- a) physical: height, body weight, strength, dexterity, agility, flexibility, jumping ability, mobility;

- b) emotional: different level of readiness to take risks, fascination with checking their abilities in difficult and new tasks, independence and self-control;
- c) social: various phases of the ability to interact with other people, cooperation in a group and communication, striving for social contacts, willingness to play together, acceptance and tolerance;
- d) cognitive-intellectual: curiosity, willingness to take risks, ability to make right decisions, condition assessment, creativity, various levels of sensory cooperation, different possibilities of learning and skills.

When planning the public greens, the needs of visitors with special needs or limitations for any of the factors listed above should also be considered. These visitors should also have the right to have fun, stimulate their development mentally and physically. One could say ‘the more he or she has the right’, because it is precisely for such a group that pleasant physical exercise, social contact with others can be particularly valuable, as a precious aid in the rehabilitation process [18], [20]. However, considerations on this subject were also a separate theme for our research, they require a broader discussion and do not fit within the subject of the presented article.

A rational selection of devices and their arrangement on the sports and recreation space is a great responsibility, because the way the facilities are installed, can either inhibit or encourage to exercise and play; it can either weaken users’ sense of safety or strengthen it. It is a misunderstanding to assume that it is enough to fill an empty grassy square and order the appropriate set of devices from the catalogue. It is a problem of proper land preparation, rational layout of devices and later their constant maintenance and supervision.

For example, the majority of modern playground design standards recommend adherence to the following three fundamental principles [1], [2], [15], [16], [17], [19], [20], [21], [22]:

1. The division of the playground into functional zones (age, physical and emotional possibilities, children’s interests).
2. Playground equipment with safe devices – suitable for featured functional zones – points (considering the age, physical and emotional abilities and interests of the children).
3. Providing a safe surface, easy to clean, cushions and reducing the risk of injuries, safe distances between devices.

Consequently, we need to search for answers to the following questions: What do modern children expect and how precisely should playgrounds be arranged? What is better to have, a lot of devices or rather a multi-themed amusement park? Is it enough to set a simple slide, swing, sandpit and carousel, or imagination inflamed with movies and computer games must be satisfied with more sophisticated toys such as climbing spiders, castles – combined with slides and walls for climbing, toy cars, trains, houses, waterfalls. Do wooden toys such as traditional wooden see – saws and metal swings always mean boredom, and is there no question of having fun without coloured plastic devices?

What should the program of a playground device for a school backyard or residential recreation area be – usually neither the local regulations nor the state norms regulate such problems. Moreover, there is no compliance in the world of specialists. Although several studies show that children are best suited to a playground in the natural greens style, with some adventure facilities such as the Indian Village or Pirate Island – but it is an expensive solution, requiring a significant area (above 2000 m²) and costly devices. As a result, this is always the result of a sense of aesthetics, location and terrain options, possible resources that can be spent – as well as fashion and ambition.

Searching for the answers to these questions is important and for decades projects of special sport and recreation facilities have been considered by architects and sculptors as very interesting and original problems to be solved. For example, this task was undertaken by the great visionary of the 20c – Le Corbusier when designing new housing estates, as well as one of the most famous contemporary artists, the author of the Olympic Park in London – Zaha Hadid in the 21c. In the theoretical and practical works focused on founding sports and recreation areas, two parallel problems are distinguished: the problem of playgrounds developed on a small area of 100 m² – 300 m², located between housing blocks and more spacious public open spaces such as city parks and district sports and leisure areas developed on areas of more than 2,000 m² (Bellville near Paris, Nature Playground in Copenhagen, Lady Diana Memorial Playground in Kensington Park in London) [11], [13].

Among the examples of low-budget, attractive solutions for urban housing estates, one can mention the Scandinavian tradition of building ice rinks in winter, sledge hills, with snow and ice slides, various toys – sculptures for climbing. An inexpensive idea is to bring gilded stones to the playground, enabling fun and climbing, as is the case at Camden Playgrounds, London in the UK. In one of the housing estates near Oslo, a playground has been proposed with a minimum of devices: there are huge truck tires embedded in the sandy ground, huge boulders, a relatively small number of swings, simple springs and see – saws. As a result, is enabled planning empty space for running and team games. Another characteristic feature that distinguishes this playground is the lack of greenery (except for mowed grass and a few trees with undercut low growing branches). The reason is, as the project's authors argue, common complaints of children with allergic background and thus eliminating unpleasant allergens was necessary. Furthermore, lack of trees was aimed for the safety of younger children, who are not able to climb a tree [3], [18].

Today, there are about 10,000 playgrounds in Poland. They cover a total area of about 800 ha, and there are 70,000 devices on them. These are, to a large extent, objects located on multi-family housing estates. Considering the location and capacity – half of Polish children can use them. Mostly dominating facilities are the popular and basic devices: small sandpits, swings, metal stands, see-saws – all

packed onto limited area of 50 m² – 100 m². The cost of the basic playground equipment, without the purchase of land, is estimated now from 20 000 PLN (the basic variant, the cheapest and the simplest toys to be found in most of the popular catalogues) up to 100,000 PLN. It should be emphasized that in principle there is no upper limit for the sums to spend on a luxury playground. For example, the famous London's Lady Diana Memorial Playground, founded in the Kensington Park area, consumed huge sums for construction (1.7 million pounds sterling – or about 2 million euros). Furthermore, there are fixed significant expenses for facility protection and equipment maintenance. The mentioned London playground is highly appreciated by children and their carers, and extremely popular.

However, it could not replace the small and very modestly furnished playgrounds near places of residence, as being easily accessible within a few minutes, they enable everyday active recreation without having to cross a busy street [14], [19], [20], [21], [22].

Material methods and results of the field study

The aim of the research was to identify the infrastructure and devices of several types of outdoor playgrounds: located in open areas in parks and city gardens, in residential areas, at educational facilities (schools, kindergartens) and at public facilities (restaurants, museums, churches). In addition to the inventory itself, the intention was to get to know the opinions and comments about the devices expressed by their users.

Field works (surveys in 2016–2018) were carried out in 63 outdoor facilities located in Warsaw, Nowy Dwór and Modlin, distinguishing four basic playground groups in the research material:

- a) playgrounds located in the selected city parks (including Jordanian Gardens) – fieldworks in 26 facilities located in Warsaw, Nowy Dwór and Modlin,
- b) playgrounds located in the selected housing estates – fieldworks in 26 facilities located in Warsaw, Nowy Dwór and Modlin,
- c) playgrounds located near educational institutions (kindergartens and primary schools) – fieldworks in the selected 10 facilities (5 kindergartens, 5 primary schools) located in Warsaw,
- d) playgrounds located near public facilities (churches, museums, restaurants) – fieldworks conducted in one building (St Mary Church at Dewajtis Street in Warsaw).

When investigating selected playgrounds in the above-mentioned groups, a correlation was sought between them:

- location in the city structure, as environmental qualities, transport accessibility, distance from housing estates,

- functional and utility programme, such as selection of devices and their setting, importance of devices for stimulating normal psycho-physical development of users, adjustment of devices for age and social groups,
- accessibility for the disabled (children and carers), degree of security, animation of activities and events,
- popularity, measured by the number of users, their gender and age characteristics, length of stay at the playground and choice of devices,
- universality and inclusivity of the playground – its preparation for various age and social groups (including for the elderly and the disabled),
- organized team activities, the presence of the instructor (animator),
- the possibility of common fun for the whole multigenerational family (grandparents – parents – children – grandchildren),
- information provided for users (pre-visit and in situ),
- opinions of users about the attractiveness of playgrounds.

Structured interviews, focused on visitors (mainly adults but with the consent of their guardians, also among children playing there), were conducted according to a unified in-situ, face-to-face questionnaire (116 statements were received).

Naturally, the article presents only part of the studied problem and does not exhaust the whole, very extensive and multithreaded issue. The results of field research, obtained in playgrounds located in urban forests, educational establishments and public facilities, have been consciously omitted in this text, because their specificity is already beyond the subject and scope of our paper, which is the recreation in the place of residence; the other questions require a specialist, separate discussion.

The fieldworks were carried out on 52 playgrounds located in housing estates (26 facilities) and in city parks (26 facilities) in Warsaw, Nowy Dwór and Modlin. The research tools were structured interviews with users of facilities, inventory of facility development and notes on the base of observations (of participants and non-participants). On the basis of the collected research material, the following synthetic conclusions have been formulated:

1. Playgrounds are considered mostly by their users as secure; only a few accidents were mentioned, non-serious falls from the high slides or swings; only on few playgrounds the facilities were in poor condition and dangerous; asphalt surfaces, popular at the end of the 20c, in the 80s and 90s, were replaced with grassy ones, synthetic mats or sand, rarely with a bark surface; the surfaces are often varied on one site (mixed grass and sand, natural and artificial grass).
2. All the surveyed playgrounds were enclosed, as the applicable laws require, or located in the fenced areas (urban parks, housing communities, schools, kindergartens); they are often well-lit after dark; few have a CCTV monitoring system (cameras).
3. It was emphasized by the users, that the facilities were in good technical condition, clean and solid, colourful and aesthetic, selected with taking into ac-

count the latest trends, modern and thoughtful, made of strong and nice materials; our respondents underlined, that one can see a huge difference in the development of playgrounds in relation to previous decades.

4. In many urban parks, new playgrounds are created, while on many housing estates playgrounds are liquidated, some facilities that require constant supervision and sanitary control are removed. For example, at one of the surveyed housing estates, a sandpit was adapted to become a flowerbed, surrounded by a rest bench.
5. There were no significant differences between the way the playground equipment was selected and installed in the cities studied (Warsaw, Modlin, Nowy Dwór).
6. Most often the caregivers visit with children various playgrounds in the area, if only there is a possibility, to allow the child to experience possible variations, such as other surroundings and toys, or other children their children can meet.
7. Children from the single-family houses, who have their own gardens and recreation open spaces, also often visited public playgrounds, for example located in the city parks, which are open to outsiders. As their carers explained, even though they have a private space to play (a sandpit, a swing, a slide), arranged in the backyard garden – playgrounds in public places offer more interesting and more varied facilities and an attractive company of other children.
8. Children living in the neighbourhood often visit nearby local well-furnished playgrounds located in the fenced and guarded housing estate; the official pretext for outsiders is to visit family or friends.
9. Children of 0–3 years of age visit the playground every day, 5–7 times a week in the company of a supervisor (parents, grandparents, hired babysitter), and stay there from 30 minutes (autumn) to 90 minutes (summer and spring); in the winter, children usually do not go to the playground at all; only a few guardians declared daily use of the playground all year round (but excluding freezing or rainy days), in this latter case it was everyday use of the local playground and in addition longer trips to the city park 1–2 times a week.
10. Children aged 3–5, visit playground usually every day (in the kindergarten or residential area), often playing with their carers or peers; they stay in the playground approximately 45 minutes on average; children up to 5 years old are always in the residential playgrounds with a carer (parents, grandparents, hired babysitter), often with older siblings.
11. Children aged 5–7 visit residential playground 3–5 times a week, staying less than 30 minutes; it is usually explained by the lack of attractions and boredom, definitely less often – by lack of time.
12. Children aged 7–11 usually play at the residential playground not more often than 2–3 times a week; they usually go out to the housing estate themselves

without any adult supervision, stay in the playground shorter than younger children, from 15 minutes (winter and autumn) to 60 minutes (summer and spring); only a few children declared daily use of the playground and longer games (up to 2 hours in the summer during the holidays), only one person declared as much as 3-to-5 hour stays during the summer holidays he had to spend in the city (boy, 10 years).

13. Individual devices – such as toys to play with in the sandpit are usually attractive for a child for a short time, after 5–10 minutes they get bored. Then the carer suggests ideas for additional animations, invent thematic games. The child is more willing and able to play, if there is a nice group of peers or an adult who organizes fun for everyone.
14. Research shows that no more than half of carers play with children in parks and in housing estates; these are most often fathers, older brothers, uncles or grandparents, less often mothers, older sisters, aunts and grandmothers, very rarely paid babysitters. The exception is a professional kindergarten teacher who is actively involved in the play animation (there was one such case recorded in the Żeromski Park, a group of 9 children aged 3–6 coming from a nearby small private kindergarten that does not have its own playground).
15. On playgrounds, there are usually few facilities (green areas on housing estates), as much as a dozen or so devices of recreation equipment or toys one can notice at urban parks. The most popular devices are various types of swings, slides, see – saws, rockers – springs, climbing walls, interlaces, spider – pyramids, houses, castles, trains, cars, carousels, sandpits, large blocks, educational toys (puzzles), instruments, sites for team games.
16. The favourite toys of younger children aged 3–5 are the sandbox toys (they bring home buckets, blades and moulds), spring rockers, slide and ‘thematic’ toys: a house (with toys and dolls brought from home), a train, a car, a ship; they also bring other toys to playgrounds as plush toys. Older children (5–7) bring comets, roller skates and balls.
17. Children aged 0–3 are brought to playgrounds in prams (those aged 0–1 spend there almost all the time), older children come on foot or on their bicycles, scooters.
18. The favourite toys of children aged 5–7 are slides, swings, interlaces, low spiders and trampolines, and ‘thematic’ toys: castle, ‘wild west’ fort, cottage with kitchen, train, ship, car.
19. For children of over 7 years old, various gymnastics, interlaces, trampolines, batons, spiders, rope ramps, climbing walls, gaming grounds are attractive.
20. When choosing toys by younger children, there are no significant differences between girls and boys. Things are different among children over 7 years of age: girls usually choose slides and interlace, boys choose spiders and climbing walls, bridges – equivalently, downhill ride; both groups equally willingly choose swings, batons and trampolines; when choosing ‘thematic’ toys, boys

- are more likely to choose a train, car, ship or palisade fort, girls choose 'locks' and 'houses'.
21. Younger children are happy to play together; the elder ones like toys that enable individual fun. The least interesting toys are generally not only those in bad technical condition, broken, ugly, but also the ones requiring the assistance of adults; as a result carousels are omitted, requiring team play with other children; on the other hand sandpits, low climbing walls and interlaces 'ladders' (up to 150 cm) designed for small children are also not very popular and described as 'childish'.
 22. Among the studied sites, only the playground in the University of Physical Education in Warsaw (AWF) at 34 Marymoncka Street had devices for integration, as some toys (trampolines) were available for children on wheelchairs, wide and even paths allow free movement of people with disabilities.
 23. Only the playground in the University of Physical Education in Warsaw (AWF), by providing an outdoor gym the recreation ground has been designed to meet needs of the three generations of its visitors, allowing them to spend a time together and enabling active recreation for young people and adults.
 24. Only on the playground in Stara Baśń Street (Bielany, Warsaw) there were organized cultural and educational activities initiated by the Bielany Local Authority; for example in May 2017 'Educational Picnic' was addressed to pre-school children (there were games, competitions, educational meetings, scientific experiments, presentations of sports and dance shows proposed to the visitors) and to future parents (massage workshops).
 25. There are definitely better equipped playgrounds which are located in city parks (Las Młociński, Park Żeromskiego, AWF Warsaw, Jordan Garden at Felińskiego street) than the recreation areas located on housing estates; there is practically no difference whether they are playgrounds existing for a long time (WSM Żoliborz II) or newly created ones (residential complex at Rydygiera Street).
 26. It was also noticed that visitors of playgrounds located at housing estates were usually the carers with young children (from 0 to 5 years old), visiting the site on weekdays and at the weekend; whereas on Saturdays and Sundays there was an increase in the presence of early school-aged children (6–11 years old).
 27. During weekdays, the dominating caregivers were women (mothers, aunts, grandmothers, rented babysitters of all ages), while on Saturdays, Sundays and other holidays – the proportions of female and male guardians were almost equal.
 28. Children eagerly meet and play in the same group day by day, so it requires of carers to coordinate the dates and time of joint meetings on the playground.
 29. Among the objects examined by field research, only in Ogród Krasinskiich (the Krasińskis' Garden Park) in Warsaw there is a corner (kiosk, gazebo)

designed for nursing mothers; benches for rest can be found on all the surveyed playgrounds, whereas portable toilets are placed next to playgrounds in city parks and Jordanian Gardens (the popular white and blue toilets are the most common).

30. Carers and children visiting playgrounds usually come on foot, when the distance from their place of residence is no more than 15 minutes; if it is more – they use public transport or a private car. Interestingly, among the respondents interviewed in the city parks, there were no people complaining about the lack of parking lots and shortages of urban transport.
31. Children asked about their favourite playgrounds usually mentioned these located at the pre-school backyard or located in a city park, less often in their own housing estate.
32. Caregivers used to bring drinks (juices, flavours, water, tea), fruit (apples, oranges and bananas), sandwiches with cured meat or cheese, sweets (chocolate, chocolate bars, candies, biscuits, biscuits), salty sticks and chips. Among the respondents there were no suggestions on the lack of trade and gastronomy services – a café and a kiosk with drinks and sweets.
33. Playground visitors complained mostly about the lack of toilets in playgrounds (there are none or they are devastated and dirty).
34. Participants of our survey suggested establishing a sports equipment rental at the city parks (bicycles, scooters, badminton, balls), installing outdoor gyms at playgrounds (attractive for adults and older children).
35. Playground visitors, when asked to express their opinions, on expectations regarding the improvement of the playground infrastructure, emphasized the importance of a large green area close to the place of residence (to quote one of the responders: ‘children had to have a space to run’), various facilities allowing for different physical exercises and being attractive for diverse age groups; clean and aesthetic toilets, picnic tables and shelters protecting against sun and rain. Most often mentioned and desired devices were: for younger children – large blocks and logic puzzles, for older children – spiders and spiral slides, ‘monkey bridges’, bicycle-roller / roller tracks, skateboarding devices (mini skate park), table tennis sets, safe and attractive trampolines, outdoor gyms and grassy team gaming areas. Attention was paid to the sanitary requirements and the need to protect the sandbox after dark against cats and rats (there are sandboxes available with a sun visor sliding down in the evening as a sandbox cover), taking care of the greenery.
36. Attention was drawn to the lack of seasonal attractions. It was emphasized that in the absence of ‘white winters’ ice rinks and sledge hills were less necessary, whereas fountains, shower trays, giving relief against the constantly increasing number of hot days in late spring and summer could be more appropriate.

37. In the face of the risk of sunburns during hot days with temperatures over 30°C installation of canvas canopies over toys was suggested, especially over devices such as sandpits, where children play longer; properly impregnated canopies, as it was noticed, can also protect during short-term, light drizzle.
38. In view of health warnings regarding the presence of ticks and mosquitoes, attention was drawn to the need to spray shrubs and grass around playgrounds with appropriate chemicals to increase the safety of carers and children, along with the information boards about the possible threat.
39. Many guardians of children observe not only their pupils but have the habit of constantly scanning the surroundings of the playground. They behave vigilantly of suspicious people and events, inform each other about perceptions and danger, taking an active part in caring for safety (for example, they used to intervene immediately when a child fell 'upstream' on a slide). We experienced personally the attitude during our field researches, especially when attempting to make a photographic documentation of playing children (this most frequently resulted in violent protest on the part of their guardians, even accusations of evil intentions).
40. Several guardians pointed to the legitimacy of monitoring (CCTV, camera) and introduction of permanent guardian or municipal duty guard, even periodic police patrols – in the face of anti-social behaviour: uninvolved individuals, hooliganism, devastation of equipment, littering of the area, including broken bottles of alcoholic beverages, dirty condoms or walking dogs without cleaning up after them.
41. It has been suggested to put more information boards with emergency telephone numbers, rules and warnings with lists of prohibited behaviours: walking dogs on the playground, using toys contrary to their purpose, and dangerous behaviours – like going upstream of a slide, approaching too close to swings.
42. Another suggestion was providing information about the current state of the environment in the immediate vicinity of the children's play area, including the most important data: on air pollution with dust, gases and noise, planned organized games, festivals; for example together with traditional information board also applications for smart phones.

The conclusions listed above, formulated on the base of the analysed material of our field notes and structured interviews show, that the short time spent on the playground, on average about 30 minutes during warm, rainless and sunny days, can be explained by boredom and poor facilities (less frequently by lack of time). For this reason, many people preferred to take their children to the city park, considered to be a more attractive place, so that they can play in a more inspiring environment.

As a result, for example on the playground at the University of Physical Education in Warsaw (AWF), at 34 Marymoncka Street, visitors to be found there

are not only from the district of Bielany but also from other parts of Warsaw, even from suburban Łomianki and Buraków. Toys and other facilities installed there are besieged, and at the most attractive ones (spider with a slide) on warm, sunny days queues are formed.

Residents of Warsaw, Nowy Dwór and Modlin unsatisfied with the recreation conditions on the green areas located near their place of residence, and usually poorly furnished and founded on very small areas, were more than 50% of our respondents. There were also complains about poor and limited greenery, lack of well-kept lawns, trees, shrubs or aesthetic flowerbeds. It should be emphasized that at the same time there were some postulates for removing shrubs and low growing tree branches due to the danger of ticks. People, who made critical remarks, were most often those who, decide to travel with their children to a distant, but considered as a more attractive playground, 1 or 2 times a week. Usually it meant a city park, located at the average distance of about 1.0–1.5 km from their permanent place of residence. It required using public transport (15–20 minutes) or private cars (5–10 minutes). As the time spent on the playground was estimated to be about 45 minutes, the total daily active recreation lasted no more than 90 minutes.

Discussion and conclusion

Numerous changes in our style and pace of life are also visible in the way of leisure and the selection of everyday forms of active recreation in the urban areas. As we expect higher standards of our living conditions, better services in the field of health, education, trade – we also have expectations in relation to sport and recreation areas.

These expectations are most often associated with the aesthetics of green areas, quality and selection of facilities, safe environment. It is important that the toys and gymnastic devices should allow attractive and diverse forms of sport and active recreation, adapted to the age, physical condition and interests of their users. In addition, many urban residents are looking for universal public greens – allowing active recreation and common fun for all three generations: grandparents, parents and children (Table 1). However, such expectations cannot always be satisfied, close to the place of one's residence. Many urban residents are forced to visit distant city parks, while their housing estates have nothing to offer except a small green square and a poorly arranged playground.

Table 1. Forms of recreation and proposed types of equipment for the three generations of users (age groups / recreation forms / recommended equipment)

Age	Recommended recreation forms	Recommended types of playground infrastructure facilities
Toddlers 3–4	Physical activities and group games with the supervision of adults, short distance running, playing in the sandbox, educational toys	sandpit (about 20 sq. m), paddling pool – fountain, stools and benches for caregivers, low swings and rockers on springs, carousels, thematic toys (houses, trains, cars), large blocks and puzzles – devices protected in summer by canvas roofing, grass squares for sunbathing and picnics, day room (recreation room, coffee room with toilet, toy rental), recreation benches, tables, lighting
Older children: 6–11	Team games, arcade games, educational logic jigsaws, competitions, cycling, roller skating, ice skating, sledding, skiing	sandpit (100 m ²), paddling pool – fountain, large Lego blocks, puzzle pieces, educational toys (including sonar ones), interlaces, swings, ‘monkey bridges’, slides, carousels, gymnastics, climbing wall, spiders, trampolines and athletic springboard, keg, common gaming square, bicycle path and a small skate park for simple evolutions, ice rink, tobogganing hills, swimming pool (shallow paddling pool), thematic toys (pirate ship, Indian village, castle), picnic areas, day room (hall recreation room, coffee room with toilet, toy rental), benches for rest, tables, lighting
Youths and adults	Different types of sports, group and individual activities, team games: football, volleyball, basketball, tennis, table tennis, cycling, ice skating, roller skating, skiing, skate boarding, running, yoga, Tai-Chi	multi-purpose sports field (volleyball, basketball), bicycle town (education of road safety), mini golf, tennis courts, gymnastic devices, spiders, trampolines and athletic springboards, climbing walls, bridges - balance beams, bike paths and ski trails, advanced skate park and snow park, green gyms, places to relax, table tennis equipment, chess tables and board games, ice rink, toboggan run, outdoor gym, grass squares for sunbathing, picnic areas, day room (recreation room, coffee room with toilet, sport equipment rental), benches for rest, tables, lighting
Elders	walking, cycling, cross-country skiing, individual and team games, relaxation, yoga, Tai-Chi	walking paths, shady places for peaceful rest, bicycle paths, cross-country ski routes, playing fields, table tennis equipment, chess tables and checkers, board games, mini golf, boules, Nordic walking paths, green gyms, park-chairs in sunny and shaded areas, day room (recreation room, coffee room with toilet, sport equipment rental), recreation benches, tables, lighting

Source: Authors' matrix based on the research material 2016–2019 for the project ds-300 AWF Warsaw.

The analysis of the research material of the field notes and structured interviews shows that despite significant improvement in the last three decades

(thanks to the revitalization of city parks, modernization of playgrounds, establishing green gyms, improvement of public space safety), the recreational needs of the urban residents have not been fully satisfied. The opinions of the users of public greens' are clear. They regret the green's shrinkage, lost to the new developing housing and shopping centres. Nevertheless, it should be emphasized that in the opinion of both, the users (analysis of the research material) and the professionals in this field [1, 19, 20, 21, 22] sport and recreation grounds, especially children playgrounds are now definitely more secure and meeting the criteria required by the law [7, 8]. Comparing the research material from 2008–2010 (project ds-114 AWF), repeated a decade later on the selected playgrounds in Warsaw, as part of the new project ds-300 AWF in 2017–2018, it should be stated that facilities there are much more varied and aesthetic, but the greenery is much poorer. It is bad news, and a change for the worse, as what we know on the base of our interviews and residents' opinions (2017–2018) is that both adults and children prefer natural style playgrounds. Urban citizens generally expect functional and aesthetic devices surrounded by rich greens. However, there is a big gap between these needs and reality. Urbanization of our towns has resulted in children and their families being separated from contact with nature.

Thus, we are dealing clearly with the problem of the lack of extensive green areas near the places of residence, but also with their insufficient preparation for physical activities, a less attractive program. This is especially true for newly established housing estates (Rydygier Estate, Żoliborz Artystyczny). Unfortunately, playgrounds are set up on small earth patches between high houses, planned on the basis of the same solutions as the neighbouring 'block', boring and monotonous in its repetition, without taking into account the local tradition and the identity of the place, and expectations of the local community. No wonder that in such conditions, only every tenth inhabitant on average uses the housing estate square for a short time, and over half of the children and carers we interviewed complained about the lack of an attractive programme and, as a result, used a facility away from home.

To better meet the needs of three generations of urban residents, we propose a holistic, multidisciplinary and multilevel approach. The model of establishing and managing recreational sports and recreation areas (including playgrounds for children) should, in our opinion, include four steps:

1. Inventory of the existing state, creation of databases, social research on the preferences of future users, development of standards, economic estimates.
2. Planning of the development based on the collected material of the inventory and databases, programme recommendations and recommendations, legal conditions; considering the flexibility of solutions, presentation of the local community project, industry and social consultations, discussion.
3. Implementation of projects, involvement of the local community in the process of creating a place of rest, promotion.

4. Management, maintenance of the accepted standards, organization of events and animation classes, popularization of various forms of active recreation and healthy lifestyle, monitoring of needs and diagnosis of possible conflicts, mitigation of disputes, introduction of new devices and forms of use.

What should be included in the detailed program? The answer cannot be in the form of a universal recommendation here, because each location of the sport and recreation area is different, there are various financial and terrain conditions, different expectations of the local community. Therefore, a reliable public consultation should always be an indispensable element of the preparation of the planned investment.

There is no doubt, however, that there is a need to establish integrated (universal, common) sports and recreation areas, enabling fun and recreation of the whole family, three generations: grandparents, parents and children. The idea of inclusive public greens aimed for sport, physical education and health with a rich, varied program, is not new. It was known and implemented before the Second World War in form of the Jordan Gardens [11], [13]. The method of planning such areas should consider the needs of a multigenerational family, enable active recreation: children, small, elder, adolescents, mature people and the elderly (Table 1).

However, a sufficiently large area is necessary to obtain satisfying sport and recreation areas in terms of such a program. It is possible to achieve only by increasing the share of green areas in the overall housing estate balance. There is no doubt that for the modern family such a solution is the most advantageous, but its implementation requires a thorough correction of the existing regulations and the conviction of the local community to preserve natural greens as a great value. Therefore, an element of education and information is important in order to convince the members of the local community, the inhabitants of the housing estate, who will benefit from this area, to such a solution together with obligation to cover high maintenance costs. Perhaps a good way to reduce these costs is to share public green areas, as serving several communities and co-financed by the Community budget or grants of the European Union.

We are sure that if not the present, the future generation will support this idea. New needs in the scope of daily activities, healthy lifestyle, sport and active recreation will be a consequence of further changes in the urban society itself, differing significantly from previous generations. The future generation will know more and understand better the value of open public greens. This direction of changes can be observed today as well, as our generation philosophy is different from our great grandfathers' ideas on this subject. During the last three decades (1989–2018) not only did changes occur on the labour market, economic changes, demographic changes (visible in the new structure of households), but also in the ways of spending free time and the approach to the value of nature.

Naturally the educational role is very important and it is crucial to promote healthy lifestyle on every possible occasion. For example, it should be noted that

when analysing field notes, our attention was attracted by doubtful dietary habits. The types of declared drinks and snacks brought to the playground, as a second breakfast or afternoon tea, containing a large share of sugary drinks and sweets, salty snacks and chocolate bars were alarming. Perhaps, for example, the project of a 'healthy snack' kiosk set up on the playground, with an offer promoting healthy, balanced food, information and educational leaflets, would help carers to prepare a second breakfast or afternoon tea for children without having to bring all products from home.

It does not mean that the opinions expressed by visitors of the surveyed public greens were useless. Among many important remarks made by the users themselves, cited in the previous section about improving the safety level on playgrounds – suggestions for protecting children against ticks (by applying appropriate sprays in a park or garden) seem very valid and important. Other important proposals are facilities against excessive overheating of children on hot days, this can be prevented for example by installing canopies and canvas over the sandpit and picnic tables, shower trays and fountains.

The issue of public toilets at public urban greens is still insufficiently solved. Perhaps the toilet cabins dedicated to infants with mother and children use, will better protect these devices from devastation and will be safer and more appropriate for children, allowing to maintain proper sanitary standards.

Another suggestion worth serious consideration is the installation at the entrance to the playground next to the traditional boards, also an additional one, for example in form of a QR application, informing about the current state of the environment, and planned, organized events, festivities.

The material of our research (observations and opinions expressed during interviews) shows, that carers rarely play together with their children, even though children appreciate and highly value such games. Therefore, it might be a good solution (especially valuable for the children not included in pre-school education) to initiate common organized activities at popular playgrounds in the city parks. They could take place, on selected days of the week, being addressed to children of different age groups and their guardians. The participation of professionals is required – animators, graduates of pedagogy and sports and recreation, specialists in physical education and graduates of sports faculties of AWFs.

Finally, we would like to emphasize that consistency is necessary in health promotion programs and pro-health behaviours. It is difficult to shape the desirable attitudes of active recreation, to pursue with confidence the slogans of 'sport for everyone', 'sport in the family', if there are not enough conditions, such as green areas and appropriate facilities, necessary for their implementation – universal and inclusive playgrounds enabling the representatives of the three different generations to do the physical exercises and play team games.

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Deklaracja braku konfliktu interesów

Autorzy deklarują brak potencjalnych konfliktów interesów w odniesieniu do badań, autorstwa i/lub publikacji artykułu *Sport and physical activity in the urban area – housing estate greens for three generations*.

Finansowanie

Autorzy nie otrzymali żadnego wsparcia finansowego w zakresie badań, autorstwa i/lub publikacji artykułu *Sport and physical activity in the urban area – housing estate greens for three generations*.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the research, authorship, and/or publication of the article *Sport and physical activity in the urban area – housing estate greens for three generations*.

Funding

The authors received no financial support for the research, authorship, and/or publication of the article *Sport and physical activity in the urban area – housing estate greens for three generations*.
