Malchrowicz-Mośko Ewa, Rozmiarek Mateusz. Olympic movement and cancer prevention. Journal of Education, Health and Sport. 2022;12(7):410-415. eISSN 2391-8306. DOI http://dx.doi.org/10.12775/JEHS.2022.12.07.040
https://apcz.umk.pl/JEHS/article/view/JEHS.2022.12.07.040
https://zenodo.org/record/6815167

The journal has had 40 points in Ministry of Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of December 21, 2021. No. The journal has had 40 points in Ministry of Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of December 21, 2021. No. 32343.
Has a Journal's Unique Identifier: 201159. Scientific disciplines assigned: Physical Culture Sciences (Field of Medical sciences and health sciences); Health Sciences (Field of Medical Sciences and Health Sciences).

Punkty Ministerialne z 2019 - aktualny rok 40 punktów. Załącznik do komunikatu Ministra Edukacji i Nauki z dnia 21 grudnia 2021 r. Lp. 32343. Posiada Unikatowy Identyfikator Czasopisma: 201159.
Przypisane dyscypliny naukowe: Nauki o kulturze fizycznej (Dziedzina nauk medycznych i nauk o zdrowiu); Nauki o zdrowiu (Dziedzina nauk medycznych i nauk o zdrowiu).

© The Authors 2022;
This article is published with open access at Licensee Open Journal Systems of Nicolaus Copernicus University in Torun, Poland
Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author (s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike. (http://creativecommons.org/licenses/by-nc-sa/4.0/) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited.
The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 22.06.2022. Revised: 22.06.2022. Accepted: 10.07.2022.

Olympic movement and cancer prevention

Ewa Malchrowicz-Mośko, Mateusz Rozmiarek

Department of Sports Tourism, Faculty of Physical Culture Sciences
Poznan University of Physical Education

ORCiD: Ewa Malchrowicz-Mośko (0000-0002-7676-1477), Mateusz Rozmiarek **(**0000-0002-5955-0790). Correspondence: malchrowicz@awf.poznan.pl.

Abstract

The aim of this article was to discuss the issue of kinesiophobia during and after oncological treatment. It highlights the role of the Olympic movement in the field of health promotion and cancer prevention, as well as the role of athletes who have overcame an oncological disease in promoting an active attitude of society towards sport. The attention was paid also to the insufficient number of sports events targeted at onco-patients.

Key words: Olympic Games, cancer, breast, health prevention, public health, oncology

Introduction

In addition to hereditary and environmental factors, modifiable factors such as lifestyle, including insufficient level of physical activity, influence the incidence of malignant neoplasms. Cancer is increasingly a chronic, rather than mortal, disease. Regular physical activity improves the results of oncological treatment, improves the quality of life of patients in the physical and mental sphere, and reduces the risk of disease recurrence or the emergence of complications and new civilization diseases. There is a widespread opinion in society that cancer patients should avoid excessive physical exertion (fear of pain, fatigue or the spread of neoplastic disease). On top of that, depression can occur after hearing the diagnosis, which is not conducive to building motivation to participate in sports (Mehnert et al., 2014). However, according to scientists, even during intensive oncological treatment (including chemotherapy), patients do not need to save themselves.

In 2020, World Health Organization issued official recommendations that adult cancer patients should perform the same weekly dose of physical activity as fully healthy people (*WHO Guidelines on Physical Activity and Sedentary Behavior*, 2020). It is therefore important to educate patients that it is possible to live actively with cancer. Unfortunately, as the research results show, the participation of doctors and physiotherapists in motivating cancer patients to undertake systematic physical activity is still not sufficient and is not conducive to undertaking positive health behaviors related to physical activity (Prokopowicz et al., 2018). Often also sports instructors, gym workers, etc. do not know how to work with onco-patients. Athletes appearing in the mass media and mass onco-sports events, and above all the Olympic movement, can help the society change the habits of oncopatients.

Olympic movement and cancer prevention

Not only athletes are becoming role models for onco-patients. Also, the Olympic movement is increasingly involved in the problems of cancer prevention. Brazilian Olympic Committee (COB) President Paulo Wanderley Teixeira has hailed the organisation's involvement in international cancer prevention campaigns. The COB has joined Pink October and Blue November. October is breast cancer awareness month, while Blue November promotes preventive measures for prostate cancer. The Team Brazil Training Centre in Rio de Janeiro has had its facade illuminated in pink and blue, in reference to the international awareness movements. In 2020, WHO and International Olympic Committee teamed up to improve health through sport. This collaboration is timely. The current COVID-19 pandemic is particularly affecting people with noncommunicable diseases (Wu et al., 2021). The agreement has a special focus on preventing these diseases through sport. Physical activity helps lower blood pressure and reduce the risk of hypertension, coronary heart disease, stroke, diabetes, and various types of cancer (including breast cancer and colon cancer).

The role of the Olympic movement in health promotion is also important in creating the health legacy of the Olympic Games. Some studies show that observing a mass sport event has a positive impact on the willingness to engage in regular physical activity as well as the willingness to take part in a sporting event in the future (Malchrowicz-Mośko et al., 2019).

According to Taks et al. (2018) mass sport events may translate into increased interest in sport in the future (so-called long-term effects) including alliances between sports organization, event organizers, and non-sport stakeholders (to strengthen the link between events for viewers/spectators and participation in sport) (Taks et. al., 2018).

For example, the organizing committee of the 2012 Olympic Games in London promised that the Games would contribute to the promotion of sports participation among all social groups in Great Britain (Girginov & Hills, 2008). Since London was awarded the 2012 summer Olympic Games back in 2005, the UK has undergone a transformation, e.g. the capital has witnessed the birth and maturity of the Olympic Park. Olympic fever undoubtedly raises the profile of sport, and encourages public participation. With sporting challenge as the stock- in-trade for cancer charities, Olympic-themed philanthropic activities could benefit significantly from this surge of interest. There can be no doubt that the popular mood can only have a positive impact on the success of fundraising sporting events. As the legacy of London as a host city begins a new chapter, the broader impact of the Games will hopefully be to spark enthusiasm for sports, in the UK and worldwide. Restrictions, imposed by the London Organising Committee of the Olympic and Paralympic Games, limit the opportunities for charities to link their activities to the Olympic brand. But the overwhelming upsurge in sports participation in the UK is a force that should financially benefit any cancer charity that has a sport-related fundraising event (*Cancer and Society*, 2012).

Athletes as oncological patients

In 2018, the then 35-year-old American ski runner Kikkan Randall, Olympic gold medalist from Pyongyang in the team sprint, reported that she had breast cancer and was undergoing chemotherapy. She emphasized that at the time of the diagnosis, the athlete's mind took over – she treated the disease as her next challenge. Another American runner, Gabriele Grunewald, has struggled with cancer four times. Another female athlete struggling with cancer is Chaunté Lowe. Four-time Olympic high jumper is raising the bar for breast cancer awareness. After being diagnosed with the disease three years ago at age 35, Lowe is now cancer-free. Yet the 2008 Olympic bronze medalist continues to champion the expansion of resources and support for those facing breast cancer, especially in the African American community, while urging people to be proactive by knowing the risks and getting tested. Former tennis player Martina Navratilova also won the fight against breast cancer. She found out about the disease in February 2010 during routine mammography tests. She had the surgery already in March. Moments after the operation, the athlete took part in a triathlon and planned further sports activities. The basketball player Edna Campbell is also a symbol of the fight against breast cancer. Campbell continued to play basketball even while undergoing treatment. Her return and defeat of cancer has been hailed as one of the highlights of the decade in the WNBA. After retiring in 2005, she became a qualified nurse. Her motivation was to help others. Currently, she is the founder and director of the breast cancer recovery program. Another inspiration comes from the story of William-Mill’s Novlene. In 2012, Novlene Williams-Mills found out she had breast cancer. Three days after the Olympics, where she took fifth place in the 400 m race, she won bronze in the relay race, the athlete underwent surgery and decided to have a mastectomy. According to scientists, women who participated in sport have a reduced risk of breast cancer (Kruk, 2003).

In 1996, cyclist Lance Armstrong was diagnosed with testicular cancer that had spread to his abdomen, lungs and brain. Two years later, after operations and intensive chemotherapy, it was found out that he was no longer sick. Before being diagnosed with cancer, Armstrong competed in the 1992 Olympics. He later competed again in the 2000 Olympics in Sydney. Caris LeVert is a basketball player who plays for the NBA team Indiana Pacers. He learned about kidney cancer in January 2020. The player underwent surgery and returned to the game in the same season. Arjen Robben is a Dutch footballer who was diagnosed with testicular cancer shortly after joining Chelsea in 2004. Soon after undergoing surgery, Robben began to shine with the colors of the new club. From that moment on, he also tries to make other men aware. Cancer did not leave a big mark on his career. The Dutchman has become one of the best wingers in sports history. Mario Lemieux, one of the best hockey players in the history of the sport, struggled with Hodgkin's disease. The former Canadian hockey player defeated Hodgkin's disease in 1993. Moments later, the athlete established a foundation in his name to help research and treat neoplastic diseases. Four years ago, in Pyongyang, Max Parrot won the silver medal of the Winter Olympics. A few months later, a Canadian snowboarder had his life turned upside down when he learned that he had cancer. He took up a fight and did not give up on his dreams. In Beijing, he became the Olympic champion. French footballer Eric Abidal suffered from liver cancer. Two months after surgery, he played 90 minutes in the UEFA Champions League final. Nevertheless, a year later, Abidal had to have a liver transplant. This time it took him a little longer to regain full fitness, almost a whole year. Polish canoeist defeated cervical cancer. Aneta Konieczna found out about the diagnosis in May 2012. She quickly underwent surgery and returned to training. In the same year, she took part in the Olympics in London, where she took fourth place in the K-4 competition. The former Polish representative in football, Paweł Kryszałowicz, won the fight against colon cancer. Kryszałowicz informed about the disease in 2018. The football community started to help the former footballer. In August 2019, he announced that he had won with the disease and could be active in the world of football again. In 2014, 23-year-old volleyball player Grzegorz Bociek learned that he was suffering from cancer of the lymphatic system, which forced him to suspend his career. In April 2015, Bociek recovered and a moment later the volleyball player returned to training. Currently, he still plays volleyball at the highest level and in July 2021 he became a new player of Gwardia Wrocław.

These athletes showed that although returning to sport after an illness is difficult, it is not impossible and cancer is a disease like any other, severe and sometimes mortal, but in many cases also chronic or fully curable. Cancer survivors play a double role in modern society – they are a model and give hope that cancer can be won and they show that you can also be physically active in cancer. The problem of fear of movement (kinesiophobia) among cancer patients may build a hypokinetic attitude. Such an attitude is not conducive to undertaking generally understood physical activity, and in sick people it can also cause problems during physiotherapy. Cancer-related fatigue is one of the problems that is the most activity limiting and frequently reported. About 30% of the cancer patients report feelings of fatigue even for years after the end of treatment (Velthius et al., 2011).

It should be remembered that in Poland there is still too little number of initiatives and sports events aimed at onco-patients, which would promote proper patterns of living with cancer and which would build a more inclusive society. Such initiatives most often come from charity foundations. The most famous sports events in Poland are e.g. OncoRun, female run Zawsze Pier(w)si or Onco-Games for children in Wrocław. Oncology Games of various kinds have already become quite popular in the world. Research conducted so far has shown that the organization of mass sports events, through the effect of demonstration, may also encourage fans to exercise (Malchrowicz-Mośko et al., 2019). Above all, however, onco-sports events increase the quality of life of patients and build a sense of community among onco-patients and their families.

The growing number of cancer cases and the negative consequences of the disease not only impair the physical and social functioning of patients, but also have a negative impact on the economics of the health care system and economic phenomena in a broader sense. Therefore, actions aimed at preventing and treating cancer have become one of the greatest challenges in the field of health care in the country and it is necessary to manage the attitudes of oncology patients towards sport more effectively, especially during the COVID-19 pandemic (e.g. due to the fear of physical rehabilitation in hospitals).

Conclusions

Exercise should be an essential part of any treatment plan for anyone diagnosed with cancer. However, most of these patients are inactive and few receive individual recommendations and follow-up to ensure safe and effective exercise plans. Movement exercises are recommended in every phase of cancer treatment and may reduce undesirable symptoms related to the circulatory, respiratory, nervous and digestive systems. Physical exercise also has a beneficial effect on reducing the level of fatigue in cancer fatigue syndrome, which is one of the most common undesirable symptoms of oncological treatment. In this difficult situation, the gradual introduction of regular physical activity may be the only way to break the vicious cycle in which fatigue, being a symptom of low performance, also becomes a reason for avoiding movement.

Additional fear of movement (kinesiophobia) can trigger additional chronic comorbidities, such as obesity and osteoporosis. Athletes, including Olympians who defeated cancer, play a double role in modern society – they are a model and give hope that cancer can be won and they show that you can also be physically active in cancer. At the same time, it is still important to bear in mind the need for further research into recommended doses of physical activity in the context of cancer development, as prolonged, strenuous exercise may increase the risk of, for example, thyroid cancer in women (Robsahm et al., 2020). Whereas benefits from physical activity and sport among cancer patients seem obvious, there are still several pending clinical and biological issues (Bouillet et al., 2015).

References

1. Bouillet, X.B., Brami, K.Ch., Copel, L., Dauchy, S., Delcambre, C., Descotes, J.M., Joly, F., Lepeu, G., Marre, A., Scotte, F., Spano, J.P., Zelek, L. *Role of physical activity and sport in oncology: Scientific commission of the National Federation Sport and Cancer CAMI*, Critical Reviews in Oncology, 2015, 94(1), pp. 74-86.
2. *Cancer and Society*, 2012, www.thelancet.com/oncology.
3. Girginov, V., Hills, L. *A sustainable sports legacy: creating a link between the London Olympics and sports participation*, International Journal of Sport History, 2008, 25, pp. 2091-2116.
4. Kruk, J. *Sport activity and the risk of breast cancer: results from a case-control study*, Biology of Sport, 2003, 20(3), pp. 243-257.
5. Malchrowicz-Mośko, E., Poczta, J., Adamczewska, K. *The potential of non-mega sporting events for the promotion of physical activity among inactive supporters at the Poznan half marathon: a case study*, International Journal of Environmental Research and Public Health, 2010, 16(21), pp. 4193.
6. Mehnert, A., Brähler, E., Faller, H., Härter, M., Keller, M., Schulz, H., Wegscheider, K., Weis, J., Boehncke, A., Hund, B., Reuter, K., Richard, M., Sehner, S., Sommerfeldt, S., Szalai, C., Wittchen, H.U., Koch, U. Four-week prevalence of mental disorders in patients with cancer across major tumor entities. Journal of Clinical Oncology, 2014, 32(31), pp. 3540-3546.
7. Prokopowicz, K., Kozdroń, E., Prokopowicz, G., Molik, B., Berk, A., Mucha, J. *Uwarunkowania aktywności fizycznej kobiet po przebytym leczeniu operacyjnym raka piersi / Conditions of physical activity undertkaen by women after surgical breast cancer treatment*, Hygeia Public Health, 2018, 53(1), pp. 100-105.
8. Robsahm, T.E., Hestvik, U.E., Veierod, M.B., Fagerlie, A., Nystad, V., Engebretsen, L., Tretli, S. *Cancer risk in Norwegian world class athletes*, Cancer Causes & Control, 2010, 21(10), pp. 1711-1719.
9. *WHO Guidelines on Physical Activity and Sedentary Behavior*, Geneva 2020.
10. Taks, M., Green, B., Misener, L., Chalip. L. *Sport participation from sport events: Why it does not happen?* Marketing Intelligence and Planning. 2018, 36, pp. 185-198.
11. Velthius, M.J., Van den Bussche, E., May, A.M., Gijsen, B.C.M., Nijs, S., Vlaeyen, W.S. *Fear of movement in cancer survivors: validation of the Modified Tampa Scale of Kinesiophobia – Fatigue*, Psycho-Oncology, 2011, 21(7), pp. 762-770.
12. Wu, T., Jia, X., Shi, H., Niu, J., Yin, X., Xie, J., Wang, X. *Prevalence of mental health problems during the COVID-19 pandemic: A systematic review and meta-analysis*. Journal of Affective Disorders, 2021, 281, pp. 91-98.