SPORT I TURYSTYKA
ŚRODKOWOEUROPEJSKIE CZASOPISMO NAUKOWE

T. 6

NR 1

UNIWERSYTET HUMANISTYCZNO-PRZYRODNICZY IM. JANA DŁUGOSZA
W CZĘSTOCHOWIE

SPORT I TURYSTYKA

ŚRODKOWOEUROPEJSKIE CZASOPISMO NAUKOWE

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SPIS TREŚCI
CONTENTS

Wstęp

W 2023 r. czasopismo „Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe" ukazuje się szósty rok. Jest kontynuacją czasopisma „Prace Naukowe Akademii im. Jana Długosza w Częstochowie. Kultura Fizyczna". W pierwszym numerze zostały zaprezentowane prace Autorów z różnych ośrodków naukowych w Polsce i na świecie.

Część I – *Dzieje kultury fizycznej w Polsce i na świecie* – odnosi się do następującej tematyki:

— wychowanie fizyczne i higiena szkolna w Gimnazjum Wołyńskim (1805–1833);
— zmieniające się poglądy na rolę nauczycieli wychowania fizycznego i trenerów sportowych w polskiej literaturze z zakresu pedagogiki sportu do 2015 r.

W części II, zatytułowanej *Teoria i metodyka wychowania fizycznego i sportu*, przedstawiono trzy artykuły:

— związek między konfliktem roli nauczyciela sportu a poczuciem własnej skuteczności z mediacyjną rolą orientacji na cel sportowy;
— wirus (COVID-19) – epidemia i wyniki sportowe: przykłady z azjatyckich profesjonalnych klubów piłkarskich;
— wpływ złożonego szkolenia wojskowo-sportowego na zdolności psychofizjologiczne kadetów uniwersyteckich.

Część III, odnosząca się do uwarunkowań zdrowia, postaw prozdrowotnych, jakości życia, ujmuje następujące zagadnienia:

— wpływ 12-tygodniowych programów ćwiczeń aerobowych na fizyczne i psychofizjologiczne parametry zdrowotne otyłych mężczyzn;
— skuteczność różnych programów aktywności fizycznej w zwiększaniu funkcjonalności młodych kobiet.

Część IV czasopisma dotyczy problematyki turystyki i rekreacji. Zamieszczono w niej pracę odnoszącą się do problemu uwarunkowania wyjazdów turystycznych do województwa warmińsko-mazurskiego w dobie pandemii COVID-19.

W ramach części *Biogramy, dyskusje, polemiki, recenzje, przegląd wydawnictw, sprawozdania* dr hab. prof. UJD Renata Urban przybliżyła monografię autorstwa Macieja Łuczaka i Tomasza Jurka pt. *Medaliści olimpijscy Akademii Wychowania Fizycznego im. Eugeniusza Piaseckiego w Poznaniu w latach 1950–*

2020. W kolejnej recenzji dr Arkadiusz Włodarczyk zaprezentował monografię Eligiusza Małolepszego i Teresy Drozdek-Małolepszej *Zarys dziejów Gminnego Ludowego Klubu Sportowego Pogoń 1947 Kłomnice* (*1947–2021*).

Pragnę złożyć serdeczne podziękowania Recenzentom za cenne i życzliwe uwagi, podnoszące wartość niniejszego periodyku. Dziękuję za współpracę Autorom publikacji zamieszczonych w czasopiśmie naukowym. Jednocześnie wyrażam nadzieję, że liczba Osób zainteresowanych publikowaniem własnych osiągnięć naukowych w kolejnych wydaniach czasopisma „Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe" się poszerzy.

Eligiusz Małolepszy

Część I

Dzieje kultury fizycznej w Polsce i na świecie

UNIWERSYTET HUMANISTYCZNO-PRZYRODNICZY IM. JANA DŁUGOSZA W CZĘSTOCHOWIE
Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe 2023, t. 6, nr 1

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Wychowanie fizyczne i higiena szkolna w Gimnazjum Wołyńskim (1805–1833)

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Physical education and school hygiene in the Volhynian Gymnasium (1805–1833)

Abstract

The aim of this article is to introduce assumptions in the scope of physical education, health education and care carried out in the Volhynian Gymnasium in Krzemieniec. The school that was established on the initiative of Tadeusz Czacki functioned over the period 1805–1833. It was the representative institution, in which education of young people was provided according to the newest for that age education models. In the curriculum there were proposals of the National Education Commission, part of which concerned issues connected with physical and health education. In the Volhynian Gymnasium physical education gained particular recognition and became equally important as other taught subjects. Pupils had to take part in physical activities, which included running, sword playing and swimming. Furthermore, additional activities like horse riding, fencing and dancing were organized. In school curriculum there was a hygiene course, and pupils were provided with the extensive medical care, starting education in this subject through providing medical attention in the school and at home.

Keywords: physical education, health education, school hygiene, Volhynian Gymnasium, 19th century.

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Streszczenie

Celem artykułu jest przybliżenie założeń w zakresie wychowania fizycznego, edukacji i opieki zdrowotnej realizowanych w Gimnazjum Wołyńskim w Krzemieńcu. Szkoła, założona z inicjatywy Tadeusza Czackiego, funkcjonowała w latach 1805–1833. Była modelową placówką, w której kształcenie młodzieży odbywało się według najnowszych wzorów oświatowych epoki. W części dotyczącej zagadnień związanych z wychowaniem fizycznym oraz zdrowotnym swoje odzwierciedlenie w programie znalazły również propozycje Komisji Edukacji Narodowej. W Gimnazjum Wołyńskim szczególnie nobilitowane zostało wychowanie fizyczne, którego wartość została zrównana z innymi przedmiotami. Uczniowie obowiązkowo brali udział w zajęciach ruchowych, których stałymi elementami były: biegi, fechtunek na kije oraz pływanie. Ponadto organizowano zajęcia dodatkowe z jazdy konnej, szermierki oraz tańca. W szkolnym programie nauczania znalazło się miejsce dla kursu higieny, a uczniów objęto szeroko zakrojoną opieką medyczną. Byli edukowani na temat zdrowia i higieny osobistej, mieli również zapewnioną opiekę lekarską w szkole i w domu. Konsekwentnie realizowany program sprawił, że krzemieniecka szkoła była placówką wyróżniającą się w ogólnym systemie szkolnictwa, w której kształcenie umysłowe zsynchronizowano z kształceniem sprawności fizycznej oraz budową postaw prosomatycznych.

Słowa kluczowe: wychowanie fizyczne, edukacja zdrowotna, higiena szkolna, Gimnazjum Wołyńskie, XIX wiek.

Wstęp

14 października 1773 r. Sejm Wielki powołał do życia Komisję Edukacji Narodowej, zwaną pierwszym ministerstwem oświaty w Europie. Jej zadaniem było przeprowadzenie reformy szkolnictwa w duchu idei epoki oświecenia. Celem zreformowanej edukacji miało być wykształcenie człowieka, który będzie przydatny społeczeństwu i krajowi. Działania te były z jednej strony odpowiedzią na nowe kierunki w edukacji, jakie pojawiły się w XVIII w., będące konsekwencją narodzin nowoczesnych form ruchowych, które, jak zauważa L. Szymański, dały podstawę wychowaniu fizycznemu w szkole[1]. Z drugiej zaś, miały przeciwdziałać złej sytuacji zdrowotnej polskiego społeczeństwa, która zagrażała jego biologicznemu rozwojowi. Powszechny był niski poziom wiedzy na temat utrzymania zdrowia oraz nieprzestrzeganie podstawowych zasad sanitarnych. Szczególnie groźne były choroby zakaźne, a wśród nich najczęściej występującą w tym czasie ospa, która rozprzestrzeniała się jak każda epidemiczna choroba w dużych zbiorowiskach, m.in. w szkołach. O zaniedbaniach stanu zdrowia dzieci informowała osiemnastowieczna prasa, w której niejednokrotnie podkreślano fakt, że niezależnie od przynależności stanowej obywateli ogólna sytuacja była bardzo zła[2].

[1] L. Szymański, *Higiena i wychowanie fizyczne w szkolnictwie ogólnokształcącym w Królestwie Polskim 1815–1915*, PWN, Wrocław 1979, s. 11–12.

[2] Zob. więcej: M. Sosińska-Trawińska, *Zalecenia lecznicze w chorobach dzieci zawarte w wybranych czasopismach nielekarskich XVIII w. w Polsce*, „Archiwum Historii Medycyny" 1983, t. 46, nr 3, s. 285–294.

Od połowy XVIII w. z Europy Zachodniej do Polski zaczęły napływać propagowane przez lekarzy i pedagogów nowe idee związane z higieną i profilaktyką zdrowotną, wśród których ważne miejsce zajmowała aktywność fizyczna[3].

W tej sytuacji szkoła miała zapewnić rozwój w trzech wymiarach: moralnym, intelektualnym i fizycznym. Przed Komisją postawiono zadanie opracowania nowych programów oraz zasad funkcjonowania i nadzoru dla szkół wszystkich szczebli kształcenia[4]. Wśród wielu propozycji znalazły się również nowatorskie rozwiązania w zakresie wychowania fizycznego i edukacji higienicznej. Tym zagadnieniom poświęcony został rozdział XXV *Ustaw Komisji Edukacji Narodowej dla stanu akademickiego i na szkoły w krajach Rzeczypospolitej* zatytułowany *Edukacja Fizyczna*, gdzie ćwiczeniom fizycznym przypisano znaczenie zdrowotne i społeczne. Również część luminarzy Komisji Edukacji Narodowej w swoich rozważaniach wykazywało istotną rolę edukacji w zakresie wychowania fizycznego oraz zdrowotnego. W gronie tym znaleźli się m.in.: Adolf Kamieński, Hugo Kołłątaj, Grzegorz Piramowicz, Antoni Popławski, Stanisław Staszic oraz Jędrzej Śniadecki.

W zreformowanych szkołach wprowadzano zajęcia ruchowe; co prawda, nie jako odrębny przedmiot, ale w formie rekreacyjnych zajęć w czasie wolnym uczniów. Za sposób przeprowadzenia zajęć odpowiadali nauczyciele wszystkich przedmiotów, gdyż specjalistów od wychowania fizycznego wówczas jeszcze nie było. W tym zakresie ustawodawcy sugerowali, aby dniami rekreacji były wtorek i czwartek. Celem organizowanych ćwiczeń było wyrabianie siły, szybkości, zręczności i odwagi[5]. Równocześnie zadbano o poprawę stanu zdrowotnego obywateli, ponieważ do szkół wprowadzono „nauki o zachowaniu zdrowia”[6]. Aby przekazywać wiedzę na temat utrzymania i poprawy zdrowia, korzystano przede wszystkim z dorobku Samuela Tissota oraz Jamesa MacKenziego[7]. Ich prace zostały przetłumaczone na język polski i stały się głównymi podręcznikami dla kursantów[8]. Próbę opracowania polskiego podręcznika higieny podjął Paweł

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[3] Zob. E. Kałamacka, *Utylitarne i zdrowotne wartości edukacji fizycznej w Polsce w XVIII w.*, [w:] Z. Dziubiński (red.), *Edukacja poprzez sport*, Salezjańska Organizacja Sportowa Rzeczypospolitej Polskiej, Warszawa 2004, s. 456–465.

[4] Zob. więcej: B. Suchodolski, *Komisja Edukacji Narodowej*, Wiedza Powszechna, Warszawa 1973; A. Jobert, *Komisja Edukacji Narodowej w Polsce* (*1773–1794*), Zakład Narodowy im. Ossolińskich, Wrocław 1979.

[5] *Ustawy Kommissyi Edukacyi Narodowey dla stanu akademickiego i na szkoły w krajach Rzeczypospolitey*, Warszawa 1783, s. 62; http://pbc.up.krakow.pl/dlibra/doccontent?id=421 [dostęp: 10.10.2021].

[6] K. Hądzelek, R. Wroczyński, *Postulaty i działalność Komisji Edukacji Narodowej w dziedzinie wychowania fizycznego*, [w:] K. Hądzelek, R. Wroczyński (red.), *Spuścizna Komisji Edukacji Narodowej w dziedzinie wychowania fizycznego*, Wydawnictwo „Sport i Turystyka”, Warszawa 1978, s. 27.

[7] A. Jobert, *Komisja Edukacji Narodowej…*, s. 130.

[8] S. Tissot, *Rada dla pospólstwa względem zdrowia jego przez P. Tyssot, doktora i profesora medycyny, i wielu akademii towarzysza*, Drukarnia Pijarów, Warszawa 1790; J. MacKenzie, *Sztuka utrzymania zdrowia i innej historia*, Scholarum Piarum, Wilno 1769.

Czempiński, ale nieskutecznie. Jednakże w tym temacie wyróżniały się prace Grzegorza Piramowicza: *Nauka obyczajowa dla ludu*[9] oraz *Powinności nauczyciela, mianowicie zaś w szkołach parafialnych i sposoby ich dopełniania*[10]. Pierwsza pozycja była adresowana do uczniów, zawierała podręcznikowe informacje dotyczące zachowania zdrowia. Drugi tytuł natomiast był skierowany do nauczycieli, na których zgodnie z zamierzeniami reformy miał spoczywać obowiązek edukacji w zakresie higieny[11].

Śmiałe plany Komisji utrudniał brak infrastruktury, odpowiednio przygotowanej kadry oraz środków finansowych. W końcu upadek Rzeczypospolitej przerwał realizację reformy polskiego szkolnictwa. Szansa na wykorzystanie przynajmniej części propozycji KEN w zaborze rosyjskim pojawiła się w 1803 r. wraz z ustawą cara Aleksandra I, w której okręgowi wileńskiemu i jego kuratorowi przyznano szerokie uprawnienia w dziedzinie oświaty[12]. To wówczas w Krzemieńcu na Wołyniu powstała szkoła, w której podjęto próbę realizacji edukacji w zakresie wychowania fizycznego oraz edukacji o higienie.

Metody i pytania badawcze

Celem artykułu jest przybliżenie oraz uzupełnienie dotychczasowej wiedzy, na podstawie nowych źródeł i literatury, na temat założeń w zakresie wychowania fizycznego, edukacji i opieki zdrowotnej, realizowanych w Gimnazjum Wołyńskim w Krzemieńcu. Zagadnieniem ogólnej higieny i wychowania fizycznego w omawianym okresie zajmowali się m.in. E. Kałamacka[13], L. Szymański[14] oraz

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[9] Nauka obyczajowa stanowiła trzecią cześć *Elementarza dla szkół parafialnych narodowych*, wydanego w 1785 r. Cały podręcznik składał się z czterech części: *I. Nauka czytania i pisania*, *II. Katechizm*, *III. Nauka obyczajowa*, *IV. Nauka rachunków*. Autorem pierwszej i drugiej części był Onufry Kopczyński, trzeciej Grzegorz Piramowicz, czwartej Antoni Gawroński.

[10] Zob. więcej: G. Piramowicz, *Powinności nauczyciela, mianowicie zaś w szkołach parafialnych i sposoby ich dopełniania*, Drukarnia Nadworney J. K. Mci i P. Kom. E. Naro., Warszawa 1787.

[11] P. Tarkowski, *Grzegorza Piramowicza troska o zdrowie i sprawność fizyczną*, [w:] W. Korpalska, W. Ślusarczyk (red.), *Czystość i brud. Higiena nowożytna* (*XV–XVIII w.*), Collegium Medicum im. Ludwika Rydygiera, Bydgoszcz 2015, s. 195–205.

[12] A. Szmyt, *Struktura szkolnictwa w imperium rosyjskim na początku XIX wieku*, „Przegląd Wschodnioeuropejski" 2021, nr 1, s. 21–33.

[13] E. Kałamacka, *Zdrowotno-higieniczne aspekty wychowania fizycznego w poglądach i działalności polskich lekarzy do 1914 r.*, Akademia Wychowania Fizycznego im. B. Czecha w Krakowie, Kraków 2003; taż, *Zdrowotne aspekty kultury fizycznej w XIX wieku*, [w:] Z. Dziubiński, K.W. Jankowski (red.), *Kultura fizyczna w społeczeństwie nowoczesnym*, Akademia Wychowania Fizycznego Józefa Piłsudskiego: Salezjańska Organizacja Sportowa Rzeczypospolitej Polskiej, Warszawa 2009, s. 487–494; taż, *Utylitarne i zdrowotne wartości…*

[14] L. Szymański, *Higiena i wychowanie fizyczne…*

M. Ordyłowski[15]. Problematyka edukacji w tym zakresie pojawiała się w Krzemieńcu w pracach naukowych; z reguły jednak jako jeden z wielu elementów przy omawianiu dorobku Komisji Edukacji Narodowej lub przy okazji monografii traktujących o Gimnazjum Wołyńskim. Warto w tym miejscu wskazać na prace autorstwa m.in. J. Konopnickiego[16], E. Danowskiej[17], A. Szmyta[18].

Do przygotowania niniejszej pracy wykorzystano metody: syntezy, analizy tekstów źródłowych, indukcji oraz porównawczą. Postawiono następujące pytania badawcze:

1. Jakie uwarunkowania miały wpływ na rozwój wychowania fizycznego i higieny szkolnej w Gimnazjum Wołyńskim?
2. Jakie były założenia programowe w zakresie wychowania fizycznego?
3. W jaki sposób dbano o zdrowie uczniów krzemienieckiej szkoły?

Wyniki i dyskusja

Początki i organizacja szkoły w Krzemieńcu

W okresie prac Komisji Edukacji Narodowej funkcjonowała w Krzemieńcu główna szkoła wydziału wołyńskiego, która podlegała Szkole Głównej Koronnej w Krakowie. Do trzeciego rozbioru w jej murach były realizowane założenia reformy oświatowej. Po upadku Rzeczypospolitej przyszłość szkoły stała się niepewna, ponieważ placówka była w pełni zależna od władz rosyjskich. Sytuacja zmieniła się wraz z ukazem carskim z 24 stycznia 1803 r., wprowadzającym nowy system szkolny na ziemiach przyłączonych do Cesarstwa Rosyjskiego[19]. W maju tego samego roku Tadeuszowi Czackiemu (1765–1813) powierzono urząd wizytatora szkół guberni wołyńskiej, podolskiej i kijowskiej. Pełniąc obowiązki na podległym mu terenie, dostrzegł dramatyczną sytuację panującą w szkołach – trudne warunki lokalowe, uczniowie przerywający naukę, niski poziom kształcenia. Również nauczyciele byli źle opłacani, a pozbawieni motywacji, w sporej czę-

[15] M. Ordyłowski, L. Szymański, *Problemy higieniczno-zdrowotne i edukacja fizyczna w polskiej myśli medycznej i pedagogicznej oraz w praktyce oświatowej od średniowiecza po I wojnę światową*, Dolnośląska Szkoła Wyższa, Wrocław 2016.

[16] J. Konopnicki, *Wychowanie fizyczne w Gimnazjum Wołyńskim*, [w:] K. Hądzelek, R. Wroczyński (red.), *Spuścizna Komisji Edukacji Narodowej…*, s. 81–88.

[17] E. Danowska, *Życie codzienne w Gimnazjum Wołyńskim w Krzemieńcu* (*1805–1831*), „Annales Academiae Paedagogicae Cracoviensis" 2003, 17, s. 145–156; taż, *Nowatorski program nauczania i wychowania w Gimnazjum Wołyńskim, późniejszym Liceum w Krzemieńcu*, „Studia Paedagogica Ignatiana" 2016, vol. 19, s. 79–98.

[18] A. Szmyt, *Gimnazjum i Liceum wołyńskie w Krzemieńcu w systemie oświaty Wileńskiego Okręgu Naukowego w latach 1805–1833*, Wydawnictwo Uniwersytetu Warmińsko-Mazurskiego, Olsztyn 2009.

[19] Tenże, *Struktura szkolnictwa…*

ści zaniedbywali swoje obowiązki. W tej sytuacji niewiele pozostało z ducha reform Komisji Edukacji Narodowej. Te niedostatki zrodziły myśl utworzenia wzorcowej szkoły, nawiązującej do wcześniejszych idei. Tadeuszowi Czackiemu z pomocą w tym przedsięwzięciu przyszedł Hugo Kołłątaj. Wspólnie opracowali program, na podstawie którego miała funkcjonować krzemieniecka szkoła. Kołłątaj czerpał pomysły z doświadczenia zdobytego w czasach refom KEN, niewątpliwie dlatego w programie uwypukliła się jego myśl pedagogiczna. Czacki natomiast wykazał się zmysłem organizacyjnym, zbierał fundusze i odpowiadał za politykę kadrową. Wraz z funkcjonowaniem placówki w kolejnych latach nadawał jej decydujący kształt.

W planach obok szkoły średniej znalazł się również pomysł uruchomienia szkół: architektonicznej, mechaniki praktycznej, rolnictwa oraz weterynarii. Podczas otwarcia szkoły Tadeusz Czacki uzasadniał konieczność powołania w dalszej kolejności szkoły chirurgii, gdyż „cierpiąca ludzkość wymaga pociechy i wsparcia", oraz sztuki położniczej[20]. Projektowany kompleks szkół z czasem miał przekształcić się w kolejny uniwersytet. Obszar, jaki obejmował Uniwersytet w Wilnie, był rozległy i funkcjonowanie jedynego ośrodka akademickiego wydawało się niewystarczające. Krzemieniecka szkoła miała w przyszłości stać się „małym uniwersytetem"[21].

Gimnazjum Wołyńskie w Krzemieńcu rozpoczęło pracę 1 października 1805 r. Z jednej strony szkoła odzwierciedlała propozycje KEN, z drugiej była odpowiedzią na nowe oświeceniowe trendy w edukacji, w przeciwieństwie do innych organizowanych w Wileńskim Okręgu Naukowym. Andrzej Szmyt w monografii krzemienieckiego gimnazjum zauważa, że koncepcja funkcjonowania szkoły była wyrazem „ambicji twórców szkoły krzemienieckiej, którzy chcieli stworzyć placówkę edukacyjną przewyższającą swym poziomem szkoły funkcjonujące na terenie Wileńskiego Okręgu Naukowego"[22]. Program zakładał połączenie dwóch poziomów szkolnych, w którym funkcjonować miała czteroletnia szkoła średnia jako niższa oraz trzy dwuletnie kursy szkoły wyższej[23]. Nauka łącznie miała trwać 10 lat. W klasach niższych postawiono przede wszystkim na kształcenie umiejętności językowych, nauczano języka polskiego, rosyjskiego, francuskiego, niemieckiego i łaciny. Ponadto w programie znalazły się lekcje arytmetyki, nauki

[20] Cyt. za: A. Baumfeld, *Liceum Krzemienieckie. W setną rocznicę zgonu Tadeusza Czackiego*, Warszawa 1913, s. 5.

[21] H. Merczyng, *Kołłątaja i Czackiego „Projekt urządzenia Gimnazyum Wołyńskiego i wszystkich innych Szkół w gubernii Wołyńskiej": przyczynek do dziejów oświaty*, Warszawa 1881, s. 136; https://polona.pl/item/kollataja-i-czackiego-projekt-urzadzenia-gimnazyum-wolynskiego-i-wszystkich-innych-szkol,Njc4NjM4NTk/4/#info:metadata [dostęp: 22.10.2021]

[22] A. Szmyt, *Gimnazjum…*, s. 157.

[23] K. Bartnicka, *Programy nauczania w Wileńskim Okręgu Naukowym a Szkoła Krzemieniecka*, „Kwartalnik Historii Nauki i Techniki" 1989, 34/3, s. 506.

moralnej oraz geografii. Natomiast na trzech dwuletnich kursach do przedmiotów obowiązkowych należały: geometria, trygonometria, matematyka wyższa, literatura polska i łacińska, geografia, chemia, fizyka, historia naturalna, prawo naturalne i polityczne, ekonomia polityczna, prawo narodów[24].

W 1818 r. status Gimnazjum w Krzemieńcu została podniesiony do rangi Liceum Wołyńskiego. Jednak wydarzeniem decydującym o dalszych losach szkoły była śmierć w 1813 r. jej założyciela Tadeusza Czackiego. Od tego momentu placówka ta, na skutek wewnętrznych sporów oraz często odmiennej oceny jej roli, zaczęła podupadać. Problemem stało się również zaostrzenie polityki zaborcy rosyjskiego, który ograniczył środki na finansowanie oświaty. Jednocześnie od czasu wojen napoleońskich coraz śmielej prowadził politykę rusyfikacji. I, jak zauważa A. Szmyt, podniesienie rangi Gimnazjum do Liceum „było faktycznie jedyną kwestią, która doczekała się realizacji, jeśli chodzi o ambicje szkoły oraz podniesienie jej rangi i prestiżu w strukturze Wileńskiego Okręgu Naukowego”[25]. Mimo wielu trudności Krzemieniec wraz z funkcjonująca tam szkołą w dalszym ciągu stanowił ważny ośrodek kulturalny i towarzyski Wołynia. Kres działalności szkoły dał ukaz carski z 21 sierpnia 1831 r. o zamknięciu wszystkich zakładów naukowych na Wołyniu, Podolu i Ukrainie. Chociaż już wcześniej, według relacji absolwenta szkoły, Antoniego Andrzejowskiego, bo w marcu 1830 r., z powodu epidemii cholery władze szkoły zdecydowały się na jej zamknięcie[26]. Ostateczną decyzję dopełniła wojna polsko-rosyjska po powstaniu listopadowym. Szkołę zamknięto, część jej wyposażenia przekazano uniwersytetowi kijowskiemu, tam również przenieśli się nauczyciele.

Wychowanie fizyczne w Krzemieńcu

Obowiązujące na terenie imperium rosyjskiego przepisy szkolne nie przewidywały w rozkładzie zajęć wychowania fizycznego. Jednakże z samego założenia szkoła w Krzemieńcu miała wyposażyć ucznia we wszechstronną wiedzę, umiejętności, praktycznie przygotować do podejmowania zadań w dorosłym życiu[27]. W programie nauczania Gimnazjum Wołyńskiego, obok wcześniej wspomnianych przedmiotów, postarano się znaleźć czas dla zajęć, w trakcie których uczniowie mogliby rozwijać sprawność fizyczną, oraz edukowano w zakresie zdrowia. Zagadnienia te były szczególnie bliskie Tadeuszowi Czackiemu, o czym

[24] A. Szmyt, *Gimnazjum…*, s. 159.

[25] Tenże, *Krzemieniec jako centrum oświatowe w zachodniej części Ukrainy na przestrzeni dziejów* (*XVIII–XIX*), „Naukovij Visnik Volins'kogo Derzavnogo Universitetu im. Lesi Ukrainki” 2016, 4 (477), s. 93; https://evnuir.vnu.edu.ua/bitstream/123456789/9525/1/17.pdf [dostęp: 10.06.2022].

[26] E. Danowska, *Po upadku Liceum Krzemienieckiego* (*1805–1831*). *Polemika i wspomnienia*, „Annales Academiae Pedagogicae Cracoviensis. Studia Historica” 2008, F. 57, s. 76.

[27] *Reskrypt Jego Cesarskiej Mości Aleksandra I… Ustawy dla Gimnazjum Wołyńskiego*, Sankt-Petersburg, 29 lipca 1805; http://polona.pl/item/89918196/ [dostęp: 25.07.2022].

świadczy samodzielnie opracowany przez niego ogólny program zajęć ruchowych. Ćwiczenia podzielił na ogólne, dla wszystkich uczniów, oraz na zajęcia za dodatkową opłatą. Wśród obowiązkowych ćwiczeń znalazły się: biegi, fechtunek na kije oraz pływanie. Pierwszeństwo nadał biegom, które odbywały się według ściśle określonych zasad. Miały one nie tylko zadbać o fizyczny rozwój uczniów, ale też spełnić rolę wychowawczą. Organizowane były zawody w biegach, a zwycięzców nagradzano, co miało zachęcić młodzież do współzawodnictwa indywidualnego i grupowego. Czacki uważał, że aktywność fizyczna pozbawiona pierwiastka rywalizacji nie ma większego sensu[28].

Obecność szermierki w Gimnazjum Wołyńskim była kontynuacją zaleceń KEN, mówiących o konieczności tej formy aktywności w programie reformowanych szkół. Czacki przypisywał jej wartość wychowawczą i, mimo iż z założenia była sportem indywidualnym, zalecał jej grupowe uprawianie. Jak podaje Jan Konopnicki: „Walczącym w «kije» poleca [Czacki – P.T.] organizować w drużyny, które w jednym zestawieniu winny walczyć nie dłużej niż przez miesiąc, po czym powinna nastąpić reorganizacja tych drużyn i zamiana naczelników”[29]. Ze sportu indywidualnego uczynił sport drużynowy, gdzie każde zwycięstwo w indywidualnej walce punktowało na rzecz zespołu, który szermierz reprezentował. Taka formuła rywalizacji oraz rotacja szermierzy między drużynami miały zapobiec szowinizmowi, w konsekwencji wyrabiać współpracę i zdyscyplinowanie.

Trzecim rodzajem obowiązkowych zajęć z zakresu edukacji fizycznej było pływanie. Niezwykle ważna umiejętność, wziąwszy pod uwagę fakt, że w tamtym okresie spora liczba osób traciła życie z powodu jej braku. Czacki jasno określił warunki, w jakich miały odbywać się zajęcia. Chodziło przede wszystkim o zagwarantowanie bezpieczeństwa ich uczestnikom. Odpowiedzialność za zdrowie i życie uczniów spoczywała na prowadzących naukę[30]. Kursy pływania były początkowo prowadzone przez starszych uczniów, a później zatrudniono specjalistę Józefa Domkowicza[31].

Jako dodatkowe, regulowane odrębnymi umowami uczniów z nauczycielami, organizowano zajęcia tzw. „sztuk przyjemnych i pożytecznych”. Obok śpiewu, rysunku i malarstwa, były to również taniec, jazda konna oraz drugi rodzaj szermierki, tzw. indywidualna[32]. Zajęcia z fechtunku były odpłatne, a czesne za 75-minutowe lekcje wyniosło 3 zł, co stanowiło wówczas wartość pół rubla[33].

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[28] M. Rotkiewicz, *Elementy ćwiczeń lekkoatletycznych stosowanych w szkołach polskich w drugiej połowie XVIII i początkach XIX wieku*, [w:] K. Hądzelek, R. Wroczyński (red.), *Spuścizna Komisji Edukacji Narodowej…*, s. 131.

[29] J. Konopnicki, *Wychowanie fizyczne…*, s. 82.

[30] Tamże, s. 83.

[31] A. Szmyt, *Gimnazjum…*, s. 160.

[32] K. Bartnicka, *Programy nauczania…*, s. 507.

[33] J. Konopnicki, *Wychowanie fizyczne…*, s. 85.

To jednocześnie sprawiało, że nie wszyscy uczniowie mogli sobie pozwolić na kształcenie tej umiejętności.

Program szkolny był bardzo napięty. Uczniowie na pierwszym poziomie kształcenia w dni powszednie mieli zorganizowany czas od pobudki, czyli godziny 5:00, do godziny 21:00. W tej sytuacji na zajęcia dodatkowe pozostawał czas w dni wolne od lekcji. Natomiast w przypadku uczestników kursów szkoły wyższej, tzw. „talentów", zajęcia aktywności ruchowej odbywały się we wtorki oraz czwartki po południu[34]. Oprócz zajęć narzuconych z góry, młodzież w czasie wolnym grała w piłkę oraz palanta. Sam Czacki niejednokrotnie przyłączał się do rozgrywki, „często przychodził na galerię i z dziećmi grał w piłkę, nieraz tak się stary uszamotał, że usiadłszy na kamiennej ławce, długo odpoczywać musiał"[35]. Do własnej dyspozycji uczniowie nie mieli dużo czasu. W jednym z listów do Czackiego Hugo Kołataj zwracał uwagę na nadmierne obciążenia uczniów liczbą zajęć. Pisał, że w młodszych klasach gimnazjum młodzież nie powinna mieć więcej niż dwie godziny nauki przed południem oraz tyle samo po południu. Zbyt duże obciążenie zajęciami teoretycznymi, zdaniem autora listu, nie dawało szansy na znalezienie czasu dla równie ważnej w młodym wieku rekreacyjnej aktywności ruchowej[36].

Zajęcia z zakresu różnych aktywności fizycznych były prowadzone przez specjalnie przygotowaną do tego kadrę. Wśród nauczycieli znaleźli się nie tylko Polacy, ale też nauczyciele pochodzący z Francji czy Niemiec. Tańca uczyli Jan Buliński, Jan Grauman, Franciszek Szlancowski, Piotr Szlancowski. Jazdy konnej natomiast nauczali Jan Balponi, Karol Audibert, Stanisław Olszański, a szermierki Szczepan Roussel[37]. Status tych pedagogów był równy statusowi wykładowców innych przedmiotów, o czym wspominano w zawieranych z nimi umowach[38].

Cykliczną inicjatywą o charakterze rekreacyjnym była tzw. „majówka", odbywająca się zawsze w pierwszą niedzielę maja. Uczniowie razem z nauczycielami i domowymi dozorcami udawali się nad rzekę Ikwę. Zmaganiom sportowo-rekreacyjnym młodzieży przyglądali się również mieszkańcy Krzemieńca. Wszyscy wspólnie uczestniczyli w zabawach i spotkaniach towarzyskich[39]. Opis jednej z „majówek" znalazł się we wspomnieniach absolwenta szkoły, Franciszka Kowalskiego; jak pisał, w tym dniu cała szkoła wraz z dzwonkiem o godzinie ósmej wyruszała nad rzekę, aby dwie godziny później rozpocząć zabawę trwająca do wieczora.

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[34] A. Szmyt, *Gimnazjum…*, s. 270.

[35] F. Kowalski, *Wspomnienia: pamiętnik Franciszka Kowalskiego*, t. 1, Nakładem Leona Idzikowskiego, Kijów 1859, s. 104–105.

[36] *X. Hugona Kołłątaja korespondencya listowna z Tadeuszem Czackim*, Kraków 1844–1845, t. 1, s. 373.

[37] A. Szmyt, *Gimnazjum…*, s. 160.

[38] J. Konopnicki, *Wychowanie fizyczne…*, s. 87.

[39] A. Szmyt, *Gimnazjum…*, s. 276.

> Młodzi profesorowie i dozorcy grali z dziećmi w kaszę, palanta, ze starszymi podrzucali balon i biegali do mety […]. Damy, osobliwie młode panienki, patrzały z ciekawością na rzuty piłki w górę, na skakanie przez ramiona i głowy, na mocowanie się, na walki w drewniane pałasze, na kursa piesze do mety, a meta była daleka, bo wzdłuż całego mostu; na różne gimnastyczne sztuki, i zwycięzcom rozdawały nagrody, to jest bukiety kwiatów, cukry i ciasta[40].

Momentem kulminacyjnym każdego roku szkolnego były tzw. popisy. Początkowo odbywały się w czerwcu, a następnie w lipcu, z udziałem licznych gości, rodziców uczniów. Wśród umiejętności, jakie prezentowali uczniowie, były również te, które pokazywały ich sprawność w fechtunku, jeździe konnej oraz tańcu[41].

Edukacja zdrowotna i higiena szkolna

W Gimnazjum Wołyńskim dużą wagę przywiązywano do kwestii zdrowia uczniów i pracujących tam nauczycieli. Samemu wyborowi miejsca na ulokowanie szkoły towarzyszyły argumenty o charakterze zdrowotnym: „Położenie miasta górzyste, powietrze zdrowe…”[42]. W opinii Czackiego Krzemieniec był miastem zdrowym, w którym zachorowania i śmiertelność wśród uczniów były znikome. W dużym stopniu było to zasługą panującego tam klimatu. Miasto leżało u podnóża gór, a „wiatr wiejący między górami czyści powietrze”[43]. Z racji już wcześniej wspomnianego zagrożenia, jakim w tym okresie była ospa, każdy z uczniów wstępujących w progi szkoły był zobowiązany do przedstawienia zaświadczenia lekarskiego o przebytej chorobie. Jeśli wcześniej nie chorował, lekarz szkolny był zobowiązany do przeprowadzenia szczepienia w ciągu pierwszych czterech miesięcy od rozpoczęcia nauki[44].

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[40] F. Kowalski, *Wspomnienia…*, s. 162–163.

[41] W przypadku tańca J. Konopnicki sugeruje, że po śmierci T. Czackiego (1813 r.) zaniechano jego nauki, gdyż w znanych badaczowi źródłach nie było już wspomnienia o nauczycielu tej aktywności fizycznej. Jak wspomina, szkoła od początku istnienia miała niejednokrotnie problem z obsadzeniem stanowiska nauczyciela tańca. To zapewne spowodowało, że jeszcze za życia Czackiego na niektórych końcoworocznych popisach brakowało pokazów tanecznych (1809 r.). Wbrew opinii Konopnickiego, po śmierci Czackiego w programie popisów był również taniec (1814 r.). *Materye z nauk w gymnazyum wołyńskiem przez przeciąg roku szkolnego wyłożonych: na popisy publiczne uczniów tegoż gymnazyum w miesiącu lipcu 1809 porządkiem klas i kursów wystawione*, 1809, k. 32, http://polona.pl/item/92888035/ [dostęp: 26.07.2022]; *Materye z nauk w gymnazyum wołyńskiem przez przeciąg roku szkolnego wyłożonych: na popisy publiczne uczniów tegoż gymnazyum w miesiącu lipcu 1814 r.*, Krzemieniec 1814, s. 120, http://polona.pl/item/92888034/ [dostęp: 12.10.2021]; J. Konopnicki, *Wychowanie fizyczne…*, s. 86.

[42] M. Rolle, *Ateny wołyńskie*, Księgarnia Gubrynowicza i Schmidta, Lwów 1898, s. 25.

[43] P. Chmielowski, *Tadeusz Czacki. Jego życie i działalność wychowawcza*, Nakładem Kazimierza Grendyszyńskiego, Petersburg 1898, s. 82.

[44] *Reskrypt Jego cesarskiej Mości…*

W szkolnym programie nauczania znalazło się miejsce dla zajęć z zakresu edukacji zdrowotnej. W ramach dwuletnich kursów szkoły wyższej miały one formę kursu higieny, który należał do grupy zajęć dodatkowych[45]. Te z reguły odbywały się w niedzielę przed południem od kwietnia do lipca, a prowadził je absolwent krzemienieckiej szkoły, doktor Karol Kaczkowski. Mimo że kurs miał status zajęć nadprogramowych, cieszył się dużą popularnością i jak wspominał prowadzący:

> Wielka sala fizyczna lub pierwszej klasy, gdzie się one odbywały, ledwie pomieścić mogły cisnącą się publiczność. Uczniowie wszystkich kursów, damy, profesorowie, księża, urzędnicy, mieszczanie, Żydzi nawet, słowem, co tylko mieszkało w Krzemieńcu, zasiadało ławki i krzesła, zostawiając mi zaledwie wąską ścieżkę, po której mogłem do katedry się przecisnąć[46].

Kaczkowski przygotowywał wykłady skrupulatnie, zgodnie z najnowszym stanem wiedzy ówczesnej nauki, biorąc jednocześnie pod uwagę dość zróżnicowane audytorium. Wykłady z higieny prowadzone w Krzemieńcu zostały zebrane i wydane w 1833 r.[47] Inny szkolny lekarz, Wojciech Majewski, prowadził wykłady na temat szczepienia ospy.

Szkoła w Krzemieńcu była najprawdopodobniej jedną z pierwszych, w której zatrudniono szkolnego lekarza. Czacki rozumiał, że same zalecenia dotyczące utrzymania zdrowia nie wystarczą uczniom, należało je poprzeć praktyką. W tym celu opracował instrukcję, według której miał pracować szkolny lekarz. Zajmował się on leczeniem uczniów oraz nauczycieli, prowadził statystyki chorób, sprawował nadzór nad apteką, organizował policję medyczną[48]. Według sporządzonego dokumentu każdy uczeń, który wcześniej nie chorował, powinien być zaszczepiony przeciwko ospie. Lekarz zobowiązany był do comiesięcznej kontroli uczniowskich stancji, czy nie jest w nich zbyt zimno lub zbyt ciepło, czy posiłki są zdrowe, czy panuje porządek, a odzież jest odpowiednia do pory roku. Raporty z kontroli nakazano przedkładać dyrektorowi szkoły. W sytuacji choroby ucznia, lekarza zobowiązano do odwiedzania podopiecznego każdego dnia, a gdy przebieg choroby był ciężki, miał to czynić dwa razy dziennie. Biedni uczniowie mogli liczyć na wsparcie finansowe w zakupie lekarstw, a sam medyk mógł nie tylko zapisać lekarstwa, ale też lepsze wyżywienie. Młodzieńców przestrzegano przed zejściem z drogi cnotliwego życia i kiedy w Krzemieńcu pojawiłyby się choroby weneryczne, wówczas „okazać im, jaki jest skutek złych obyczajów i jak prędko winy jest kara”[49].

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[45] K. Bartnicka, *Programy nauczania…*, s. 506.

[46] K. Kaczkowski, *Wspomnienia z papierów pozostałych po śp. Karolu Kaczkowskim, ułożył T. Oksza Orzechowski*, Księgarnia Gubrynowicza i Schmidta, Lwów 1876, s. 193–194.

[47] Tenże, *Lekcje higieny czyli nauki zachowania zdrowia, wykładane w Liceum Wołyńskiem przez Karola Kaczkowskiego*, Wytłocznia Narodowa Ossolińskich, Lwów 1833.

[48] J. Konopnicki, *Wychowanie fizyczne…*, s. 88.

[49] J. Zagrodzki, *Instrukcya Czackiego dla lekarza liceum Krzemienieckiego*, „Muzeum” 1888, z. 2, s. 71; https://www.wbc.poznan.pl/dlibra/publication/118168/edition/129179/content [dostęp: 26.07.2022].

Obowiązki lekarza szkolnego jako pierwszy pełnił przez pewien czas – zdobywający wykształcenie w Wiedniu i Bolonii – Jan Kanty Bartsch, który po podróży naukowej po Francji, Anglii i Szkocji przybył do Krzemieńca[50]. W kolejnych latach funkcję sprawowali Siedelmeyer, Wojciech Majewski oraz Karol Kaczkowski.

Zgodnie z głoszoną przez Komisję Edukacji Narodowej zasadą, że „w czasie choroby ma być uczeń przedmiotem troski szkoły", opieka w tym zakresie spoczywała nie tylko na lekarzu szkolnym, ale na każdym nauczycielu Gimnazjum[51]. O zdrowie i higienę uczniów dbał regulamin pełen zakazów i nakazów wychowawczych. Jeden z przepisów zakazywał palenia fajki. Nakazywano młodzieży dbać o schludny wygląd, a ten rozumiano chociażby przez zakaz noszenia brody i bokobrodów[52]. Ponadto pracownicy szkoły byli zobowiązani do kontroli warunków mieszkaniowych, higieny osobistej oraz czystości odzieży uczniów. Za niezdrowe uważano pierzyny, a wręcz zalecano ich usuwanie. Do tego zwracano szczególną uwagę na wietrzenie oraz ogrzewane izb mieszkalnych[53].

Według zamierzeń Czackiego, w Krzemieńcu miał powstać fakultet chirurgów, „coś między felczerem a lekarzem"[54]. W przyszłości, po planowanym przekształceniu szkoły w uniwersytet, fakultet miał zmienić się w pełnoprawny wydział lekarski. Według Kołłątaja kandydaci na chirurgów najpierw mieli kończyć cztery klasy gimnazjum, następnie przez sześć kolejnych lat kształcenie miało odbywać się w zakresie matematyki, chemii, anatomii, fizjologii, chirurgii, położnictwa oraz weterynarii[55]. Dla kobiet miały zostać utworzone dwumiesięczne kursy położnictwa, a patent do wykonywania zawodu uzyskałyby po kolejnych sześciu miesiącach szpitalnej praktyki oraz pomyślnie zdanych egzaminach[56]. Niestety, realizacja obu inicjatyw zatrzymała się na etapie projektowania. Nie uzyskały one przychylności m.in. kadry wileńskiego uniwersytetu, zwłaszcza rektora Hieronima Stroyanowskiego, który mógł obawiać się uszczuplenia uniwersyteckiego budżetu na rzecz krzemienieckiej szkoły[57].

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[50] *Nekrologi. Jan Kanty Bartsch*, „Rocznik Towarzystwa Naukowego z Uniwersytetem Krakowskim Połączonego" 1827, t. 12, s. 85.

[51] K. Kubicki, *Lata szkolne, pierwsze utwory poetyckie, udział w organizacjach uczniowskich Gimnazjum Wołyńskiego Karola Sienkiewicza*, „Annales Universitatis Mariae Curie-Skłodowska Lublin – Polonia" 2008, vol. 63, s. 52.

[52] A. Szmyt, *Gimnazjum…*, s. 267.

[53] J. Konopnicki, *Wychowanie fizyczne…*, s. 87.

[54] M. Rolle, *Ateny wołyńskie*, s. 28.

[55] H. Merczyng, *Kołłątaja i Czackiego…*, s. 141.

[56] A. Szmyt, *Gimnazjum…*, s. 297.

[57] Zob. więcej: P Bryła, *Organizacya Gimnazyum Krzemienieckiego*, [w:] *Sprawozdania Dyrektora c.k. Gimnazyum św. Jacka w Krakowie za rok szkolny 1889*, nakładem Funduszu Naukowego, w drukarni Wł. L. Anczyca i Spółki, Kraków 1889, s. 8–9.

Podsumowanie

Gimnazjum i Liceum Wołyńskie w Krzemieńcu było wzorcową placówką, w której realizowano program zgodnie z najnowszymi wzorami oświatowymi. Nie tylko przywiązywano wagę do rozwoju intelektualnego i moralnego młodego pokolenia, ale również zwrócono uwagę na edukację w zakresie wychowania fizycznego i higienicznego. Były to ważne aspekty edukacji w obliczu zagrożenia, przed jakim stanęły miasta i wsie Rzeczypospolitej, którym groziło wyludnienie z racji wysokiej śmiertelności. Podjęcie kształcenia w tych obszarach miało zarówno wartość autoteliczną, jak i utylitarną. Troska o sprawność fizyczną i zdrowie młodego pokolenia powoli przestały być sprawą indywidualną, a stały się wartością społeczną.

W szkole krzemienieckiej edukacja w zakresie wychowania fizycznego oraz higieny nabrała nowego wyrazu. Nie ograniczono się do okólników, jakie zostały przedstawione w dokumentach Komisji Edukacji Narodowej, ale podjęto próbę ich doprecyzowania. Szkolny program nauczania nawiązywał nie tyko do propozycji KEN, ale można w nim było znaleźć również propozycje niemieckiego filantropizmu, który z założenia dążył do nauczania praktycznego oraz podniesienia roli wychowania fizycznego. Tadeusz Czacki pisał: „W ręku tedy władzy jest urządzić tak wychowanie, abyśmy użytecznych obywateli, a nie uczonych tylko i przyjemnych ludzi mieli”[58]. Znaczenie wychowania fizycznego zostało podniesione i zrównane z innymi przedmiotami. Nie miało ono stanowić jedynie wartości dodanej, ale być istotnym środkiem w kształtowaniu osobowości młodego człowieka. Zajęcia podzielono na obowiązkowe i dobrowolne. Wśród tych pierwszych znalazły się biegi, fechtunek na kije oraz pływanie, ponadprogramowymi były jazda konna, szermierka oraz taniec. W programie egzaminów końcowych, obok weryfikacji efektów kształcenia z innych przedmiotów, pojawiły się popisy gimnastyczne. Prosomatyczne postawy kształtowano również poprzez kursy higieny i szeroko propagowaną opiekę medyczną nad uczniami. To, co wyróżniało krzemieniecką szkołę na tle innych placówek oświatowych, to przede wszystkim pionierskie podejście w zakresie higieny. Zgodnie z postulatami lekarzy i pedagogów, opiekę nad zdrowiem uczniów roztoczono nie tylko w murach szkolnych, ale ten obowiązek rozszerzono także na dom.

Konkludując, należy stwierdzić, że dzięki reformatorskim rozwiązaniom autorstwa Czackiego Krzemieniec stał się wyjątkowym miejscem na mapie ogólnego systemu oświaty, które stanowiło wzór w zakresie organizacji edukacji w kolejnych dekadach. Obecnie nastąpił kryzys edukacji wychowania fizycznego w szkole, a kolejne badania informują o coraz większej liczbie uczniów nieucz-

[58] Z. Kukulski, *Działalność pedagogiczna Tadeusza Czackiego* (*W setna rocznicę zgonu*), Wydawca G. Gebethner, Warszawa 1914, s. 81.

estniczących w zajęciach WF[59]. Przykład Gimnazjum i Liceum Wołyńskiego, w którym wartość wychowania fizycznego i edukacja higieny zostały podniesione, może stanowić inspirację dla wszystkich, którzy podejmują się reform w tym obszarze kształcenia.

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Autor deklaruje brak potencjalnych konfliktów interesów w odniesieniu do badań, autorstwa i/lub publikacji artykułu *Wychowanie fizyczne i higiena szkolna w Gimnazjum Wołyńskim* (*1805–1833*).

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Changing views on the role of physical education teachers and sports coaches in Polish sports pedagogy literature up to 2015

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Zmieniające się poglądy na rolę nauczycieli wychowania fizycznego i trenerów sportowych w polskiej literaturze z zakresu pedagogiki sportu do 2015 roku

Streszczenie

Przez stulecia społeczeństwa na całym świecie poszukiwały ideału nauczyciela. W wyniku tych poszukiwań zmieniały się oczekiwania względem tego zawodu. W XIX wieku ludzie szukali sposobów na poprawę zdrowia i warunków życia. Powstał wówczas ruch higienistów, który w oświacie i higienie szkolnej dostrzegał szansę na poprawę sytuacji zdrowotnej, powstała nowa specjalność nauczycielska – nauczyciel zajęć ruchowych.

W tym samym czasie miał miejsce rozwój sportu m.in. dzięki organizacji nowożytnych igrzysk olimpijskich. Powyższe czynniki przyczyniły się do powstania nowej specjalności w nauczania ruchu – nauczyciela wychowania fizycznego. W drugiej połowie XX wieku z powodu zwiększenia funkcji tego zawodu, a przede wszystkim w wyniku rozwoju sportu, pojawił się zawód trenera sportowego. W perspektywie lat zmieniały się poglądy co do roli nauczycieli wychowania fizycz-

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nego i trenerów sportowych. Ważna jest nie tylko wiedza i umiejętności trenera, ale kim on jest jako specjalista, jako pedagog i jako człowiek. Zdaniem autora, trener w każdej sytuacji powinien mieć na uwadze dobro zawodnika. Ponadto wskazano, że sport amatorski i profesjonalny są ze sobą nierozerwalnie połączone.

Słowa kluczowe: nauczyciel wychowania fizycznego, trener sportowy, uczeń, Polska.

Abstract

For centuries societies all over the world have been searching for the ideal of a teacher. As a result of this search, expectations of the profession have changed. In the 19th century people were looking for ways to improve health and living conditions. At that time a movement of hygienists arose, which saw an opportunity to improve the situation in education and school hygiene, and a new teaching speciality was created, i.e. the physical activity teacher.

Meanwhile, there was an intense development of sports, among other things, due to the organisation of the modern Olympic Games. The above factors contributed to the emergence of a new specialisation in teaching physical education. In the second half of the 20th century, due to more focus on the role of physical education teachers, and above all, as a result of the development of sport, the profession of sports coach emerged. Opinions on the role of physical education teachers and sports coaches have been changing over the years. Not only are the knowledge and skills of the coach important, but also who they are as a specialist, as an educator and as a person. According to the author, the coach should have the player's best interests at heart in every situation. In addition, it was pointed out that amateur and professional sport are inextricably linked.

Keywords: physical education teacher, sports coach, student, Poland.

Introduction

There is no pedagogical system in the world that would neglect the role of the teacher in the educational process. It is universally acknowledged that good education and good upbringing can be the work of a good teacher-educator.[1] The process of upbringing has been analysed at many levels, and numerous pedagogical currents concerning upbringing have emerged in a historical perspective. However, it should be emphasised that one of the oldest forms of nurture was education through movement and play, which was already practised in ancient Egypt, China and Greece. Thus, it can be considered that physical education was one of the first forms of nurture. The development of civilisation and culture led to the need of passing on the achievements of mankind which was achieved through new forms of education, e.g. the art of war or apprenticeship.

In the 19th century, health and hygiene education was attempted in Europe due to the disastrous sanitary situation. Education was seen as an opportunity

[1] E. Kozak, *Nauczyciel jako dydaktyk, opiekun i wychowawca*, [in:] S. Popek, A. Winiarz (ed.), *Nauczyciel, zawód, powołanie, pasja*, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2009, pp. 158.

to reach numerous social groups.[2] Activities in the theory and practice of health and physical education were launched. Associations of doctors, natural scientists and educators popularised physical education and sport as factors for improving health.

In Poland, the process of education and the system of training specialist teachers proceeded differently than in other European countries, it was hampered by political conditions. The political situation of Poland in the 18th century was unstable, and in 1732, a secret agreement between the neighbouring powers of Prussia, Austria and Russia was signed concerning the succession to the throne of Poland. These powers carried out three partitions of Poland, dividing the Polish territory between them and began to suppress all signs of Polishness. As a result of these events, Poland was erased from European maps for 123 years.[3] The situation changed in 1918, after the end of the First World War, when Poland regained its independence. Parallel to the rebuilding of Polish statehood, discussions took place on the model of school physical education as an important part of the educational system.[4] Eugeniusz Piasecki, the founder of modern physical education, had significant merits in this field as well as in the development of health sciences. It should be noted that the launch of the research process to define the silhouette of a physical education teacher[5] was also significantly influenced by the organisation of the first modern Olympic Games in 1896. In Poland, survey in this area began in 1918, was interrupted by the outbreak of the Second World War, and was continued after its end by Zbigniew Krawczyk (1958) and Oskar Żawrocki (1959).[6] In the second half of the twentieth century, as a result of the increasing scope of influence of physical education teachers and the development of sport, the concept of the sports coach emerged.[7]

The expectations of this profession have changed over the years. At the end of the 20th century, the terms sports coach and sports teacher were differentiated. The main task of the sports teacher was to educate as many physically fit pupils as possible in order to give them a basis for further sports development, while sports development was handled by the sports coach.[8]

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[2] M. Demel, *Pedagogiczne aspekty warszawskiego ruchu higienicznego 1864–1914*, Zakład im. Ossolińskich, Wydawnictwo Polskiej Akademii Nauk, Wrocław – Warszawa – Kraków 1964, p. 1.

[3] J. Zdrada, *Historia Polski 1795–1914,* PWN Warszawa 2005, p. XXI, XXII.

[4] J. Chełmecki, *Reformy programu szkolnego wychowania fizycznego w Polsce w 1918 roku,* [in:] J. Nowocień (ed.), *Szkolne wychowanie fizyczne w dobie reform edukacyjnych*, AWF Warszawa 2014, p. 116.

[5] J. Nowocień, *Trener sportowy w perspektywie pedagogicznej*, [in:] H. Sozański, J. Sadowski (ed.), *Trener wczoraj, dziś i jutro*, AWF Warszawa, Wydział WFiS w Białej Podlaskiej 2013, p. 102.

[6] Ibid., p. 104.

[7] R. Żukowski, *Trener wobec zagrożeń współczesnego sportu*, [in:] H. Sozański, J. Sadowski (ed.), *Trener wczoraj, dziś i jutro*, AWF Warszawa, Wydział WFiS w Białej Podlaskiej 2013, p. 49.

[8] J. Nowocień, *Trener sportowy w perspektywie…*, p. 104.

State of research

Studies on various aspects of the teaching and coaching profession have been carried out extensively both in Poland and worldwide. They have resulted in interesting scientific and popular-scientific publications describing in detail issues related to this topic[9]. It should be noted, however, that despite many works dealing in detail with various aspects related to the issues of the profession of physical education teacher and sports trainer, there is no study to date, which would illustrate the changing views on the role of physical education teachers and sports coaches in the Polish literature on sports pedagogy.

Therefore, the author has attempted to analyse how expectations concerning the role and tasks for people working in the above mentioned specialisations have been shaped in the Polish historical perspective and in the present time.

Purpose, methods and research problems

The aim of the publication is to present the changing views on the role of physical education teachers and sports coaches in the Polish sports pedagogy literature.

Research questions:

1. When did the first reflections on the role and tasks of a teacher appear?
2. How did the expectations of specialists in physical culture sciences and social expectations towards the profession of a physical education teacher change in Poland in the 19th and 20th centuries?
3. What competences should a physical education teacher and a sports coach have in the 21st century according to Polish specialists in sports pedagogy?

The article is a review in accordance with the principles of historical research methodology. The author has analysed historical sources and available literature, statements and views of prominent educators and coaches, and conducted a search of library resources. She thoroughly evaluated them in terms of their usefulness for further survey, applied the method of synthesis, induction, deduction and comparative method.

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[9] J. Lipiec, *Traktat o trenerze. Wartości, funkcje, normy*[in:] H. Sozański, J. Sadowski (ed.), *Trener wczoraj, dziś i jutro*, AWF Warszawa, Wydział WFiS w Białej Podlaskiej 2013; J. Nowocień, *Trener sportowy w perspektywie…;* R. Żukowski, *Trener wobec zagrożeń współczesnego sportu*, [in:] H. Sozański, J. Sadowski (ed.), *Trener wczoraj, dziś i jutro*, AWF Warszawa, Wydział WFiS w Białej Podlaskiej 2013; H. Grabowski, *Co koniecznie trzeba wiedzieć o wychowaniu fizycznym*. Wydawnictwo *Impuls* Kraków 2000; T. Ulatowski, *Teoria i metodyka sportu*, Sport i Turystyka, Warszawa, 1971.

Results and discussion

Origins of the physical education teaching profession

The teaching profession is one of the oldest in the world and for many years has been the subject of interest of psychologists, pedagogues and philosophers from various countries.[10] In primitive times, the younger generations learned through imitation and observation of everyday life, and functioning in social groups and families was a primary objective.[11] In ancient times, the ideal was a man with a comprehensively developed personality. The wisdom and knowledge of the teacher were considered the foundation of the value of man.[12] In ancient Egypt, games, plays and sports were an important part of social life and were practised by both men and women. Besides, children's games were regarded as a conscious and planned means of education. The basic educational institutions and pedagogical concepts that developed during the Ancient Greek period set the course, so to speak, for the development of European pedagogy and education. In Athens, there was a system of upbringing that prepared a young man for participation in public life, care was taken of his all-round development, expressed in the concept of kalokagathia – beautiful and good.[13] This was in contrast to the military upbringing in Sparta, which shaped the qualities and fitness of a good soldier[14] and the desire to maintain power over the autochthones.

In the medieval period, the teacher had ex officio an unlimited power over his pupil and he enjoyed absolute authority.[15] In this era, education also took place within corporations, or so-called guilds.[16] In addition, a special system of education for the noble youth was established, i.e. knight education. A candidate for a knight was supposed to attain strength and fitness for battle, which was, as it were, his goal and destiny.[17]

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[10] E. Kozak, *Nauczyciel jako dydaktyk, opiekun i wychowawca*…, p. 158.

[11] D. Apanel, *Słowo wstępne-krótka refleksja historyczna*, [in:] D. Panel (ed.), *Być nauczycielem-opiekunem-wychowawcą. Perspektywa historyczna*, Wydawnictwo Adam Marszałek, Toruń 2012, p. 6.

[12] D. Apanel., *Zawód nauczyciela w perspektywie temporalnej*, [in:] D. Apanel, E. Morawska (ed.), *Pozostawić ślad w biografiach innych, Nauczyciel – mentor, mistrz, lider zmian,* In Memoriam Profesor Ewy Bilińskiej-Suchanek, Słupsk 2012, p. 20.

[13] R. Wroczyński, *Powszechne dzieje wychowania fizycznego i sportu*, BK Wydawnictwo i Księgarnie Wrocław 2002, pp. 31–32, 41, 61.

[14] Ibid., p. 43.

[15] D. Apanel, *Słowo wstępne-krótka refleksja historyczna*…, p. 7.

[16] H. Samsonowicz, *Cechy rzemieślnicze w średniowiecznej Polsce: mity i rzeczywistość*, "Przegląd Historyczny" 75/3, 1984, pp. 551–567, https://docplayer.pl/48587191-Samsonowicz-henryk-cechy-rzemieslnicze-w-sredniowiecznej-polsce-mity-i-rzeczywistosc.html [access 29.08.2022, 15.00]

[17] R. Wroczyński, *Powszechne dzieje …,*p. 43.

During the Renaissance in Poland, reflections on the teaching profession were undertaken, among others, by Leonard Coxe, who developed a pedagogical treatise according to which a teacher should have a thorough education.[18] Besides, the first substantial reflections on physical education in Poland were appearing at that time. This was mainly due to Sebastian Petrycy of Pilzno (1554–1626) who made extensive use of the thought of ancient philosophers, especially Aristotle, Plato and the sophists.[19] He pointed out that physical exercise treated as fun and rest is necessary for everyone, because it makes an individual reborn and refreshed.[20]

Both the achievements of West European and Polish pedagogical thinkers were used by the Commission of National Education (hereinafter: the KEN) in its work on shaping the teaching profession. On the basis of several hundred papers prepared by members and associates of the KEN, *Ustawy dla stanu akademickiego na kraje Rzeczypospolitej przepisane* were drafted and published in 1873. It was the first school code in Europe.[21] Drawing from the KEN's experiences in the field of elementary education, Grzegorz Piramowicz published the work *Powinności nauczyciela*[22] in 1787.

Physical education teacher in the 19th and early 20th centuries

In the 19th century physical education was particularly represented in Polish pedagogical thought by Bronisław Ferdynand Trentowski (1808–1869), who believed that through education it would be possible to rebuild the Polish nation that would free itself from the partitions.[23] Jędrzej Śniadecki in his pedagogical treatise *O fizycznym wychowaniu dzieci,* "referring to the resolutions of the KEN […] directed the attention of physical education teachers to respecting the child's right to individual development in accordance with its own nature […]. He proclaimed that physical education should take particular care of health and

[18] T. Bieńkowski, *Naukowe środowisko krakowskie w początkach XVI wieku* (*1500–1590*)*,* "Studia i Materiały z Dziejów Nauki Polskiej", seria A 13, p. 40.

[19] Were mainly active in Athens in the 5th–4th centuries BC; the object of interest of the sophists was the human being and they are therefore considered the first humanists in the history of ancient philosophy; https://encyklopedia.pwn.pl/haslo/sofisci;3977259.html [access: 29.08. 2022, 15.30].

[20] J. Nowocień, *Wychowanie fizyczne w polskiej myśli pedagogicznej w perspektywie 90-lecia*, [in:] J. Nowocień, K. Płoszaj, A. Samełko (ed.), *Myśl pedagogiczna i psychologiczna o wychowaniu fizycznym i sporcie w warszawskiej Akademii Wychowania Fizycznego*, AWF Warszawa 2020, p. 77, 79, 81, 83.

[21] R. Wroczyński, *Powszechne dzieje…,* p. 86.

[22] G. Piramowicz, *Powinności nauczyciela*, [in:] S. Wołoszyn (ed.), *Źródła do dziejów wychowania i myśli pedagogicznej w zarysie*, Warszawa 1965, p. 685.

[23] J. Nowocień, *Wychowanie fizyczne w polskiej myśli…,* p. 77, 79, 81, 83.

influence one's lifestyle."[24] Giving physical education a humanistic dimension, he referred to the professional code defined by Grzegorz Piramowicz in *Powinności nauczyciela*, in which he included a chapter on physical education and maintaining health.[25]

Representatives and activists of the hygiene movement, associations of doctors, natural scientists and pedagogues carried out events popularising physical education and sport as factors influencing the improvement of health.[26] Dynamic activities in this field were carried out by, among others: Stanisław Markiewicz, Janusz Korczak, Henryk Jordan and Stanisław Kopczyński.

Henryk Jordan emphasised the role of physical education teachers for the health and development of pupils. He encouraged candidates for educators to complete a university course in this subject in order to obtain relevant qualifications. On his initiative, such a course was launched at the Jagiellonian University in 1895.[27] E. Piasecki, also had a significant contribution to developing the formation of physical education teaching staff in Poland. He pointed out that "it is necessary to know the human organism, its structure and functions, its impact on the means we use. You also need to know how to dose these means. […] You also need to know how to move around in the field of psychology and pedagogy."[28] Thanks to E. Piasecki's efforts, the Study of Physical Education was established as an independent unit functioning at the Faculty of Medicine of the Poznań University and E. Piasecki was appointed its director.[29]

In January 1927, the Scientific Council for Physical Education was established, and at its meetings the guidelines for the development of general physical education and sport were formulated. A ban was introduced on young people belonging to 'adult' clubs. Sport could then only be practised in schools and inter-school sports clubs under the supervision of physical education teachers.[30] Young sportsmen and sportswomen did not agree with the authorities' recom-

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[24] K. Zuchora, *Polskie drogi wychowania fizycznego i sportu od Komisji Edukacji Narodowej do 1939 roku*, [in:] Nowocień J., Płoszaj K., Samełko A. (ed.), *Myśl pedagogiczna i psychologiczna o wychowaniu fizycznym i sporcie w warszawskiej Akademii Wychowania Fizycznego*, AWF Warszawa 2020, p. 32.

[25] Ibidem.

[26] M. Rotkiewicz, *Wystawy sportowe w Europie na przełomie XIX i XX wieku*, „Wychowanie Fizyczne i Sport" 1974, nr 4, p. 170.

[27] D. Apanel, *Wychowanie zdrowotne dzieci i młodzieży na ziemiach polskich przełomu XIX i XX wieku – teoria i praktyka pedagogiczna,* [in:] D. Apanel, M. Pawłowska, R. Kaczmarek (ed.), *Opieka, profilaktyka-pomoc wymiar rodzinny i instytucjonalny na przykładzie wybranych placówek województwa zachodniopomorskiego i pomorskiego*, PWSZ Koszalin 2019, p. 20.

[28] E. Piasecki, *Wychowanie fizyczne*, [in:] B. Krakowski (ed.), *Zagadnienia opieki nad macierzyństwem, dziećmi i młodzieżą w Polsce*, nr 9, Polski Komitet Opieki nad Dziećmi, Warszawa 1930, p. 55.

[29] Z. Grot, *Katedra i Studium Wychowania Fizycznego na Uniwersytecie Poznańskim*, [in:] Z. Grot (ed.), *Dzieje poznańskiej Wyższej Szkoły Wychowania Fizycznego 1919–1969*, Poznań 1970, p. 43.

[30] J. Chełmecki, *Reformy programu szkolnego…*, pp. 116–120.

mendations, which was why they took part in club competitions under pseudonyms. It was important for the improvement of the hygiene and health situation to include physical education in school curriculum as one of the subjects of general education. As a result, the demand for teachers, specialists in this area, increased. The introduction of this subject to schools was preceded by the training of teaching staff in this field. The first teachers of physical education were mostly retired non-commissioned officers, without substantive pedagogical background, and members of the Gymnastic Association *Sokół*. In this situation, the first forms of physical education teacher training were proposed. They were carried out as short courses, lasting several months, then one year and two years. In Poland, the task of preparing gymnastics teachers for folk schools was undertaken by tutors' seminaries in Lvov and Cracow.[31] The Gymnastic Association *Sokół* also made a significant contribution to the preparation of teaching staff for secondary schools.[32] In order to define the profile of a physical education teacher in the interwar period, research was undertaken, whose findings established that sports abilities and passion as well as physical fitness were preferred in this profession. In the early thirties, S. Krak and Walerian Sikorski emphasized the educational role of tutors, their all-round physical fitness, good health and hygienic lifestyle. W. Sikorski, propagator of physical education among the youth, organiser, commander and instructor of the Central Military School of Gymnastics and Sports in Poznań, was the author of the publication entitled *Gymnastics*, which was a methodological textbook for seminaries and teachers' courses.[33] The issue of physical education and teachers' competence was also considered by Jan Władysław Dawid, a pioneer of educational psychology and experimental pedagogy in Poland. He can be considered a precursor of the spiritualization and socialisation of physical education.[34] The main objective of the studies and courses for candidates for tutors was to raise the level of their preparation for this profession, both substantive and pedagogical.[35] The 19th and 20th centuries were the times of numerous changes in the field of upbringing and education. Actions aimed at health improvement were closely linked to education, primarily physical education, and at the same time to the preparation of specialist teachers in this area.

Physical education teacher and sports trainer of the 20th and 21st centuries

Consequences of the Second World War were felt in every area of life in Poland, great losses were recorded among the population, including teachers,

[31] R. Wroczyński, *Powszechne dzieje…*, p. 170.
[32] Ibid., p. 212.
[33] J. Nowocień, *Trener sportowy w perspektywie…*, p. 102.
[34] D. Apanel, *Wychowanie zdrowotne dzieci i młodzieży…*, p. 22.
[35] R. Wroczyński, *Powszechne dzieje*…, p. 171.

who found themselves among the most repressed professional groups by the invaders.[36] After 1945, the elimination of educational neglect was identified as a priority task: eradication of illiteracy, reconstruction of school facilities and continuation of education interrupted by the war.[37] Therefore, in order to gradually meet staff shortages, higher education was reactivated, including physical education.[38]

In the years 1945–1950, ad hoc attempts were made in the Polish educational system to prepare tutors during holiday courses (1st, 2nd, 3rd degree). In selected pedagogical secondary schools physical education was added as a major, thanks to which over 3,000 physical education teachers were prepared for the profession. From 1954, two-year teacher training courses were introduced, with a specialisation in physical education.[39] A research process to determine the psychological profile of a physical education teacher was conducted as early as 1918–1939, e.g. by S. Krak and W. Sikorski and continued after the end of the Second World War by Z. Krawczyk (1958) and O. Żawrocki (1959).[40] As a result of this research, a model was constructed according to which a physical education teacher should be characterised by: general pedagogical and biological knowledge, a wide range of interests, physical fitness, passion for the profession, striving for self-education. Based on these characteristics, O. Żawrocki distinguished four attributes of teachers: coach, pedagogue, organizer, improver. At the same time, he pointed out that none of these types occurs independently, but they complement each other.[41]

Meanwhile, Sergey Hessen (1887–1950) initiated a new trend in pedagogical thinking about physical education, which can be described as cultural.[42] In Poland, Stefan Wołoszyn was one of the most distinguished scientists in many fields. He influenced the shape of today's pedagogy, the pedagogy of physical culture and sport. He repeatedly emphasised the need to educate future teachers, coaches and other people involved in educating children and young people in the spirit of humanism.[43] He believed that the role of the educator goes be-

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[36] J. Bugajska-Więcławska, *Kondycja zawodu nauczyciela dziesięciolecia 1945–1955 na podstawie województwa lubelskiego,* [in:] D. Apanel (ed.), *Być nauczycielem – opiekunem – wychowawcą. Perspektywa historyczna*, Wydawnictwo Adam Marszałek, Toruń 2012, p. 101.

[37] J. Chełmecki J., *Kształtowanie się i umacnianie związków wychowania fizycznego z higieną szkolną i wychowaniem zdrowotnym w Polsce w* (*1918–2013*), [in:] J. Nowocień (ed.)*, Szkolne wychowanie fizyczne w dobie reform edukacyjnych,* AWF Warszawa 2014, p. 122.

[38] W. Reczek, *XXV-lecie kultury fizycznej w Polsce Ludowej*, „Kultura Fizyczna" 1969, nr 7, p. 298.

[39] J. Chełmecki, *Kształtowanie się i umacnianie związków…*, p. 122.

[40] Ibid., p. 102.

[41] J. Nowocień, *Trener sportowy w perspektywie…*, p. 103.

[42] J. Nowocień, *Wychowanie fizyczne w polskiej myśli…*, pp. 89–90.

[43] K. Płoszaj, *Stefan Wołoszyn – inicjator dialogu nauk o wychowaniu i nauk o kulturze fizycznej*, [in:] J. Nowocień, K. Płoszaj, A. Samełko (ed.), *Myśl pedagogiczna i psychologiczna o wychowa-*

yond the transmission of knowledge and skills, and involves inspiring self-education processes.[44] He advocated treating sports training as a pedagogical process, emphasizing the importance of multilateral development of players and the entities involved in sport. He indicated that a sports coach is not only a teacher of the game, but also a pedagogue.[45] Another Polish scientist who also carried out research in the discussed area was Zofia Żukowska. She focused, among others, on the quality of didactic and educational work of a teacher, their professional preparation, social and educational attitude, culture and personality as factors determining the course of the didactic and educational process at school.[46]

As a result of the dynamic development of sport in the 1960s and 1970s, the profession of a sports coach was distinguished. At that time, professional specialisations appeared within the profession of a physical educator.[47] The system of training pedagogues for competitive sport was based on several levels of training and qualification improvement. The first documents dealing with the ordering of personnel matters in physical culture after World War II were published in 1946.[48] On 25 February 1948, a parliamentary Act called *O powszechnym obowiązku przysposobienia zawodowego młodzieży oraz organizacji spraw kultury fizycznej i sportu*[49] was introduced, and it also regulated the training of personnel in this area. Between 1950 and 1953, following the establishment of the Central Committee for Physical Culture, regulations were issued for 1st and 2nd class coach titles. They were awarded on the basis of verification of qualifications to outstanding former athletes and persons of merit for sports training. In 1984, the Physical Culture Act was introduced. It was the first state document referring, among others, to the qualifications of coaches and criteria for their promotion. The text of the Law on Physical Culture, amended in 1996, in the chapter *Physical Culture Staff,* introduced regulations for the training and im-

niu fizycznym i sporcie w warszawskiej Akademii Wychowania Fizycznego, AWF Warszawa 2020, pp. 125–126.

44 P. Ławniczak, P. Kijo, *Uwagi do zdatności wychowawczej nauczyciela wychowania fizycznego*, [in:] J.E. Kowalska (ed.), *Zapobieganie wykluczeniu z systemu edukacji dzieci i młodzieży nieprzystosowanej społecznie. Perspektywa pedagogiczna*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2014, p. 243.

45 K. Płoszaj, *Stefan Wołoszyn…*, pp. 125–126.

46 J. Drebich, *Profesor Zofia Żukowska nauczyciel akademicki i naukowiec w dziekańskiej todze*, [in:] J. Nowocień, K. Płoszaj, A. Samełko (ed.), *Myśl pedagogiczna i psychologiczna o wychowaniu fizycznym i sporcie w warszawskiej Akademii Wychowania Fizycznego*, AWF Warszawa 2020, p. 172.

47 J. Nowocień, *Trener sportowy w perspektywie…*, pp. 102–104.

48 Dekret z dnia 16 stycznia 1946 r. o utworzeniu urzędów i rad wychowania fizycznego i przysposobienia wojskowego (Dz. U. Nr 3 poz. 25).

49 Chełmecki J., *Reformy programu …*, p .124.

provement of professional competences of coaches. The Act of 25 June 2010 on Sport produced further regulations on the subject in question.[50] In 2013, the Ministry of Sport and Tourism introduced the deregulation of the profession of an instructor and a coach, as a result of which the profession of a coach ceased to be one that requires the acquisition of qualifications[51].

The profession of a sports coach was formally established in the Act on Physical Culture and other official documents, but the scope of activities, rights and duties of a trainer was not clearly defined.[52] Over the years, the expectations and tasks placed on those in the profession have changed. Specialists in the field of physical culture sciences have undertaken a number of studies to determine the tasks, characteristics of a sport teacher and a sports coach. Lesław Lachowicz believed that "out of the multitude of roles and tasks associated with the work of a coach, the correct attitude takes the form of advisor-friend."[53] Tadeusz Ulatowski, on the other hand, emphasised that the education of coaches and instructors should be enriched with the content necessary to optimise sporting achievements, by extending this content with knowledge and skills in sports psychology. Henryk Grabowski believed that, in modern understanding, the aim of individual fields of education is not to shape separate sides of one's personality, but to help develop the whole human being, taking into account their cognitive, motor and emotional spheres. Consequently, psychological studies are responsible for preparing young generations to deal with mental issues, aesthetic education to participate in aesthetic culture, and physical education in physical culture.[54] Ryszard Żukowski pointed out that in the system of shaping an athlete, the central figure at the highest level was, is and will be the coach. The role, place, social and professional position of the coach, the scope of their duties and competences are constantly changing. This leads to the improvement of professional knowledge and skills, the pursuit of high results with their charges and the participation and active presence in the team accompanying the training work of the athlete. In this context, the coach's work appears difficult, complex multilaterally linked and conditioned, subject to ongoing evaluation not only profes-

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[50] A Szumilewicz, H. Makaruk, K. Perkowski, M. Krawczyński, J. Żyśko, E. Niedzielska, A. Plińska, E. Piotrowska-Całka, M. Kania, J. Ratajczak, M. Siniarski-Czaplicki, J. Rosińska, R. Kowalski, *Sektorowa Rama Kwalifikacji dla Sportu***,** Instytut Badań Edukacyjnych, Warszawa 2015, pp. 9–11, https://kwalifikacje.edu.pl/wp-content/uploads/publikacje/PDF/srk/wydawnictwo-IBE_OK9.pdf [access: 29.08.2022, 16.00].

[51] Deregulacja zawodu instruktora i trenera 2013, Ministerstwo Sportu i Turystyki, https://www.gov.pl/web/sport/deregulacja-zawodu-instruktora-i-trenera [access: 29.08.2022, 16.30].

[52] R. Żukowski, *Trener wobec zagrożeń…*, pp. 49–50.

[53] L. Lachowicz, *Rozwój zawodu trenera i osobowości trenera*, „Wychowanie Fizyczne i Sport", 2, pp. 113–114.

[54] H. Grabowski, *Co koniecznie trzeba wiedzieć o wychowaniu fizycznym*, Wydawnictwo *Impuls* Kraków 2000, p. 36.

sionally but also socially.[55] Józef Lipiec believed that the work of a coach requires a special teaching talent and appropriate intellectual, moral and character qualifications. The innate predispositions of a coach, as well as acquired characteristics, are important.[56] According to Jerzy Nowocień, a tutor, a coach of modern times played the role of an advisor in the learning process. They should take into account the generational changes in the area of the system of values, authorities, listen to their charges' expectations and understand the needs of pupils, students and players. He pointed out that a teacher was also a coach, who needed axiological and communicative competences to be able to build beneficial relations with players or a team. This profession required not only knowledge, skills and competences, but also specific predispositions. It often took the form of a mission and passion.[57] Only a teacher or a coach who was able to assess their own competences, verify mistakes and take actions aimed at self-development and self-improvement would be able to lead an effective educational process directing a pupil towards independence in decision-making, actions and development[58]. Henryk Sozański pointed out that a proper coach-athlete relationship was based on trust, understanding, which shall significantly contribute to achieving a common goal. He recalled that during his coaching career he worked with Krzysztof Marczak, a long jumper who lacked internal motivation despite his talent and the support of his coach. During one of the conversations the athlete confessed with surprising frankness that "his spirit was great, but his will was small." Such a confession was only possible as a result of mutual trust and a unique coach-player relationship.[59]

Similar views in this respect were presented by Tadeusz Huciński, who emphasized that the coach-player relationship should be based on partnership, on the subjective treatment of players and the correct communication necessary for the implementation of these assumptions.[60] According to Artur Poczwardowski, "the main principle in the coach-athlete relationship was the principle of feedback: the more frequent the action for the athlete, the more frequent and intense the mutual exchange of positive content and greater attentiveness (care, trust, respect)."[61] Witold Rutkowski believed that a coach "should first and foremost refer to the personal motivations and expectations

[55] R. Żukowski, *Sport - Fair Play - oczekiwania i rzeczywistość*, [in:] Z. Żukowska, R. Żukowski (ed.), *Fair Play w sporcie i Olimpizmie. Szansa czy utopia, Estrella*, Warszawa 2010, p. 105.

[56] J. Lipiec, *Traktat o trenerze. Wartości, funkcje, normy…,* pp. 86–87.

[57] J. Nowocień, *Trener sportowy w perspektywie…*, p. 114.

[58] Ibid., pp. 105, 110.

[59] Oral account of Henryk Sozański, resident of Warsaw, of 14.06.2021.

[60] Oral account of Tadeusz Huciński, resident of Gdańsk, of 26.01.2021.

[61] A. Poczwardowski, *Relacje pomiędzy trenerem i zawodnikiem. Jak je doskonalić?* „Sport Wyczynowy" 2000, 3–4, pp. 35–43.

of his charges."[62] Adolf Molak thought that the ability to lead the team in the profession of a coach was an important factor. He indicated the importance of the coach-player relationship in the training process. In his opinion, the coach should play the role of a guide who can integrate the team.[63]

The considerations were analysed until 2015, and on their basis it has been concluded that the profession of a sports coach is connected with the necessity to possess appropriate social and pedagogical competences. A coach is a teacher, an educator, an authority, a companion in development, an ally on the road to success. The task of a coach is to motivate, enhance commitment, effort, regularity, perseverance and responsibility.[64] The basis for the professional preparation of a coach, in other words their pedagogical competences, is a system of key competencies, i.e. praxeological, communicative, cooperative, creative, IT and moral ones. It is important to *cut off* from the view that sports results are the only criterion for assessing the effectiveness of the sports coach's work.[65] For a coach – educator, what should count above all is the good of the athlete, and then the sporting success. If a coach prepares an athlete to achieve success to the best of their ability, and at the same time prepares their charges for life in society and for participation in culture, then sporting success can be an excellent means of personality development and the evolution of sporting culture[66].

Conclusion

This article presents the changing views on the role of physical education teachers and sports coaches in the Polish sports pedagogy literature. Starting from the presentation of the roles, tasks and functions of the teacher in different historical periods, through the emergence of the sports educator, to the emergence of the profession of a coach and expectations towards it. Expectations towards this profession have changed over the years, and have been conditioned by many factors, including social, cultural and political ones, but above

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[62] W. Rutkowski, *Znaczenie autorytetu trenera w jego oddziaływaniu wychowawczym*, „Sport Wyczynowy" 2003, 1–2, pp. 51–55.

[63] A. Molak, *Kierowanie zespołem sportowym – dominacja czy integracj*a? „Sport Wyczynowy" 1968, 4, PKOl Warszawa; J. Nowocień, *Trener sportowy w perspektywie pedagogicznej*…, p. 104.

[64] M. Buchali, *Znaczenie kompetencji pedagogicznych i społecznych w zawodzie nauczyciela*, „Rynek pracy" 2017, nr 3 (162), Ministerstwo Rodziny, Pracy i Polityki Społecznej, p. 37.

[65] R. Żukowski, *Standardy kompetencji pedagogicznych nauczycieli sportu trenerów*, [in:] H. Sozański, J. Sadowski (ed.), *Trener wczoraj, dziś i jutro*, AWF Warszawa, Wydział WFiS w Białej Podlaskiej 2013, pp. 71–76.

[66] Ibid., p. 105.

all by the dynamic development of sport. At present, the distinction between amateur and professional sport is slowly disappearing, which may change expectations regarding the competences and skills of a sports coach in the future.

Reflections on the teacher's role and tasks have appeared since ancient times, and in the 19th century, as a result of activities aimed at improving the health situation of the inhabitants of Europe, including Poland, a new specialisation of the physical education teacher emerged. At that time, research was undertaken into the desirable features of this profession, the conditions of the education and upbringing process. In Poland, activities in this area were led by people working for the development of science. Jędrzej Śniadecki drew the attention of physical education teachers to respecting the child's right to individual development in accordance with its own nature. H. Jordan pointed to the role of physical education teachers in effort to promote pupils' health and development. E. Piasecki emphasised the need to know the human body, its structure and functions. J. W. Dawid, a pioneer of educational psychology, indicated the need to socialise physical education. The focus at the time was primarily on the health and proper development of the child, physically, mentally and socially.

In the 20th and 21st centuries, the above-mentioned research continued in many dimensions. S. Hessen initiated a new direction in pedagogical thinking about physical education, S. Woloszyn influenced the shape of today's pedagogy, physical culture pedagogy and sports pedagogy. Z. Żukowska conducted a survey into the quality of the teacher's didactic and educational work. L. Lachowicz believed that the correct approach of a coach takes the form of an advisor-friend. Work on defining the desirable qualities of a sports coach was also conducted by specialists in sports theory (H. Sozanski 2000; 2013) and sports sociologists (e.g. Krzysztof Jankowski 2017, K. Jankowski and Michal Lenartowicz 2007). They analysed the methodological, sociological and pedagogical aspects of this profession. According to J. Nowocień, the profession of a sports coach derives from the ever-expanding functions of a physical education teacher. Consequently, coaches of the 21st century face a great challenge, as the function of sport in the life of a young person has altered. Besides, in the world of constant change, innovation and fast pace, challenges facing education are also becoming multidimensional. There is a growing need to take a broad view of the changes taking place and it is essential to understand their interdependencies and influences. The ability to combine multiple competences and skills in both the teaching and sports coaching professions is becoming important.

Today's sports coaches are not only expected to teach sport technically and tactically, but also to coach and develop individuals physically, emotionally and socially. Traits that are conducive to success in the sports coaching profession have been identified and they include personality features, values and beliefs

and key skills, primarily communication skills. A well-established coaching philosophy, the ability to listen, observe, ask questions, the ability to give feedback, reward and punish are the elements that determine coaching success. It can be concluded that in the 21st century, the expectations of the sports coaching profession have been expanded compared to the previous century. In addition to substantive knowledge, the significant importance of soft skills in the profession has been emphasised.

In order to improve the system of education and professional training of sports personnel in Poland (in view of the deregulation of professions in this area), the Polish Sectoral Qualifications Framework for Sport was developed in 2013. This created the possibility of comparing qualifications of sports coaches obtained in Poland with those acquired in other countries. This offers an opportunity to introduce the latest trends into the training programmes of coaching staff and to obtain world standards of sports training.

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Część II

Teoria i metodyka wychowania fizycznego i sportu

UNIWERSYTET HUMANISTYCZNO-PRZYRODNICZY IM. JANA DŁUGOSZA W CZĘSTOCHOWIE
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The relationship between sports teacher – coach role conflict and self-efficacy with the mediating role of sports goal orientation

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Zależność pomiędzy konfliktem między rolami nauczyciela wychowania fizycznego i trenera a poczuciem własnej skuteczności z pośredniczącą rolą orientacji na cele sportowe

Streszczenie

Nauczanie i bycie trenerem to dwie różne role, a przedstawiciele tych dwóch grup zawodowych różnią się zakresem obowiązków. Celem niniejszego badania było zbadanie zależności pomiędzy rolą nauczyciela wychowania fizycznego i trenera a poczuciem własnej skuteczności z pośredniczącą rolą orientacji na cele sportowe. Badanie przeprowadzono za pomocą metody opisowo-korelacyjnej. Adekwatność modelu pomiaru została sprawdzona za pomocą konfirmacyjnej analizy czynnikowej. Dane do badania uzyskano od 36 nauczycieli wychowania fizycznego poproszonych o wypełnienie kwestionariusza. Dane analizowano statystycznymi metodami testu korelacji oraz regresji dwudzielnej przy użyciu oprogramowania SPSS-22 i AMOS. Konflikt między rolami nauczyciela wychowania fizycznego i trenera z pośredniczącą rolą zmiennej orientacji na cele sportowe pokazał jej pozytywny i znaczny wpływ na poczucie własnej skuteczności. Orientacja na cele sportowe ma także pozytywny i bezpośredni wpływ na poczucie własnej skuteczności. Wyniki obecnego badania pozwoliły całościowo spojrzeć na to zjawisko. W związku z tym, nauczyciele wychowania fizycznego, którzy mają rolę pośredniczącą (koncentracja na roli nauczyciela i koncentracja na roli trenera) pokazali wysoki poziom poczucia własnej skuteczności oraz zorientowania na cele sportowe. Wyniki badania dostarczyły cennych informacji dla poprawy jakości uczenia się i nauczania w odniesieniu do trenerów i nauczycieli wychowania fizycznego.

Słowa kluczowe: bycie trenerem, konflikt ról, orientacja ego, nauczyciele WF, orientacja na zadanie.

Abstract

Teaching and coaching are two different occupational roles and the responsibilities of teachers and sports coaches can be distinguished from each other. The aim of this study was to investigate the relationship between the role of teacher-coach in sports and self-efficacy with the mediating role of sports goal orientation. This study used descriptive-correlational research. The appropriateness of the measurement model was tested by confirmatory factor analysis. Research data were obtained from 36 physical education teachers through a questionnaire. For data analysis, statistical methods of correlation test and bivariate regression using SPSS-22 and AMOS software were used. The conflict between the roles of sports teacher-coach with the presence of the mediating variable of sports goal orientation indicated a positive and significant effect on self-efficacy. Sports goal orientation also had a positive and direct effect on self-efficacy. The results of the present study displayed a comprehensive view. Accordingly, physical education teachers who have an intermediate role (teacher-centered and coach-centered) showed high self-efficacy and sports goal-orientation. The findings of this study offered valuable information to improve the quality of learning and teaching for sport coaches and physical education teachers.

Keywords: coaching, role conflict, ego orientation, Physical Education teachers, task orientation.

Introduction

Teaching and coaching are two different job roles and the teachers who have coaching duties may work in more stressful school environments than those in other educational settings. However, each job role has its own duties and responsibilities. It is obvious that the responsibilities of physical education teachers and trainers can also be distinguished from each other [23]. Teaching is a highly responsible job and requires effort and commitment. On a typical day, physical education teachers organize many sports classes, perform a variety of activities in the school environment, and attend meetings. In addition, they often conduct extracurricular activities, such as coaching sports clubs in schools. These multifaceted responsibilities often lead to full-time job opportunities [2], [12], [24].

Many Physical Education (PE) teachers have accepted that coaching is an expected job commitment in the form of extracurricular activities. However, coaching is different from many extracurricular activities as it requires many jobs performance and daily planning throughout the year. School sports teams, whose coaches are generally accountable for their performance, are expected to participate in regional sports competitions and advance to state championships. School physical education curriculums include coaching courses that teach students coaching skills. Furthermore, there are centers called extracurricular sports centers where students' sporting talents are identified. A number of interested students are trained in their favorite sports by enrolling in extracurricular sports centers under the supervision of experienced and expert coaches. Accordingly, physical education teachers in schools allow talented students who are at a high level in terms of athletic skills to coach weaker students [23]. However, these different roles and role conflicts may create tension among physical education teachers, who are also coaches. Therefore, the conflict between the role of a teacher and a sports coach can lead to inefficient teaching in PE classes due to mismanagement of valuable resources [7], [13], [22].

Figone (1994) briefly stated that in order to better understand the differences between teacher and coach roles, the origins of these roles should be examined [14]. The history of physical education showed that there are many underlying factors that increase the conflict between the roles of a teacher and a coach in sport. Self-efficacy is one of the factors included in this study because it is generally regarded as a positive and facilitating factor in sport [20], [27]. Self-efficacy has also attracted considerable attention in the education sector and is often associated with teachers and their efforts to become successful in the classroom [6]. The concept of self-efficacy, introduced by Bandura (1978), refers to an individual's assessment of their ability to achieve a certain goal through their actions. People with higher levels of self-efficacy are more likely

to be motivated to do a task, and to put more effort and perseverance into doing it [3], whereas people with low self-efficacy tend to perceive a competitive position more as a threat [40]. As Bandura considers self-efficacy to be an important factor for successful performance [39], he believes that self-efficacy beliefs are based on a person's perception of their individual performance. Thus, in fact it can be said that effective performance requires both having the skills and believing in the ability to perform those skills [25]. Accordingly, our definition of self-efficacy of physical education teachers in this article refers to their capabilities or abilities to achieve the desired results pertaining to student interaction and learning.

In general, the role conflict in physical education teachers is a natural thing, the result of a competitive environment, and occurs when their needs, wants, goals, ideas or values are different [26]. How a person typically evaluates success is called their goal orientation [32]. Sports goal orientation is also one of the most important factors causing the role conflict in physical education teachers. Therefore, the goal-oriented sports styles that teachers choose to implement to teach physical education are influenced by their needs, wants, goals, ideas and attitudes. It is noteworthy that the literature dealing with these goal orientations displays different views, but there is a general consensus among researchers that we can distinguish two goals, namely task orientation and self-control. The first goal, known as task orientation, focuses on how to learn a skill and become a master in that activity, the second goal, called ego orientation, refers to the comparison one makes of one's abilities with others' [29]. Studies have shown that ego-oriented people are more likely to engage in sports activities with motivations such as competing, gaining status, and proving their abilities over others while task-oriented individuals emphasize skills development and skillful performance [8].

Assar (2021) in a study showed that athletes with higher levels of task orientation tend to have a higher level of self-efficacy [1]. Similarly, Sari (2015) found a positive relationship between task orientation and self-efficacy in a study focusing on academic badminton players, and no significant relationship was found between ego orientation and self-efficacy [34].

However, to date, there has been no study that examines the relationship between the conflict among the role of a teacher and that of a coach, self-efficacy and the mediating role of sports goal orientation. The present study focuses on an important area that may lead to the development of self-efficacy and sports orientation among physical education teachers (teacher-centered, coach-centered and intermediate). Therefore, the main purpose of this study was to investigate the relationship between the role of a teacher and a coach in sports and self-efficacy with the mediating role of sports goal orientation.

Materials and methods

This research is regarded as descriptive-correlational research in terms of its applied purpose and method.

Participants

60 male physical education teachers from different schools who were employed in the educational department of Karaj city were used for this study using the convenience sampling method. All the participants who volunteered for the study indicated that they specialized in at least one sport. The mean age of participants was 35.84 years (SD = 3.79). After receiving and signing the informed consent form to determine the role of physical education teachers (teacher-centered, coach-centered and intermediate), the subjects were asked to complete a questionnaire that was developed by the researchers and focused on the role of a teacher and a coach in sports. Each participant was informed that the purpose of the study was to discover what their views and beliefs about teaching were like. Then, based on the scores obtained from the results of the teacher-coach role conflict questionnaire, 36 people, divided three groups (teacher-centered = 12 people, coach-centered = 12 people and intermediate = 12 people) were selected as a statistical sample. Then, all three groups were asked to complete the self-efficacy questionnaires on teachers and homework and self-orientation in sports.

Measurement tools

Research data were collected through the questionnaire. The three tools used in this study were the questionnaire of task and ego orientation in sports, the questionnaire of teachers' self-efficacy and the questionnaire of the teacher-coach role conflict. Relevant demographic information was also collected including age, gender, level of education, coaching degree and coaching background. Given that the questionnaire of this research was extracted from the proposed theories, its theoretical framework and analytical model has construct validity. The validity of the research tool was reviewed and confirmed by 11 professors of sports management. Also, Cronbach's alpha coefficient was used to evaluate the internal reliability of the questionnaire questions, which was calculated for the questionnaire of task and ego orientation in sports (α = 0.78), the questionnaire of teachers' self-efficacy (α = 0.81), and the questionnaire of the teacher-coach role conflict (α = 0.84).

Task and Ego Orientation in Sports Questionnaire

The Task and Ego Orientation in Sports Questionnaire (TEOSQ) [38] includes 16 items. The participants are asked to rate their agreement when they feel

most successful in a particular sports discipline in different situations. 8 of which reflect task orientation (for example, “When I learn a new skill with hard work”), while the other eight reflect selfishness (for example, “I feel successful in sports when others cannot do as well as I can”). The items were scored on the five-point Likert scale between strongly disagree (1) and strongly agree (5).

Teachers Self-Efficacy Questionnaire

The teachers’ self-efficacy scale [36] was used to measure this concept. This scale has 24 items based on the five-point Likert scale, which varies from very low (1) to very high (5). The sum of the scores of the items indicates the overall self-efficacy score. In addition to the overall score, this scale offers three sub-scores related to the following subscales: 1. Self-efficacy in classroom management (8 items), 2. Efficacy in student engagement (7 items) and 3. Efficacy in instructional strategies (9 items).

Teacher-coach role conflict Questionnaire

To assess this concept, the researcher-made sports teacher-coach conflict role questionnaire was used. This scale has 28 items based on the five-point Likert scale, which varies from strongly disagree (1) to strongly agree (5). This scale offers three sub-scores related to the subscales: 1. Teacher centered approach (10 items), 2. Intermediate approach (9 items) and 3. Coach-centered approach (9 items).

Data Analysis

Before starting to analyze the data, the quality of the data was examined. To determine the normal distribution, skewness and elongation values were examined. Descriptive statistics (mean, standard deviation, etc.) and inferential statistics (t-test, correlation coefficient test, and bivariate regression analysis) were used for data analysis. The details of the participants were reported in descriptive statistics. The measurement model was tested with the help of the confirmatory factor analysis (CFA) using the structural equation model and the fit of the model was evaluated as appropriate according to the fit statistics. The regression equation was used to test hypotheses. The regression equation is employed to determine the effect of independent variables on the dependent variable. The value of the coefficient of determination expresses how much of the change of the dependent variable is explained by the help of independent variables. Standardized beta coefficients are also effective in determining the relative contribution of each variable to the dependent variable. It is worth mentioning that

all calculations and drawings of graphs and tables were done through SPSS-22 and AMOS software.

Findings

Demographic variables

The sample includes 36 male physical education teachers from different schools with an age range between 22 and 57 years (SD = 3.79; M = 35.84) (Table 1).

Table 1 displays the socio-demographic data of the sample.

Table 1. Socio-demographic data of the sample.

		N	%
Gender	Male	36	100
Age	From 22 to 30 years	8	22.22
	From 31 to 39 years	14	38.89
	From 40 to 48 years	10	27.78
	From 49 to 57 years	4	11.11
Educational stage	Primary school	16	44.44
	Middle school	9	25
	High school	11	30.56
Type of school	Public	22	61.11
	Private	14	38.89
Teaching experience	Below 5 years	8	22.22
	6 to 10 years	11	30.56
	11 to 15 years	7	19.44
	16 to 20 years	6	16.67
	Over 21 years	4	11.11

Analysis of the correlation between the sport teacher-coach role conflict, teachers' self-efficacy and sports goal orientation

The analysis of the variables showed that there is a significant relationship between the sport teacher-coach role conflict, teachers' self-efficacy and sports goal orientation (P = 0.000) (see Table 2). The beta coefficient of each independent variable that was higher means that it has a greater relative share in the dependent variable changes. The results of Table 2 show that the sport teacher-coach role conflict has a greater relative share in the dependent variable changes (Beta = 0.807, p = 0.000).

Table 2. Hierarchical regression analysis results

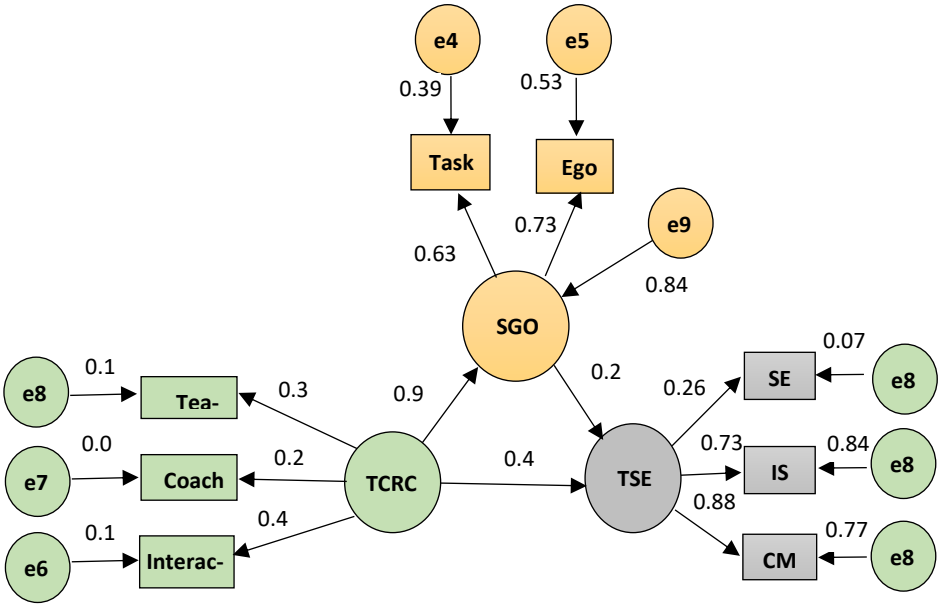
Model Statistics	Sig	t	Beta	Std. Error	B	Model	
R^2 = 0.651; Ad. R2 = 0.650; p = 0.000	0.000	4.500		0.394	1.772	Constant	1
	0.000	26.272	0.807	0.032	0.839	Tcrc (a)	
R^2 = 0.684; Ad. R2 = 0.683; p = 0.000	0.000	4.025		0.312	1.257	Constant	2
	0.000	9.586	0.365	0.040	0.379	Tcrc (a)	
	0.000	14.053	0.573	0.050	0.759	Sgr (b)	
R^2 = 0.730; Ad. R2 = 0.729; p = 0.000	0.000	3.658		0.624	2.282	Constant	3
	0.000	4.356	0.271	0.065	0.282	Tcrc (a)	
	0.000	5.088	0.430	0.112	0.570	Sgr (b)	
	0.000	1.895	0.228	0.009	0.017	Interaction	

(a) Teacher-coach role conflict
(b) Sports goal orientation

According to the table above, it can be seen that the level of significance of all the independent variables is less than 0.05 (p=0.000, p <0.05). Thus, they enter the regression model. Therefore, the null hypothesis is rejected and it can be said with 95% confidence that the fitted model is a suitable model and the regression relationship is linear.

Modeling structural equations using AMOS graphics

The following model tests the structural validity of the independent variables of the conflict between the role of a teacher and a sports coach and sports goal orientation with the dependent variable of teachers' self-efficacy and the goodness of fit test. The model combines the goodness of fit test of the proposed theoretical structure with the observed data and the structural validity of the measurement device in question. All adaptive indicators of the model also show values higher than 0.90, which means the ability of the model to distance itself from an independence model and to approach a saturated model based on the criteria defined for them. Since the criteria of TLI = 0.911, AGFI = 0.904 and IFI = 0.915 are close to one, it indicates a high fit of the model and the criterion of RMSEA = 0.078, which is less than 0.08, which means a good fit. Figure 1 displays Amos algorithm results.



Key: SGO: Sports goal orientation, TCRC: Teacher-coach role conflict, TSE: Teachers' self-efficacy, SE: Student Engagement, IS: Instructional Strategies, CM: Classroom Management

Figure 1. Amos Algorithm Results

Table 3 displays the results obtained from the output of Amos software.

Table 3. Results obtained from the output of Amos software

CMIN/DF	TLI	NFI	IFI	RMSEA	AGFI	Chi-square	P	DF
4.123	0.911	0.906	0.915	0.078	0.904	101.788	0.000	17

Discussion

The aim of this study was to investigate the relationship between the role of a sports teacher and a coach and self-efficacy with the mediating role of sports goal orientation. The findings showed that there is a positive and significant relationship between the components of the conflict between the role of sports teacher and a coach and self-efficacy with the mediating role of sports goal orientation. Self-efficacy is an important factor in the constructive system of human competence by which human cognitive, social, emotional and behavioral skills are effectively organized to achieve various goals [25]. Researchers have used complex data analysis methods and diverse populations in the educational environment to expand the body of knowledge about the teacher self-efficacy variable. In various studies, they have examined the positive relationships be-

tween teachers' self-efficacy and job satisfaction [37], goal orientation [5], [30], understanding of teaching methods [35], teachers' collective effectiveness [4], [41], school characteristics [19], students [18], and also the negative relationship between teacher self-efficacy and burnout [28].

Goostree (2021), in a study entitled "Comparative Analysis of Self-Efficacy among Different Groups of Teachers in Northern Middle Tennessee," concluded that no significant difference in overall self-efficacy was observed between different groups of teachers [17]. Due to the sports teacher and a coach role conflict, each teacher according to the environmental conditions and educational level, the type or types of methods and techniques that they think have the most impact on students, selects them, and employs in teaching and class management [15]. The role of physical education teachers in applying methods and techniques of teaching and training of motor and sports skills makes the goals of education in general and the goals of physical education in particular to be achieved more easily and effectively in a shorter period of time [31]. In addition to the specialized knowledge of physical education teachers, having additional information and knowledge, in particular, in some sciences, such as sports psychology, sports physiology, sports biomechanics, motor development, motor learning, and even sociology, is a valuable tool and an advantage for both teachers and coaches. The factors such as space, time, activities, educational materials, social communication [23], social origin, culture, gender, type and style of sports [11],and student behavior are related to the wide range of activities undertaken by the teacher in the physical education area [23]. Accordingly, Cynarski (2020) in a research entitled "Sensei (in martial arts = teacher) or Coach? His group relations in the context of tradition" pointed out that in martial arts, regardless of cultural and social differences, a sensei must also be a coach in order to have a relatively large educational impact on his players or students. Therefore, in the case of combat sports that have entered the path of competitive sports, the stark contrast between the roles of a coach and a sensei fades. This applies, for example, to the sports of jujutsu and karate (in different forms and organizations), as well as to the sports of wushu, judo and taekwondo, that is, the coach here is both a coach and a teacher. But in traditional sports such as various forms of folk wrestling and martial arts in the traditional understanding that makes them parts of the national cultural heritage of different countries and nations, teaching them requires knowledge of the entire cultural systems from which they originated. For this reason, a martial arts teacher should have a much broader competency than a coach specializing in sports teaching and training methods. This requires awareness of the moral code, school tradition, and the tutor - guide role of the person acting as sensei. Generally, the difference between the role of a sports coach/teacher and the role of a master in a martial art is culturally determined. A master should be a teacher and a coach.

This is due to the influence of the hierarchical culture and warrior ethics preserved in martial arts [10]. In another study, Cynarski et al. (2018) investigated the perception of success among people who practice martial arts and combat sports. The purpose of this research was to explain the "perception of success" in adult age groups in combat sports (contact and non-contact) among participants from the United States of America, the Czech Republic, and Poland. The noteworthy point of this study is its multidimensionality (culture, type of combat sports in terms of martial art or fighting style, goal and understanding of success). The research findings showed that there is a weak relationship between the perception of success and the type of fighting style of combat sports, and there is also a moderate relationship between the perception of success and social origin. Furthermore, a weak relationship was observed between perceived success, gender, and representativeness of the American or European cultural sphere. Undoubtedly, this issue requires more and wider research in educational environments, different types of martial arts, combat sports and related styles [11]. What is more, in another study by Cynarski et al. (2018) entitled "Young people practicing martial arts and their perception of success", the main goal of the research was to describe the perception of success in the age groups of 15 to 17 years, where 11.11% of girls and 88.89% of boys were involved in martial arts training. The participants (63 people) consisted of young people practicing martial arts from Poland and the United States. The research findings showed 1) a weak relationship between the perception of success and the type of fighting style cultivated, 2) a moderate relationship between the American participants versus the Polish participants, and the perception of success, and 3) a weak relationship between gender and perceived success in martial arts and combat sports. In the conclusion of this study, it is stated that the form or style of a cultivated martial art or combat sport that is performed does not have a significant impact on the perception of success expressed by children and teenagers involved in it [9].

Nonetheless, a physical education teacher in a sports class should be fully aware of all management and teaching methods and how to use each method in different educational courses (elementary, middle and high school) when using the teacher-centered or coach-centered role. In that way they can create individual and group learning opportunities as well as they can motivate students to participate actively in the exercises.

In a study, Assar (2021) investigated the mediating role of self-compassion in the relationship between goal orientation and self-efficacy in sports. The findings showed that there is a positive but weak relationship between task orientation and self-efficacy but there is no significant relationship between ego orientation and self-efficacy. The results showed that athletes with higher levels of task orientation also tended to have higher levels of self-efficacy [1]. In another

study, Ruzhikova et al. (2020) investigated "Changes in perceptions of value orientation in university students after a winter expedition: A report on experiential education from the Czech Republic". The most important finding of their research was the increasing importance of the value of the "peaceful world". Unfortunately, this finding cannot be compared with our research results, as our research studies usually lack this value. However, within the framework of the main research question and the purpose of the current research, this is convincing evidence that the perception of value orientation in physical education teachers can be influenced by other methods than sports goal orientation, such as philosophy training or ethics [33]. In another study, Kenioua (2017) examined the relationship between self-efficacy and goal orientation of football players in different positions in the game. The results of his findings showed that there is a positive and significant correlation between self-efficacy and task orientation and between self-efficacy and self-confidence of football players [21]. Gershgoren et al. (2011) also studied the effect of goal orientation on sporting success. The results showed that the emphasis on both skill and competitive goals provides more success and progress for the athlete than focusing on one goal [16]. Therefore, in line with the results of the research [1], [16], [21], it can be stated that if physical education teachers are looking for short-term and immediate changes in creating ego orientation and establishing championship motivation for students, they should play a coach-centered role in the sports class. On the other hand, if long-term and lasting changes are to be considered, they must play an intermediate role (teacher-centered and coach-centered) in teaching students' sports skills.

Overall, the results of this section of the research findings indicate that the goal of sports orientation is strongly influenced by the roles of physical education teachers, which are mainly manifested in coach-centered and intermediate teachers roles. Generally, the best role of physical education teachers to achieve the goal of students' sports orientation is the intermediate style.

Conclusion

The results of the present study provide a comprehensive view by examining the relationship between the role of a teacher and a coach in sport and self-efficacy with the mediating role of sports goal orientation. The findings of the present study show that the conflict between the roles of sports teacher and a coach has a positive and significant relationship with self-efficacy and sports goal orientation. Accordingly, physical education teachers who exercise the intermediate role (teacher-centered and coach-centered) have high self-efficacy and sports goal-orientation. It is important that the application of each teaching

method and the combination of these methods depend on the situation and purpose of education in schools. The factors influencing the role of physical education teachers in teaching motor and sports skills in sports classes depend on factors such as age, level of student experience, learning stage, teaching content, educational objectives and tools and facilities available in schools, activity level, available resources, number of students, available time, characteristics and attitudes of teachers.

The findings of this study provide valuable information to improve the quality of learning and education for sports coaches, physical education teachers and sports psychologists. Considering the fact that there are different courses (primary, middle and lower secondary). The purposes of teaching motor and sports skills are different from each other. Therefore, physical education teachers (teacher-centered and coach-centered) should make sure that each student has an opportunity to actively participate in sports activities and programs. Practical participation of students in sports activities or any other sport constitutes the basis of their learning. This means that students will not learn anything until they are educated and do something practically. Since students are not at the same level in terms of performing sports skills, intense competition between students reduces the enjoyment of training. Therefore, it is better to perform exercises and fitness exercises in groups and in the form of games. Accordingly, it can be noted that physical education teachers should know that each student could act to the best of their ability; and the important thing is that students realize that success can only be achieved through diligence and effort.

In conclusion, we have three different suggestions for the future research studies:

1. The present study could be conducted on female physical education teachers and the results of the two studies could be compared.
2. The conflict between the role of the sports teacher and a trainer and other psychological variables such as personality traits should be also investigated.
3. Considering the fact that the present study was conducted on secondary physical education teachers, it is suggested that further research should be conducted on physical education teachers at elementary and high school levels.

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Virus (COVID-19) Epidemic and Sports Performance: Evidence from Asian Professional Football Clubs

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Epidemia COVID-19 a osiągnięcia sportowe zawodowych klubów piłkarskich z Azji

Streszczenie

Kiedy wirus COVID-19 rozlał się po świecie, naukowcy wykonali wiele badań skoncentrowanych na sporcie i COVID-19, ale brakowało w nich metod ilościowych. Dlatego też celem niniejszych badań było ukazanie wpływu epidemii COVID-19 na osiągnięcia sportowe azjatyckich klubów piłkarskich za pomocą regresji kwantylowej. Badanie wykonano z użyciem danych panelowych piętnastu azjatyckich klubów piłkarskich w celu określenia ich osiągnięć sportowych. Co więcej, w badaniu zgromadzono przypadki zachorowań i zgonów spowodowanych wirusem COVID-19, służące jako dwie inne zmienne. Wyniki pokazują, że z uwagi na fakt iż szacunki współczynnika (stopień zależności) dla każdego kwantyla są równe (zarówno dla wpływu przypadków zachorowań – CA na osiągnięcia sportowe – SP jak i wpływu przypadków zgonów – DE na SP), struktura zależności

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jest określana jako stała. Dlatego też pozytywny szacunek i jego odpowiednik we wszystkich kwantylach dla wpływu zachorowań na wirusa COVID-19 (CA) na osiągnięcia sportowe (SP) pokazują, że przypadki zachorowań COVID-19 (CA) mają stały pozytywny wpływ na osiągnięcia sportowe (SP). Negatywny szacunek i jego odpowiednik we wszystkich kwantylach dla wpływu zgonów spowodowanych wirusem COVID-19 (DE) na osiągnięcia sportowe (SP) pokazują, że przypadki zgonów spowodowanych wirusem COVID-19 (DE) mają stały negatywny wpływ na osiągnięcia sportowe (SP).

Słowa kluczowe: osiągnięcia sportowe, piłka nożna, Azja, zawodowy klub, epidemia COVID-19.

Abstract

When the COVID-19 epidemic spread around the world, researchers did many studies about sports and COVID-19, but there was not much quantitative research. Therefore the purpose of this study was the effect of the COVID-19 epidemic on the sports performance of Asian football clubs with quintile regression. This study used panel data for fifteen Asian football clubs from April to December 2020. The research used the points of Asia football clubs to estimate their sports performance. Also, this study collected cases and deaths caused by the COVID-19 epidemic as the other two variables. According to the results, because coefficient estimates (degree of dependence) for each quantile are equal (for both effects CA on SP and effect DE on SP), the dependence structure is said to be constant. Therefore, a positive estimate and equivalent in all quantile for the impact of cases of COVID-19 virus (CA) on Sports Performance (SP) show that cases of COVID-19 virus (CA) have a constant positive effect on sports performance (SP). A negative estimate and equivalent in all quantile for the impact of death of COVID-19 virus (DE) on Sports Performance (SP) show that death of COVID-19 virus (DE) has a constant negative effect on Sports Performance (SP).

Keywords: Sports Performance, Football, Asia, Professional Club, the COVID-19 epidemic.

Introduction

On March 11, 2020, the World Health Organization announced that COVID-19 had become a global epidemic. More than five months later (August 28, 2020), health systems in many countries were still affected by the disease, and more than 880,000 people died from the virus. Many countries have experienced economic problems due to measures taken to suppress or reduce the epidemic [31]. Governments faced the virus and its problems, so they took steps to reduce the spread of the virus. Most governments used social distancing to keep person-person distance to limit the spread of the virus [34]. In this regard, all kinds of organizations suffered from the COVID-19 epidemic; professional sports such as football also faced problems during the COVID-19 epidemic. Currently, football is a sport with the most participation, influence, and income in the world, which affects not only sports but also social, economic, and even cultural sectors [15]. At the beginning of 2020 (January to March), the world, including the world of sport, faced a state of uncertainty in which practice became hard, and all sports competitions were postponed. The health of the athletes, coaches, and spectators became a priority, and the most important competitions, such as the Euro-

pean Football Championship and the Olympic Games in Tokyo, were postponed. The COVID-19 epidemic has caused financial and social problems to athletes, coaches, clubs, and sports federations. All teams sent their athletes home. Athletes could not follow their regular training and competition schedule at home. Regardless of its duration, staying at home (quarantine) could have a significant effect on the physical and mental state of athletes [22]. Moreover, quarantine can have a massive effect on the sports performance of football players. The COVID-19 pandemic forced professional football leagues worldwide into extended breaks, followed by a prompt resumption of competition. A study of the Bundesliga German football league proves that potentially inadequate periods of football-specific training may increase injury incidence in the first three games following the restart compared to pre-lockdown [10]. Also, Dönmez et al. show a significant positive correlation between Epidemiologic Studies Depression score and self-quarantine days in the players from 36 professional football teams (n = 977) in the Turkish Super League [13]. In addition, the effects of COVID-19 have led to a decrease in revenues, and professional football clubs are still trying to contain the economic effect of the COVID-19 pandemic [17].

Therefore, the COVID-19 pandemic has had destructive effects on the football industry, including its financial and social problems, quarantine, athlete injuries, and mental and psychological issues. These problems can decrease the sports performance of professional football clubs. Some studies examined the effect of the COVID-19 pandemic on athletes' performance in qualitative, descriptive, and quantitative (questionnaires) methods. The econometric studies in the field (COVID-19 and sports) are scarce. Therefore, this study investigates the effect of the COVID-19 pandemic on sports performance by the econometric method. For this purpose, this study used panel data for fifteen Asian professional football clubs from April to December 2020. Research collected the points of Asian football clubs to estimate sports performance. Also, this study collected two variables of cases and deaths of the COVID-19 epidemic. Finally, this study used the econometric method of quintile regression for data analysis.

Theoretical Background and Relevant Literature

COVID-19 epidemic in Asia

COVID-19 is a new type of coronavirus identified in China. Now its cases have been recognized in all countries in Asia, Australia, Europe, and North America [36]. The COVID-19 epidemic threatens humanity due to its continuous spread. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) originated in wild animals [35]. This disease (COVID-19) has symptoms such as fever, dry

cough, shortness of breath, and fatigue. COVID-19 has now spread over 206 countries or territories of the world. At the beginning of the COVID-19 epidemic, due to the unavailability of pharmaceutical means, different countries applied various policies to limit this epidemic. The most common was quarantine [28]. Then they started making vaccines. The vaccine reached people late, and the countries faced many problems. The COVID-19 epidemic began in Asia. Asian countries took different approaches to predict and handle this issue. The numbers of cases and deaths of the COVID-19 epidemic are very different in Asian countries. As other countries around the world confront their COVID-19 challenge, there may be much to learn from the experiences of various Asian countries (particularly China, South Korea, and Iran) [39]. The COVID-19 epidemic has had a significant effect on global economies. Market and economics have been affected, and Asian countries have been affected more negatively than other countries [16]. The economic impact of the outbreak of COVID-19 has had disastrous effects on the well-being of families and communities of Asia. For example, for low-income families, lost income due to the outbreak of COVID-19 would increase poverty, lead to famine, and reduce access to healthcare facilities. This phenomenon has been noticed in South Asia [21]. Many studies emphasized the effect of the COVID-19 epidemic on Asian countries. Islam et al. show that the outbreak of COVID-19 decreased the gross domestic product (GDP), having a detrimental effect on significant economic sectors and indicators in the South Asian economies [21]. Also, Abiad, Arao, and Dagli show that the range of scenarios explored due to COVID-19 in developing Asian economies, in brief, suggests a global impact of $77 billion to $347 billion or 0.1% to 0.4% of global GDP, with an average case estimate of $156 billion or 0.2% of global GDP. Two-thirds of the impact falls on the PRC, where the outbreak was concentrated [2].

COVID-19 and its impact on sport

The COVID-19 pandemic greatly impacted various parts of society, including economic, social, cultural, and sports areas in Asia. This disease put many countries in a state of quarantine. Also, sporting events (including the 2020 Olympics) were affected by COVID-19. Participation in sports was limited too. The local professional football leagues ultimately postponed all matches after much deliberation on the risk of lost transmission for TV spectators and on-field players [43]. Ratten [30] states that the COVID-19 crisis has significantly influenced the sports sector in a way that has never been seen before. Without a doubt, COVID-19 is the main word that defines the socio-cultural and economic situation of 2020. Also, in Asia, COVID-19 influenced sport. This epidemic first influenced East Asia, before the WHO declared it a global pandemic. The professional baseball and football leagues in this region delayed their opening matches until the virus was

under control. Additionally, the 2020 Tokyo Olympic Games were postponed until July 2021. After having interrupted the sporting schedule in East Asia in the first quarter of 2020, COVID-19 invaded West Asia [38].

COVID-19 and its impact on Asian Champions League 2020

Football is the most important sport in the world. Football has engendered excitement among people throughout Asian regions since its introduction on that continent. Numerous Asians enjoy football as practitioners, audiences, and fans; hence the Asian markets for broadcasting football events and football-related goods have recently expanded. In addition, some regional football leagues, such as the Asian Cup and Asian Champions League, have also been created and evolved. Within the past couple of decades, several club leagues in Asian countries have received great investments, and they are emerging in global competitions by recruiting international football players and coaches [9]. Before the FIFA World Cup 2002 in Korea and Japan, there was a belief that Asian football teams could not achieve success, and Asian footballers and teams were criticized for lacking quality at an international level. On the other hand, the situation was different in women's football, and China had an outstandingly successful international team during its 'golden age' from 1986 until 1999 [40]. After choosing Korea and Japan as hosts for the World Cup, FIFA and the Asian Football Confederation (AFC) improved the situation of Asian football and its member associations so that they could operate on a much broader scale than hitherto [24]. By its slogan 'The Future is Asia', the AFC initiated the Vision Asia football development program in 2003. It aimed at increasing the standards of Asian football at all levels, including the field of play, administration, or sports science [19]. In 2018-2019, Asia was on the verge of significant improvements in football according to its planning. Suddenly, it faced the global virus, COVID-19. At the time, football competitions without fans with artificial crowd noise were the only live sport in the world [38]. Accordingly, the COVID-19 pandemic stopped the majority of sporting events. Some of these events were conducted without spectators. For example, the Tokyo Summer Olympics and Paralympics 2020 were rescheduled for July 2021, and the Union of European Football Associations (UEFA) postponed its 2020 Champions League matches as a preventive measure to avoid the spread of the virus [12]. Also, the outbreak of COVID-19 in Asian countries made the Asian Football Confederation (AFC) postpone the AFC Champions League. Finally, the Asian Football Confederation (AFC) decided to hold a sporting event in Qatar. The tournament resumed from 14 September to 3 October in four stadiums across Qatar, three of which are FIFA World Cup 2022 stadiums. Along with Jassim bin Hamad Stadium, home of local QSL side Al Sadd SC, Qatar 2022 venues Khalifa International Stadium, Al Janoub Stadium, and

Education City Stadium hosted matches in the group stage until the semi-final. The Qatar Football Association (QFA), the Supreme Committee for Delivery & Legacy (SC), and the Qatar Stars League (QSL) have worked with the Asian Football Confederation (AFC) to implement measures and protocols to ensure the safety of players and tournament officials. These included mandatory COVID-19 testing, safe transportation methods, regular disinfection of all tournament venues, including training and media facilities, as well as the provision of medical staff in stadiums throughout the competition. Hosting the AFC Champions League marks a significant milestone in the return of football at a continental level following the unprecedented disruption of the few months. To ensure the safe and gradual return of Asian football, and in line with the State of Qatar's commitment to limit the spread of COVID-19, no fans were permitted into stadiums during the tournament. As per the regulations stipulated by the Ministry of Public Health (MoPH), all players and tournament officials tested for COVID-19 upon their arrival in Qatar at Hamad International Airport (HIA). In order to take part in the event, participants were quarantined until their test results were negative. As soon as they arrived in their designated accommodation, players and tournament officials were placed in a medical bubble that limited their movement only to their designated accommodation, stadiums, and training sites. Individuals in the same medical bubble were not permitted to make contact with anyone outside their bubble to prevent the spread of COVID-19. Players and tournament officials always wore masks when the tournament activities kicked off. Also, they maintained the social distance between individuals with a 1.5-meter space per Qatar's health protocols. Moreover, food and beverages were not allowed inside the stadium. One protocol mandates that the teams were only transported in small groups of a maximum 50 percent capacity using alternate seats and maintaining the 1.5-meter distance. Other preventive measures show that the tournament venues' capacity was strictly monitored and disinfected regularly. All stadiums were equipped with medical clinics fitted with a team of medical staff. The stadiums also had dedicated isolation rooms to hold any individual exhibiting symptoms of COVID-19 or requiring any medical assistance [1].

COVID-19 and its impact on Asia Football Clubs Performance

The COVID-19 epidemic has had different effects on the sports performance of football clubs and their athletes. These essential effects include financial problems, mental and psychological issues, and injuries to athletes. Bond et al. show that holding competitions without spectators and fans has created many financial problems and issues for football clubs [7]. COVID-19 has caused a shock in society and the world of sport. Therefore, sports and football competitions

without spectators and fans comprised many financial issues that threatened the sustainability and future of many football clubs [7]. Wilson, Plumley, Mondal, and Parnell provided an analysis of the impact of COVID-19 on English football's finances that indicate that the financial consequences of COVID-19 are severe for football's financial area [41]. Three important sources of clubs' revenue are match day, commercials and broadcasting, and ticket sales [29]. Indeed, Football clubs are more dependent on match-day revenue than other revenue [42]. According to the COVID-19 pandemic rules, competitions had to be run without spectators, and many clubs suffered a financial burden through revenue losses [12]. Football clubs are dependent on their fans and spectators. They need to sell tickets and commercials on match days to earn revenue. Football competitions during COVID-19 were played without spectators in many Asian football leagues, including Iran and Saudi Arabia. Even the Asian Champions League was held without spectators in many matches. Because of such a situation, many Asian football clubs were deprived of earning revenue on match day. These circumstances affected the sports performance of Asian football clubs.

During COVID- 19, many athletes were quarantined because their COVID-19 tests were positive. Therefore, athletes were likely to be exposed to some level of detraining as a consequence of inappropriate training stimuli, which may result in impaired performance and increased injury risk [12]. Dergaa et al. offered solutions for organizing football matches with spectators during the COVID-19 pandemic in the Amir Cup Football Final of Qatar 2020 [12]. As, Yousfi, Bragazzi, Briki, Zmijewski, and Chamari state, it is so important to pay attention to issues such as nutrition, fasting and calorie restriction, immune system, vitamin D, adequate sleep, physical exercise, and psychodynamic management during the COVID-19 period, especially for quarantined athletes [44]. Further on, they offer some recommendations for improving athletes. The quarantine during the COVID-19 pandemic manifested significant physiological changes in elite football players. Although it will differ from country to country, the return to sport for professional football players will follow a forced quarantine never experienced and longer than the regular annual season break. Moreover, in addition to a noticeable decrease in performance, the quarantine will possibly increase the injury risk [6]. Asian Champions League and inner leagues have rules for the quarantine of club football players. Many players of Asian football clubs could not accompany their clubs due to quarantine, and even when they returned to competitions after quarantine, they could not have a good performance. Also, there was a quarantine of sports teams in the Asian Champions League 2020, in Qatar, and this issue affected the athletes' sports performance.

The pandemic of COVID-19 continues. The fear of sickness or losing one's life because of contamination, helplessness, and loneliness due to isolation is known, in many individuals, to lead to a spread of public mental health and psy-

chological crises concerning anxiety, stress, or depression [14]. These effects can be observed in football players such as Mehrsafar, Moghadam Zadeh, Jaenes Sánchez, and Gazerani. They provide the first preliminary evidence that COVID-19 anxiety and competitive anxiety might have a negative impact on the athletic performance of professional football players during COVID-19 pandemic competitions [26]. Professional athletes are under competitive stress; however, they are also affected by the physical and mental consequences of the COVID-19 pandemic [25]. The impact of the pandemic on professional athletes' mental health originated from the cancellation or postponement of matches, violation of training, and frequent removal and placement of quarantine, generating uncertainty for their athletic careers [11]. Based on the opinion of Reardon et al. elite athletes have receive special care regarding their mental health during the pandemic [32].

Method

Data and Analysis

This paper used panel data to analyze data. The panel data within this study is a combination of time-series and cross-sectional dimensions, thus eliminating many of the disadvantages of cross-sectional or time-series data. The panel data captures more social and economic information, has control over potential heteroskedasticity, and significantly avoids biased estimates caused by ignoring variables. Also, the panel data increases the explanatory power of the samples and increases the reliability of the results [18]. Therefore, this paper uses monthly data (April to December of 2020) of Asian football clubs points for 15 clubs to estimate the Sport performance variable. These clubs have the highest point score among Asian football clubs according to FIFA Ranking. They include Persepolis and Esteghlal of Iran, Al Nassr and Al Hilal of Saudi Arabia, Jeonbouk FC and Ulsan Hyundai of South Korea, Kawasaki Frontale and Kashima Antlers of Japan, Al Duhail SC and Al-Sadd of Qatar, Guangzhou F.C, Beijing Guoan and Shanghai Port F.C of China, Pakhtakor Tashkent of Uzbekistan and Buriram United of Thailand. This paper also uses monthly data (April to December of 2020) of Cases and Deaths from the COVID-19 virus in countries including Iran, Saudi Arabia, South Korea, Japan, Qatar, China, Uzbekistan, and Thailand. In this study, SP is a symbol for the variable of Sports Performance, which was collected from the website (www.footballdatabase.com). Also, CA and DE are symbols for variables of cases and deaths from the COVID-19 virus. This Research collected CA and DE from the World Health Organization (WHO) (https://covid19.who.int/table). The table offers the summary statistics for the aforementioned variables.

Table 1. Summary statistics for the variables

Variables	Sym-bol	Mean	Median	SD	Min	Max	JB	Prob.
Sports Perfor-mance	SP	1573/94	1570	45/67	1497	1686	8/16	0/01
Cases	CA	145870/4	87680	205409/1	1887	1206373	1009/26	0/0000
Deaths	DE	5028/53	1264	10012/20	8	10012/20	1113/09	0/0000

Source: own research.

According to Table 1, the mean sports performance of Asian Football Clubs in the period of nine months from April to December of 2020 is 1573/94, and this value fluctuates between 1497-1686 points. Also, the mean of cases of COVID-19 for the countries from April to December of 2020 is 145870/4 cases. These numbers fluctuate between 1887 – 1206373 cases in Asian countries. Finally, the mean of death from COVID-19 in the period of nine months from April to December of 2020 is 5028/53 deaths, and these numbers fluctuate between 8 – 10012/20 cases in Asian countries.

Figure 1 shows the status of the cases-cumulative total of the COVID-19 virus for the countries from April to December of 2020 (1-9). The trend of the COVID-19 virus is increasing in all the countries from April to December of 2020. However, Iran and Saudi Arabia had the highest cases-cumulative total of the COVID-19 virus in this period.

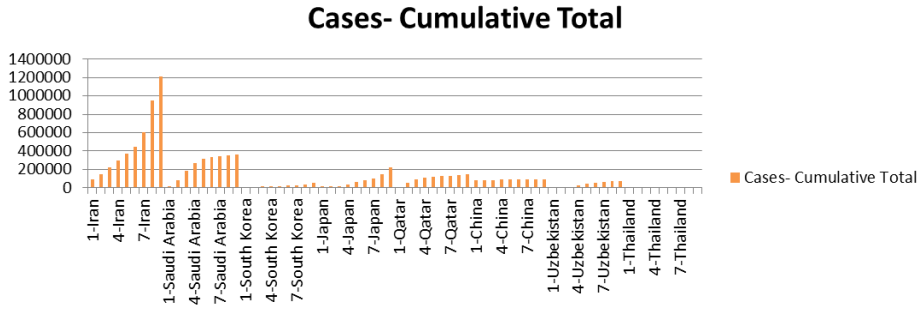

Figure 1. Trend for cases-cumulative total of the COVID-19 virus for the Asian countries

Source: own research.

Figure 2 shows the status of the deaths-cumulative total of the COVID-19 virus for the countries from April to December of 2020 (1-9). The trend deaths-cumulative total of the COVID-19 virus is increasing in all the countries from April to December of 2020, but Iran and Saudi Arabia, respectively, had the highest deaths-cumulative total of the COVID-19 virus in this period.

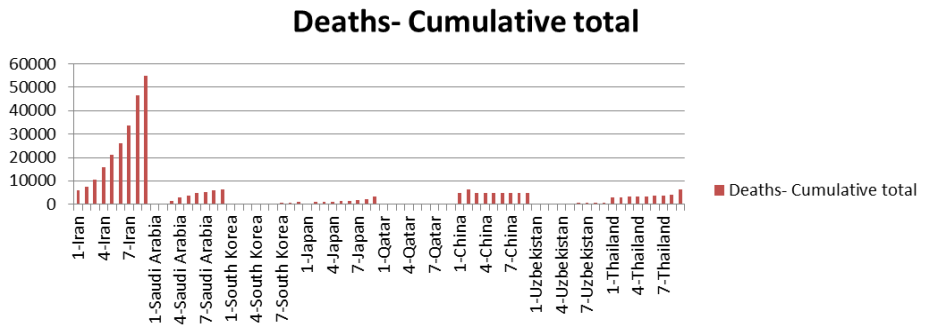

Figure 2. Trend for deaths-cumulative total of the COVID-19 virus for the Asian countries

Source: own research.

Figure 3 shows the status of point score of Asian football clubs according to the FIFA ranking for football clubs from April to December of 2020 (1-9). Some clubs' points were increasing, although some clubs' points were declining. Also, the trends of some clubs were fluctuating.

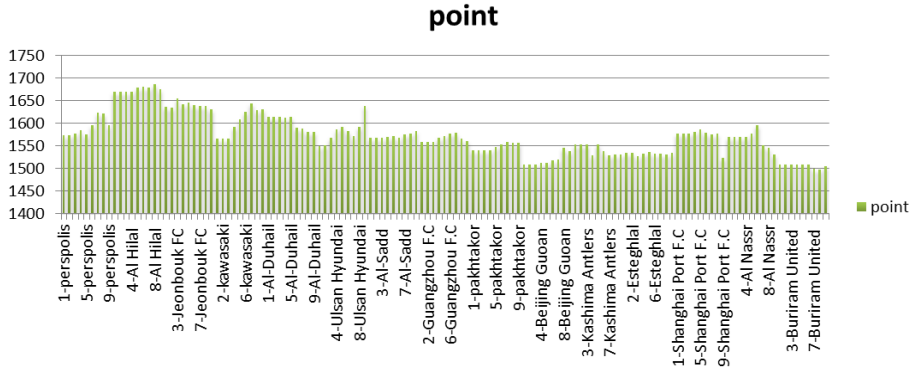

Figure 3. Trends for Sports Performance (Points) of Asian Football Clubs

Source: own research.

Analysis and Equations (Quantile Regression Approach)

This paper employs the panelized QR (Quantile Regression) of Koenker and Bassett [23] to study the effect of the cases and death of the COVID-19 epidemic on the sports performance of Asian football clubs. In experimental studies, researchers are interested in analyzing the behaviors of dependent variables to obtain information contained in a set of regressors (explanatory variables). In order to estimate the linear regression model and its unknown parameters, studies usually use the standard methods of Ordinary Least Squares (OLS) or the Least Absolute Deviations. The OLS method calculates the parameter estimation

by minimizing the sum of squares of error and leads to an approximation of the conditional mean function of the dependent variables. The LAD method minimizes the sum of absolute errors and results in an approximation of the conditional median function. As long as the complete conditional distribution is considered, describing only the conditional median or mean is not very satisfactory. Therefore, a suitable method in regression analysis is the Quantile Regression method of Koenker and Bassett. The QR method of Koenker and Bassett provides the estimates of the degree of dependence conditional on each quantile [4]. It can reveal any structure of dependence, such as symmetric (e.g., a u-shaped structure or an inverted u-shaped structure) and asymmetric with a left-tail or a right-tail structure of dependence. For example, if the coefficient estimates (i.e., degree of dependence) for each quantile are equal, the dependence structure is said to be constant. If the estimates are equally high in the tails with lower values in the intermediate quantiles, there is a symmetric u-shaped dependence. If the coefficient estimates monotonically increase from the lower quantiles to the upper quantiles, there is an asymmetric dependence structure with right-tail dependence. If the coefficient estimates monotonically decrease from the lower quantiles to the upper quantiles, there is an asymmetric dependence structure with left-tail dependence [3]. According to Baur, there is no need to determine an ad hoc structure for QR since the type of structure is an outcome of the piecewise estimation process of dependence across all quantiles. Therefore, QR offers a more comprehensive picture of any structure while accounting for non-linearities and asymmetries [4]. Therefore, this study considers an equation (Eq1) according to the QR method of Koenker and Bassett:

$$\text{Eq1: } SP_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 DE_{it} + \varepsilon_{it}$$

In this equation, SP is a symbol for estimation of the sports performance variable of Asian football clubs, and CA is a symbol for estimating the Cases-cumulative total of the COVID-19 virus. Also, DE is a symbol for estimation of Deaths- Cumulative total of the COVID-19 virus for the countries whose football clubs were selected. Also, i is cross-sectional, t is time, and ε is an error sentence. Finally, When CA and DE variables equal zero; β_0 is the value of SP. Also, β_1: holding DE constant, a one unit change in CA results in a β_1 unit change in SP. Finally, β_2: holding CA constant, a one unit change in DA results in a β_2 unit change in SP. Finally, in this study, after the data were categorized using Excel software, they were estimated by QR method using Eviews software, and the results of QR are confirmed using the BootStrap method.

Results

This section presents the research results to estimate the research equation according to the QR method. Therefore, Table 2 shows the results of the esti-

mated effect of Cases (CA) and Deaths (DE) of the COVID-19 virus on Sports Performance (SP) of Asian football clubs.

Table 2. Estimate results according to Quantile Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Quantile
CA	0.0001	6.47	2.28	0.02**	0.1
DE	-.002	0.001	-1.94	0.05**	
CA	0.0001	6.72	2.91	0.004**	0.2
DE	-0.003	0.001	-2.95	0.003**	
CA	0.0001	7.31	2.13	0.03**	0.3
DE	-0.003	0.001	-2.51	0.01**	
CA	0.0001	8.43	2.07	0.04**	0.4
DE	-0.003	0.001	-2.39	0.01**	
CA	0.0001	4.94	2.61	0.009**	0.5
DE	-0.002	0.001	-2.19	0.02**	
CA	0.0001	6.43	2.70	0.007**	0.6
DE	-0.003	0.001	-2.51	0.01**	
CA	0.0003	7.15	5.46	0.0000**	0.7
DE	-0.006	0.001	-4.73	0.0000**	
CA	0.0003	6.88	5.57	0.0000**	0.8
DE	-0.007	0.001	-4.97	0.0000**	
CA	0.0002	0.0001	2.04	0.04**	0.9
DE	-0.0001	0.002	-2.13	0.03**	

** effect of CA and DE on SP in level 0.05 ($p<0.05$)

Source: own research.

Table 2 includes the effect of the cases-cumulative total of the COVID-19 virus (CA) and deaths-cumulative total of the COVID-19 virus (DE) on Sports performance (SP). The first column shows the coefficients, and the fifth column shows a significant level (Prob. = P<0/05) for the effect of CA and DE on SP. The last column shows the value of Quantile for each estimate. Also, the third and fourth columns show respectively the values of Standard Error and t-Statistic. According to Table 1, because the coefficient estimates (i.e., degree of dependence) for each quantile are equal (for both effects of CA on SP and the effect of DE on SP), the dependence structure is said to be constant. The estimates show a constant dependence that is equal in the lower tail (0.0001) compared to the upper tail (0.0002) for the panel of the effect of CA on SP. Also, there is a constant dependence that is equal in the lower tail (-0.002) compared to the upper tail (-0.0001) for the panel of the effect of DE on SP. In addition, the mid-point

(median) estimation is 0.0001 for the effect of CA on SP and the mid-point (median) estimation is -0.002 for the effect of CA on SP.

Based on this result, the degree of dependence between COVID-19 virus cases (CA) and sports performance (SP) is equal in all quantiles for the selected period. Also, the degree of dependence between death from the COVID-19 virus (DE) and sports performance (SP) is equal in all quantiles for the selected period. The positive estimates indicate an increased effect of COVID-19 virus cases (CA) on sports performance (SP), and the negative estimates indicate a decreased effect of death from the COVID-19 virus (DE) on sports performance (SP). The positive estimate, equal in all quantiles for the effect of COVID-19 virus cases (CA) on Sports Performance (SP), shows that COVID-19 virus cases (CA) have a constant positive effect on sports performance (SP). The negative estimate, equal in all quantiles for the effect of death from the COVID-19 virus (DE) on Sports Performance (SP), show that death from the COVID-19 virus (DE) on Sports Performance (SP) has a constant negative effect.

Discussion

COVID-19 has had a tremendous impact on the world's society and economy. This subject also applies to European football; the continent's largest professional sports ecosystem has millions of employees in football-related jobs and even more people emotionally attached to this sports discipline [5]. Since the appearance of the COVID-19 epidemic, much research has been done on the effect of COVID-19 on sport. COVID-19 has interrupted professional sports events in most countries and created many problems for this lucrative industry; therefore, many researchers have done research in this area. Football is a lucrative sector and industry for most countries, especially in Asia, which was affected by this virus. Therefore, there are a lot of studies in Asia on the effect of COVID-19 on the performance of football athletes. Most of these researchers study this subject through interviews, questionnaires, or in the form of descriptive reviews and experimental research methods. For example, Hoang, Al-Tawfiq, and Gautret state that to control the COVID-19 outbreak, Japan postponed the Tokyo 2020 Olympics to 2021. Given the high contagiousness of the disease and the epidemiology of COVID-19 in Japan, this decision was appropriate and essential to safeguarding athletes. COVID-19 is a significant problem for Japan, involving massive financial losses and a lost opportunity for athletes, coaches, and instructors [20]. Also, Dergaa et al. reviewed the guidelines, policies, and preventative measures implemented in organizing the Amir Cup Football Final of Qatar, which hosted about 20,000 fans. These preventative measures show that it is possible to organize a significant football match held outdoors with

thousands of supporters. They suggested a model for the process of organizing significant sporting events with spectators in times of COVID-19 [12]. Chen and Horne list critical aspects of the Covid-19 pandemic-related developments and indicate how these may have altered future training and development processes of referees in the AFC for good [8]. Takata and Hallmann used data collected from baseball and football fans in Japan during the Covid-19 pandemic. They analyzed the moderation effect of sports fans' match attendance on the relationship between nostalgia and revisit intention. The results revealed that nostalgia for the environment stimulated non-attending fans to return to stadiums [37]. So, these research types do not show accurate statistics of the COVID-19 status in a spectrum or continuum. Therefore, this study estimated the effect of COVID-19 on the sports performance of Asian football clubs with the quintiles regression econometric approach. For this purpose, this study used panel data for Asian football clubs and their related countries. Therefore this study can provide accurate information about the death and case rate of COVID-19 in Asian countries. This study shows that the mean of COVID-19 cases from April to December 2020 is 145870/4 cases, and these numbers fluctuate between 1887 – 1206373. Also, the countries' mean of death from COVID-19 is 5028/53, and these numbers fluctuate between 8 – 10012/20 cases in Asian countries (see Table 1). Also, the trend of cases and deaths from the COVID-19 virus was increasing in all countries from April to December of 2020, but Iran and Saudi Arabia, respectively had the biggest deaths and cases-cumulative total of the COVID-19 virus in this period (see Figure 1 and 2).

The study also provides exact information on the Asian football clubs' performance during COVID-19 by studying the time series of sports clubs' points. The results show that the trend of points of some clubs was increasing although the trend of points of some other clubs was declining; also, the trend of points of some clubs was volatile (see Figure 3).

After providing descriptive statistics, this study estimated the effect of cases and deaths from COVID-19 on sports performance using the quintiles econometric regression approach. The results show that the degree of dependence between cases and deaths from COVID-19 and sports performance (SP) is equal in all quantiles. However, the effect of COVID-19 cases on sports performance is positive and weak, and the effect of deaths from COVID-19 on sports performance is negative. These findings mean that deaths from COVID-19 decrease sports performance in Asian football clubs. The results are in line with researches of Bisciotti et al.; Bond et al.; Davis et al.; Dergaa et al.; Dönmez et al.; Mohr et al.; Sekulic et al. [6, 7, 11, 12, 13, 27, 33]. For instance, Sekulic et al. show that there is a significant decrease in the physical performance in matches after the COVID-19 lockdown for players in all playing positions [33]. Mohr et al. reason that due to the multifaceted physiological demands in elite football, long

recovery requirements after match-play, and an upcoming reality of many games within a short period, elite football players, managers, and clubs may face extraordinary challenges associated with returning to play under the current circumstances [27]. Bisciotti et al. provide practical recommendations for preparing training sessions for professional footballers returning to sport after the lockdown [6]. Bond et al. presented the analysis of the effect of fans' return to football competitions and its impact on the income of football clubs [7]. Davis et al. showed that written emotional disclosure can promote athletes' mental health and performance readiness during the COVID-19 pandemic [11]. Bond et al. and Dergaa et al. believed that football competitions without spectators caused financial problems for football clubs [7, 12].

The COVID-19 pandemic has changed the status of football matches around the world. Several competitions and leagues were canceled or postponed. Players train in solitude. In the second stage, players start training in small groups with strict contact restrictions. Their return to competitive play might occur only after a few weeks of typical team training preparation. These circumstances are likely to impact football performance and injury risk in the upcoming competitions [27]. The return to sport for professional football players will follow a forced lockdown never experienced before and longer than the regular annual season break [6]. The COVID-19 pandemic forced elite football leagues into extended breaks. Followed by the prompt resumption of competition, inadequate periods of on-pitch football-specific training may underlie the increased injury incidence reported following a restart in a non-peer-reviewed report [10]. Also, COVID-19 has sent a shockwave into society and sport. As a result, sport and football resuming without spectators – fans or supporters, has brought several financial issues that have threatened the sustainability and future of many clubs [7]. Also, the incredible effects of the coronavirus disease in 2019 (COVID-19) pandemic have negatively impacted many athletes' mental health, reflected in numerous reports on depression as well as symptoms of anxiety. Disruptions to training and competition schedules can induce athletes' emotional distress, while concomitant government-imposed restrictions (e.g., social isolation, quarantines) reduce the availability of athletes' social and emotional support [11]. Maintaining regular physical activity and routinely exercising in a safe home environment is one of the essential strategies to ensure a healthy mental state [13]. Finally, as football leagues shut down, revenues dry up, presenting acute cash flow challenges for the game. No club will be immune to financial repercussions from the crisis, but some will be better protected than others. COVID-19 has created a significant financial disparity between the professional leagues [41]. Sports and football competitions without spectators and fans generate many financial issues that threaten the sustainability and future of many football clubs [7]. Therefore, the three components of clubs' income, psychological

and mental issues and injuries after quarantine have been the most important factors negatively impacting the sports performance of football players.

Conclusion

The COVID-19 epidemic has had different effects on different parts of the world. Sport was also affected by COVID-19. This virus began in Asia, China and then spread to other Asian countries, causing many economic, social, and cultural problems. Asian football was one of the essential sports activities affected by the COVID-19 epidemic. All football leagues in different Asian countries were closed, the activities of sports clubs during COVID-19 were stopped, and the Asian Champions League, which was in the group stage of the 2020 season, was stopped. After a while, the AFC decided to hold the tournament in Qatar. Also, some domestic leagues started their activities, but many countries could not resume their leagues. The resumption of football matches in Asia was difficult for Asian football clubs during COVID-19, and they faced problems such as not earning revenue on the match day, injuries to athletes, and psychological and mental problems of Asian football players. Asian football clubs were deprived of their income of the match day, such as ticket sales and advertising. Many clubs were even reluctant to hold matches and waited for these events to be postponed. Moreover, football players were quarantined for two weeks if they tested positive for COVID-19. When they returned to a sporting event, they did not perform well due to psychological and mental issues such as stress, anxiety, and depression. Additionally, these football players were exposed to injury due to lack of training after returning to sport, and consequently suffered severe injuries.

Thus, the three most important factors, i.e. lack of club income and revenue during COVID-19, post-quarantine injury, and psychological and mental problems are the most acute effects of COVID-19 on the sports performance of Asian football clubs and players. Also, an increased COVID-19 death and case rate in a given country would lead to worsened sports performance, which was confirmed by the results of this study. Our research showed that an increase in COVID-19-related deaths was detrimental to sports performance in Asian football clubs. Therefore, Asian football clubs should use the right solutions to improve their sports performance during COVID-19. To receive the revenue of the match day, they can provide a safe background for holding competitions with spectators by meeting health requirements, timely vaccinations and modeling from countries such as the United Kingdom. Also, players with positive COVID-19 tests who are in quarantine should be prepared to return to matches by psychologists and dedicated training coaches.

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The influence of complex military and sports training on the psycho-physiological abilities of university cadets

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Wpływ złożonego szkolenia wojskowo-sportowego na zdolności psychofizjologiczne kadetów uniwersyteckich

Streszczenie

Artykuł poświęcony jest zagadnieniu korekty cech psychofizjologicznych podchorążych wyższych wojskowych instytucji edukacyjnych. W badaniu wzięło udział 131 kadetów (17–26 lat), którzy zostali podzieleni na grupę kontrolną (n = 95) i eksperymentalną (n = 36). Grupa kontrolna kontynuowała realizację dotychczasowego programu szkoleniowego, a grupa eksperymentalna była zaangażowana w szeroko zakrojoną sekcję wojskowo-sportową.

Przeprowadzono badania pedagogiczne w celu oceny poziomu psychofizjologicznych wskaźników umiejętności. W celu określenia wpływu programu eksperymentalnego na zdolności psychofizjologiczne kadetów zastosowano metodę pretest-posttest. Rzetelność różnicy między wskaźnikami podchorążych obu grup ustalono za pomocą testu Studenta ($p < 0.05$).

Zbadanie wpływu złożonego szkolenia wojskowo-sportowego na zdolności psychofizjologiczne kadetów uniwersyteckich.

Wyniki eksperymentu wskazują na poprawę wskaźników zawodowo ważnych zdolności psychofizjologicznych przedstawicieli grupy eksperymentalnej w stosunku do respondentów grupy kontrolnej: szybkość uwagi wzrosła o 7,9% ($p < 0,05$), koncentracja uwagi o 15,4% ($p < 0,05$), umysłowa pojemność o 4,4% ($p > 0,05$), a współczynnik produktywności umysłowej o 8,3% ($p < 0,05$). Tym samym metody sportów wojskowych mogą być wykorzystywane do korygowania ważnych zawodowo zdolności psychofizjologicznych podchorążych wyższych wojskowych placówek oświatowych na całym świecie.

Słowa kluczowe: eksperyment, wszechstronne sporty wojskowe, trening psychofizjologiczny, kadeci, gotowość.

Abstract

The article is devoted to the issue of correcting psycho-physiological qualities of VVNIZ cadets. 131 cadets (17–26 years old) participated in the study. They were divided into control (n = 95) and experimental (n = 36) groups. The control group continued to perform the current training program, and the experimental group was engaged in the ICU section.

Pedagogical testing was conducted to assess the level of psycho-physiological indicators of abilities. A pretest-posttest method was used to determine the impact of the experimental program on the cadets' psycho-physiological abilities. The reliability of the difference between the indicators of the cadets from the two groups was established using Student's t test ($p < 0.05$).

To investigate the influence of complex military and sports training on the psychophysiological abilities of university cadets.

The results of the experiment indicate an improvement in the indicators of professionally important psycho-physiological abilities of the EG representatives in relation to the CG respondents: attention speed improved by 7.9% ($p < 0.05$), concentration of attention by 15.4% ($p < 0.05$), mental capacity by 4.4% ($p > 0.05$), and mental productivity coefficient by 8.3% ($p < 0.05$). Thus, the means of MSAC can be used to improve professionally important psycho-physiological abilities of cadets of higher military educational institutions.

Keywords: experiment, complex military sports, psycho-physiological training, cadets, readiness.

Introduction

Modern military specialties require a higher level of psychical standards and physical fitness of soldiers and also increase demands for their military-professional preparation [15]. The main advantage of modern professional armies is the ability to select the best representatives of the nation for military service. However, in Ukraine, given the low prestige of military service, it is impossible to ensure high quality professional selection. Taking into account the participation of Ukrainian Armed Forces in combat operations, the psychophysical readiness to perform assigned tasks increases the requirements for special physical training of servicemen [30].

The events of the last years in the east of Ukraine showed the importance of a personal ability to resist the influence of various stress factors, to maintain a high capacity level and keep psycho-physiological readiness to conduct the battle actions in extreme circumstances [16].

The authors of domestic scientific works [6, 8] assert that recently the psycho-physiological indexes of Ukrainian young people have clearly demonstrated a tendency to worsen. According to Asci [1] the personal efficiency of functioning of sensory and sensor-motor systems, the parameters of memory and attention went down considerably. The motivation indexes of an educational activity also became worse [19]. High requirements for professional level military servicemen and the complexity of assigned tasks call for appropriate psycho-physical training [2]. The task of psycho-physical readiness of future professionals must be solved in the walls of higher educational establishments with the help of the professionally-oriented educational disciplines. There is such a discipline in Ukrainian civilian universities, i.e. the Professionally-Applied Physical Training [24]. As for higher military educational institutes it is the Special Physical Training [21]. One of its main tasks is the development and improvement of cadets' professionally important abilities, including psycho-physical endurance as a reliable basis for their successful professional military activity in extreme conditions of military life [11, 14]. Korovin and Kabachkov in their articles investigated the importance of professionally-applied physical preparation for cadets' future activity [9]. The problem of psycho-physical preparation in civilian higher education establishments was observed by Pichyrin, Phylypei, Ostapenko [17, 18, 20, 23]. The issue of psychological improvement by means of physical preparation was examined in works of Malyar, Budny, 2010, and Salatenko, Dubinskaya, 2015 [12, 28]. The subject of improvement of cadets' psycho-physical condition in the process of professionally-applied physical preparation was studied by Gusak, Romanchyk, 2011; Romanchyk, Korol, Gavrylenko, Festryga, 2019 [3, 27]. Korzan, Smirnova, Pavlos, Zelikova, 2021, present an organizationally-methodical solution of providing cadets' PE coaches in higher education establishments

with the devices of distance-controlled technologies exercising influence on the state of students' psycho-physical functions [10].

The previous researchers established a positive influence of special physical preparation facilities on the fitness level of military personnel [5]. The actuality of our study is predetermined by the necessity of tackling the problem of cadets' psycho-physiological abilities and their improvement by means of Military-Sports All-round Competition (MSAC).

Materials and Methods

Participants

36 cadets of experimental group (EG) that engaged in MSAC section from the first course during two years and 95 cadets of control group (CG) that engaged the traditional system of physical preparation were involved in an experiment. The average age of servicemen at the beginning of the experiment was 17.7 years. Well-educated groups of cadets were tested for the absence of a significant difference in indexes of psycho-physiological abilities at the beginning of the experiment ($p > 0.05$). All the participants were informed about participating in the experiment and gave their consent.

Study organization

The research was conducted from September, 2017 till October, 2019, at the base of the Kharkiv National Ivan Kozhedyb Air Force University, and it focused on the determination of cadets' psycho-physiological abilities' dynamic indexes. The research tasks were solved by the following research methods: a theoretical analysis, systematization and generalization of scientifically-methodical sources and leading documents, a pedagogical experiment, psycho-diagnostic methods. The theoretical analysis, systematization and generalization of scientifically-methodical sources and leading documents were applied to analyze the information about MSAC features implemented in cadets' PE in higher military educational institutes. The pedagogical experiment was used to determine the influence of MSAC facilities on the indexes of psycho-physiological abilities of cadets.

From the total number of cadets who studied at the 4^{th} year of the university, a control and experimental group were selected. The control group was engaged in the traditional program of special physical training (SPT). The content of the SPT program of the experimental group consisted of aspects of MSAC, which can have a psychological impact on the personality of servicemen. Traditional and experimental SPT programs have the same number (2 per week) of training sessions of 90 minutes each, but their content is different. Instead of outdated ex-

ercises from the Soviet system of PT, the experimental SPT program included techniques and actions that are close to the specifics of military-professional activities: combat with weapons, combat without weapons, special actions of servicemen (shooting with air guns, 3000 m run with grenade throwing and shooting, 6 × 100 m run with a machine gun), swimming in a military uniform, diving and wrestling.

The pre-test – post-test method was used to determine the experimental SPT program influence on the cadets' psycho-physiological abilities. The psycho-diagnostic research methods included the determination of the following indexes by Byrdon-Anfimov method of a proof-reading test: speed of attention, attention concentration, mental capacity and the coefficient of mental productivity.

Statistical analysis

Statistical processing of the data was carried out on a computer using the standard STATISTICA 7.0 programs. Data were presented as means (X) and standard deviation (SD). The normality check of data was executed with the help of STATISTICA 7.0 programs using Distribution Fitting Module and Lilliefors test for normality. Also the homogeneity of variances of pre-post data was tested. The data were independent and normal. Therefore, a parametric test (i.e., the independent samples t-test) was used for analysis. During the study, the authenticity of difference between the indexes of the cadets from two groups was determined by means of Student's t test.

The significance for all statistical tests was set at $p < 0.05$. The dynamics of indexes in each group was also estimated. The percentage change was also calculated for both the experimental and the control group, using the equation: [(Meanpost-Meanpre)/ Meanpre] × 100.

Results

The results of determining the psycho-physiological abilities level development (Byrdon-Anfimov proof-reading test) and the dynamics of indicators of speed attention, attention concentration, mental capacity and the coefficient of mental productivity of cadets are presented in Table 1.

The analysis of indexes for psycho-physiological abilities of the cadets' representatives from two groups before the experiment witnessed the absence of reliable difference (Table 1).

The results for speed attention determination from two groups' representatives after the experiment demonstrate statistically reliable improvement of the index for the cadets of EG in relation to the CG at $p < 0.05$. The analysis of attention concentration changes of two groups after the experiment showed a

statistically reliable increase ($p < 0.05$) of that index for the EG representatives in comparison to the scores of the CG respondents. The comparative analysis of mental capacity of two cadet groups after the experiment demonstrated the index improvement for the EG representatives in relation to the CG. However, this difference is statistically reliable at $p > 0.05$. As for the coefficient of mental productivity, one could notice a statistically reliable ($p < 0.05$) improvement of scores after the experiment for the EG students in relation to the CG correspondents (Table 1).

Table 1. The cadets' psycho-physiological abilities' indexes during the experiment

№	Test		EG (n = 36)		CG (n = 95)		EG-CG Δ	Level of meaningfulness	
			X	SD	X	SD		t	p
1	Speed of attention, sign/c	Pre	4.45	0.17	4.36	0.18	0.09	0.47	p > 0.05
		Post	4.78	0.13	4.43	0.17	0.35	2.39	p < 0.001
		Pre-Post Δ	−0.33	0.14	−0.07	0.17	−0.26	9.31	p < 0.001
2	Attention concentration, point	Pre	344.25	26.08	334.31	17.40	9.94	3.61	p < 0.01
		Post	393.73	18.44	341.30	16.19	52.43	1.73	p > 0.01
		Pre-Post Δ	−49.48	21.67	−6.99	16.84	−42.49	10.61	p < 0.001
3	Mental capacity, sign/c	Pre	3.40	0.14	3.33	0.12	0.07	0.02	p > 0.05
		Post	3.81	0.12	3.65	0.12	0,16	0.01	p > 0.05
		Pre-Post Δ	−0.41	0.12	−0.32	0.12	−0.09	3.83	p < 0.001
4	Coefficient of the mental productivity, signs	Pre	1055.44	61.21	990.23	30.81	30.4	5.77	p < 0.001
		Post	1224.01	38.03	1129.74	18.03	20	2.67	p < 0.05
		Pre-Post Δ	−168.57	34.62	−139.51	26.07	−29.06	4.56	p < 0.001

Source: own research.

The result of the conducted experiment showed the improvement of the psycho-physiological abilities level of the EG representatives in relation to the CG respondents (EG-CG Δ%):

— speed of attention at 7.9% (the difference is statistically reliable);
— attention concentration at 15.4% (the difference is statistically reliable);
— mental capacity at 4.4% (the difference is not statistically reliable);
— the coefficient of mental productivity at 8.3% (the difference is statistically reliable).

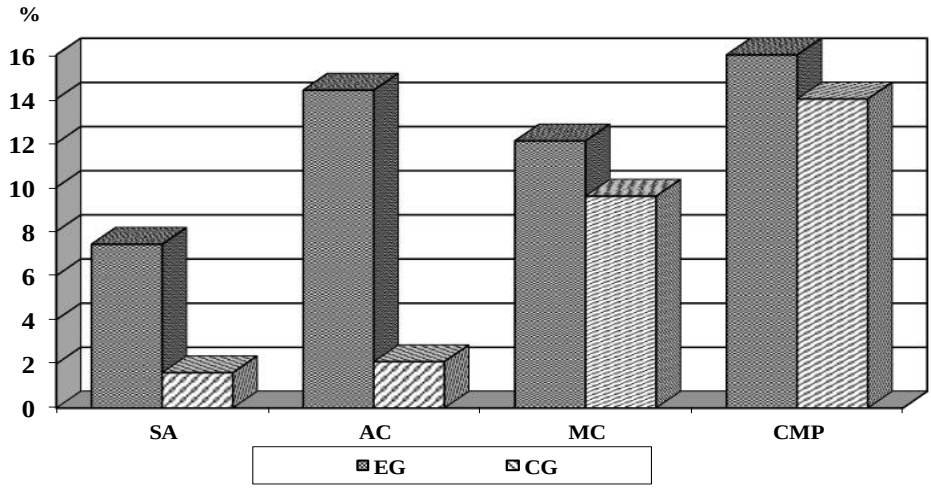

Figure 1. A diagram of psycho-physiological abilities indexes' changing during the experiment

Source: used the data obtained in the dissertation research by V. Otkydach.

For better visual demonstration of positive changes in the estimation of the cadets' psycho-physiological abilities, we presented the dynamics of indexes changing (intragroup differences Pre-Post Δ%) on a diagram (Fig. 1), where:
SA – speed of attention;
AC – attention concentration:
MC – mental capacity;
CMP – the coefficient of mental productivity

Discussion

Our research confirms the research of K. Prontenko, H. Hryban, A. Oderov and other scientists, who claim that the task of professional and applied physical training is not only to ensure physical fitness, but also to develop and improve basic psycho-physiological abilities complying with the profile of the future professional activity [13, 22]. Modern studies of military scientists [25, 29] have significantly expanded the concept of professionally important psycho-physiological abilities of military personnel. Professionally important abilities of military personnel are understood as integral psychological and psycho-physiological capabilities of the individual, as well as mental and psychomotor abilities that meet the requirements for the professional activity of a specific military specialist [26]. The results of our work are confirmed and coincide with the works of scientists such as M. Korchagin and O. Olkhovoy, according to whom [7] the main professionally important psycho-physiological abilities of military specialists-operators are the

functions of attention (speed of perception, concentration, stability) and the function of mental productivity. According to the assumptions of systemic psychophysiology, the function of attention is not an independent mental process, but it constitutes a component of a mechanism ensuring effective mental capacity. Attention is a selective orientation of perception towards a certain object. The concentration of mental efforts occurs at a certain moment in time, on a separate article (phenomenon) of objective or subjective reality. Attention, unlike other processes, does not have its own content, it is manifested in perception, thinking, imagination, translation and other mental processes. It is the dynamic description of the course of any mental activity that ensures the appropriate distribution of resources of the subject's information processing system. Our research confirms the conclusions of Kamaev, Gunchenko, Mulik and others (2018) about the positive impact of military exercises on the level of professionally important psychophysiological abilities of cadets of higher military educational institutions [4].

Conclusion

The results of the conducted experiment demonstrated the improvement of professionally important psycho-physiological abilities' indexes of the cadets of the experimental group in relation to the representatives of the control group: speeds of attention at 7.9% ($p < 0.05$), attention concentration at 15.4% ($p < 0.05$), mental capacity at 4.4% ($p > 0.05$), the coefficient of mental productivity at 8.3% ($p < 0.05$). This fact demonstrates the expedience of using MSAC facilities for the improvement of psycho-physiological abilities in higher military educational institutions.

STATEMENT OF ETHICS

This study was conducted in accordance with the World Medical Association Declaration of Helsinki. The study protocol was reviewed and approved by the Research Ethics Committee of the Lesya Ukrainka Volyn National University (20 June, 2022, Lutsk, Ukraine). All participants provided written informed consent to participate in this study.

DECLARATION OF CONFLICTING INTERESTS

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Część III

Uwarunkowania zdrowia, postawy prozdrowotne, jakość życia

UNIWERSYTET HUMANISTYCZNO-PRZYRODNICZY IM. JANA DŁUGOSZA W CZĘSTOCHOWIE
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The effect of 12-week step and floor aerobic exercise programs on physical and psychophysiological health parameters in obese men

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Wpływ 12-tygodniowych programów ćwiczeń aerobowych na fizyczne i psychofizjologiczne parametry zdrowotne otyłych mężczyzn

Streszczenie

Ćwiczenia aerobowe zalecane są w celu zapobiegania i kontrolowania nadwagi i otyłości. Niniejsze badanie miało na celu ocenę skuteczności dwóch 12-tygodniowych programów ćwiczeń aerobowych w poprawie stanu zdrowia fizycznego i psychofizjologicznego otyłych mężczyzn. Sześćdziesięciu dorosłych mężczyzn w średnim wieku 18,92 (SD 1,54 lat) i wskaźniku masy ciała (BMI) ≥ 30 kg/m^2 zostało losowo przydzielonych do trzech równych (n = 20) grup: trening aerobowy z wykorzystaniem stepów (SAET), trening aerobowy bez stepów (FAET) lub grupa kontrolna (która nie podejmowała aktywności fizycznej). Procedury treningowe SAET i FAET wykonywano trzy dni w tygodniu przez 12 tygodni. Wybrane parametry zdrowotne (fizyczne i psychofizjologiczne) oceniono na początku badania i po 12 tygodniach. Stwierdzono istotne różnice w zakresie parametrów zdrowia fizycznego i psychofizjologicznego u uczestników, którzy przeszli trening SAET i FAET w porównaniu z grupą kontrolną ($p < 0,05$). SAET i FAET okazały się pomocne w poprawie zdrowia fizycznego i psychicznego otyłych mężczyzn. Aby uzyskać lepsze perspektywy zdrowotne, szkoły i uczelnie wyższe powinny organizować sesje ćwiczeń aerobowych dla dorosłych.

Słowa kluczowe: aerobik, siła, wytrzymałość, ćwiczenia fizyczne, cholesterol.

Abstract

Aerobic exercise training is recommended to prevent and control obesity. The present study aimed to evaluate the effectiveness of a twelve-week step aerobics or floor aerobics exercise program in improving the physical and psychophysiological health of obese men. Sixty male adults of mean age 18.92 (SD 1.54 years) and Body Mass Index (BMI) ≥ 30 kg/m^2 were randomly allocated into three equal (n = 20) groups: Step Aerobics Exercise Training (SAET), Floor Aerobic Exercise Training (FAET), and a control group (which did not perform any exercise). The SAET and FAET training protocols were performed three days per week for 12 weeks. Health-related physical fitness, biochemical, physiological, and psychological variables were used as outcome measures and measured at baseline and at 12 weeks. There were significant differences in terms of physical and psychophysiological health parameters in participants who underwent SAET and FAET training compared with the control group ($p < 0.05$). SAET and FAET proved to be helpful in managing the physical and psychological health of obese adults. Schools and colleges should administer aerobic exercise sessions to adults for better health perspectives.

Keywords: aerobics, strength, endurance, physical exercise, cholesterol.

Introduction

Obesity is a chronic disease affecting food habits, exercise levels, and sleep schedules. Genetics, social factors of health, and the use of specific medications, all of them have an impact on body fat. Machines have changed human life and humans now enjoy a maximum level of physical comfort. Modern technology is

working hard to make our lives easier, more luxurious, and more pleasant while also reducing physical exertion. Consequently, humans are becoming increasingly inactive globally. People now ride instead of walking, sit instead of standing, and watch instead of participating. These lifestyle changes have reduced physical labor and increased mental stress and strain. As a result, it is critical to affect positive changes in today's lifestyles through involvement in sports and physical education programs. The development of physical fitness among the public or participants should be one of the major goals of every physical education and sports program. Physical education should try to make all child physically, cognitively, and emotionally healthy, as well as develop personal and social traits in them, allowing them to live happily with others and develop as good citizens. Consequently, an individual's physical fitness can be improved through a variety of programs or activities [7].

Obesity was once considered a developed world issue; nevertheless, its incidence is increasing in both developed and developing countries. It is a life-threatening condition caused by a sedentary lifestyle that affects millions of people in both developed and developing countries. Both obesity and overweight contribute the most to non-communicable disease morbidity and mortality [14]. In 2008, the World Health Organization estimated that over 1.4 billion adults were overweight, with more than half of them being obese [15]. According to the National Health and Nutrition Examination Survey, the prevalence of obesity was 39.6 percent among rural people in 2005–2008, compared to 33.4 percent among urban adults [1]. The prevalence of generalized obesity ranged from 11.8 percent to 33.6 percent among people in a recent ICMR-INDIAB study conducted in three Indian states: Tamil Nadu, Maharashtra, and Jharkhand, as well as in one Union Territory, Chandigarh [13]. The prevalence of obesity among Indian women has increased from 10.6% to 12.6 percent, according to a comparison of two major surveys conducted by the National Family Health Survey (NFHS-2) in 1998–1999 and NFHS-3 in 2005–2006 [5]. According to the Chennai Urban Rural Epidemiology Study, the age-standardized prevalence of generalized obesity is 45.9% [3].

Anaerobic exercise, which includes strength training and short-distance running, can be compared to aerobic exercise and fitness. The duration and intensity of muscular contractions as well as how energy is created within the muscle differ between the two types of exercise. Recent research on the endocrine functions of contracting muscles has found that both aerobic and anaerobic exercise promote the secretion of myokines, which has a variety of benefits, including new tissue growth, tissue repair, and anti-inflammatory functions, lowering the risk of developing inflammatory diseases. The quantity of muscle contraction, as well as the duration and severity of contractions, all influence myokine secretion. Count is used in floor aerobics. Floor aerobics was created to

eliminate the need for open-air exercise. Women took advantage of the opportunities presented to them daily. Many gyms and fitness facilities with a group workout program offer step-aerobic programs. Gin Miller introduced the concept of step aerobics in 1989. Gin visited an orthopaedic doctor after suffering a knee injury, who advised her to strengthen the muscles supporting the knee by stepping up and down on a milk crate, which she did, and from which she devised step aerobics [8]. The present study aimed to analyze the changes in physical and psychological health among obese adults after participating in 12 weeks of step-aerobic or floor-aerobic exercise protocols.

Methods

Participants and Study Design

Sixty obese male adults were recruited from the SRM Institute of Science and Technology (Kattankulathur, Tamil Nadu, India). The participants were randomly selected from various family backgrounds and participated in similar academic activities. The age range of the patients was 18–24 years. The following inclusion criteria were met by each participant for them to be part of this study: age of 18–24 years old, healthy sedentary obese men with a Body Mass Index (BMI) of ≥ 30 kg/m^2, and each participant had a sedentary lifestyle (less than 1 h of physical activity per week during the last year). The exclusion criteria were being female, having a BMI of less than 25–30 kg/m^2, undergoing any prior open surgery during the previous 8 months, having cardiovascular disease, and both the lower and upper extremities amputated. All the participants read and signed an informed consent form. Before the measurements started, the *SRM* Medical College Hospital and Research Centre (SRM CHRC, Kattankulathur, Tamil Nadu, India, Number 8484/IEC/2022) evaluated and approved the study procedures. The most recent revision of the Declaration of Helsinki was followed for all procedures.

Males with a BMI of 30 kg/m^2 or higher were considered obese for the purposes of this study. All participants were randomly divided into three groups, with 20 participants in each group: step aerobics exercise training (SAET), floor aerobics exercise training (FAET), and control group (CG). The aerobic and floor aerobic groups were subjected to respective exercises for 12 weeks, whereas the control group did not perform any exercise. Physical and psychological health were compared at baseline and endpoint in all groups. The requirements of the experimental procedures, testing, and exercise schedule were explained to the participants prior to the administration of the study to obtain full cooperation in the effort required on their part. The subjects completed training three

days a week, except for Saturdays and Sundays, from 6.30 to 7.30 a.m. The exercises were gradually introduced. A simple to complex procedure was used.

Outcome Measures

Health Related Physical Fitness Measures

Following a review of the literature and consultation with professionals and experts, the following variables were chosen as criteria for this study: cardiovascular endurance (CRE) was measured using Cooper's 12 Minute Run / Walk test [20]. Muscular flexibility (F) was measured through Sit and Reach test [21]. Muscular Strength (MS) was measured using push-ups [11]. Muscular Endurance (ME) was measured using the half-squat jump test [23]. Body Composition (BC) was calculated based on the following formula: percent body fat = 0.41563 x (sum of three sites) - 0.00112 x (sum of three sites) 2 + 0.36661 x (age) + 4.03653, where the sum of the three sites were skinfold caliber measures at the triceps, medial region of the navel part, and suprailium [22].

Physiological Measures

The vital capacity (VC) was measured using a Spirometer [6]. Resting Heart (RHR) rate was measured using a digital heart rate measuring machine (Model No. EW 243, National Company, Japan) [16]. Mean arterial blood pressure (MABP) was measured using systolic and diastolic blood pressure, as suggested by Mathews and Fox [4]. Breath-holding (BH) time was measured using a nose clip and a stopwatch, as suggested by Mathew [10]. Respiratory Rate (RR) was measured using a bio-monitor, as suggested by Saroja [19].

Biochemical Measures

To conduct a hematological analysis, blood was immediately transferred into tubes of Vacationer (Becton Dickinson, Rutherford, NJ, USA) with or without 0.1% EDTA as an anticoagulant. Serum and plasma were separated by centrifugation at 2500 rpm for 15 minutes at four °C, and the separated components were stored at 80°C until assessment. After sitting for 20 minutes, following a fast of 12-hour overnight, blood was taken from an antecubital vein between 7:00 and 9:00 a.m. at Week 0 and Week 12 for analysis. The sample size was 15 ml. Fasting glucose, total triglyceride levels (TG), total cholesterol (TC), high-density lipids (HDL), and low-density lipids (LDL) were examined using an automated biochemical analyzer and measured using standard laboratory methods [17].

Psychological Measures

Self-confidence (SC) scale used in the current study was to rate self-confidence levels within the selected sample using a 5-point Likert scale ranging from totally disagree (1) to totally agree (5), Emotional Adjustment (EA) was quantified using a 5-point Likert scale ranging from totally disagree (1) to totally agree (5). Assertiveness (A) 19-item scale version demonstrated good psychometric characteristic regarding reliability. Interpersonal Relationship (IR) 5-point scale ranged from "strongly agree" to "strongly disagree," and Stress Management (SM) was measured using Personality Development Index Questionnaire developed by Kaliappan [9].

Interventions

The investigator constructed a 12-week training schedule for FAET and SAET, with much focus on the progression of the training load. The FAET group was allotted to Experimental group I, SAET was allotted to Experimental group II, and another group called the control group was allotted no training except for their regular activities. The training period for the experimental groups was restricted to 12 weeks, thrice a week. The duration of each training session was 60 min, which included warm-up and cool-down. The investigator personally supervised and ensured the appropriate execution of training, along with assistance from a trained expert. The Floor Aerobic Exercise Training group performed for 60 minutes per session, 3 times per week for 12 weeks. Each session started with a 10-minute warm-up exercise for weeks 1–4 (32 counts, 8 sets), weeks 5–8 (32 counts, 10 sets), and weeks 9 – 12 (32 counts, 12 sets). The aerobic exercise training group performed for 60 min per session, 3 times per week for 12 weeks. For weeks 1- 4 (32 counts, 4 sets), weeks 5–8 (32 counts, 10 sets), and weeks 9 – 12 (32 counts, 12 sets), at the end of each training session, a 10-minute cool-down exercise was given.

Data analysis

Means and standard deviations (±) were used to describe all data, and Kolmogorov-Smirnov and Shapiro-Wilk tests were used to determine if the data were normal. We ensured that there was no significant difference between the groups. The intraclass correlations (ICCs) and test and retest accuracies for all tests were analyzed. The effects of exercise were also examined using a two-way analysis of variance (ANOVA) and repeated measurements (three groups, twice). If group-by-time connections were found to be important, Bonferroni post-hoc tests were performed. Statistical significance was set at $p<0.05$.

Results

There were no significant differences ($p > 0.05$) in any baseline parameters between groups (Table 1).

Table 1. Participant characteristics (mean ± SD)

Characteristics	SAET	FAET	CG
Age (years)	18.41 ± 1.61	18.72 ± 1.92	18.89 ± 1.40
Height (cm)	170.5 ± 4.51	172.8 ± 4.69	173.4 ± 5.19
Weight (kg)	88.26 ± 4.30	88.60 ± 5.49	90.20 ± 6.10
BMI (kg/m^2)	30.10 ± 1.11	30.00 ± 1.30	30.20 ± 1.41

SD: Standard Deviation; BMI: Body Mass Index; SAET: Step Aerobics Exercise Training; FAET: Floor Aerobic Exercise Training; CG: Control Group.

Health Related Physical fitness

The main influence of time on some outcomes has been found to be CRE ($F = 27.37$, $\eta p^2 = 0.32$, power value: 0.99, $p < 0.001$), MS ($F = 31.27$, $\eta p^2 = 0.35$, power value: 0.99, $p < 0.001$), ME ($F = 56.35$, $\eta p^2 = 0.49$, power value: 0.99, $p < 0.001$), Flex ($F = 1.40$, $\eta p^2 = 0.71$, power value: 0.99, $p < 0.001$), and BC ($F = 35.95$, $\eta p^2 = 0.38$, power value: 0.99, $p < 0.001$). Significant group (three) and time (pre and post) interactions were seen for CRE ($F = 2.67$, $\eta p^2 = 0.09$, power = 0.51, $p = 0.08$), MS ($F = 0.67$, $\eta p^2 = 0.23$, power value: 0.15, $p = 0.51$), ME ($F = 6.90$, $\eta p^2 = 0.19$, power value: 0.99, $p < 0.002$), Flex ($F = 11.82$, $\eta p^2 = 0.29$, power value: 0.99, $p < 0.001$), and BC ($F = 2.06$, $\eta p^2 = 0.07$, power value: 0.40, $p = 0.14$).

A post-hoc analysis showed considerable pre-to-post improvement ($p < 0.001$) in both step aerobic exercise training and floor aerobic exercise training for cardiorespiratory endurance ($\eta p^2 = 0.07$; $\eta p^2 = 0.20$, respectively), muscular strength ($\eta p^2 = 0.08$; $\eta p^2 = 0.15$, respectively), and muscular endurance ($\eta p^2 = 0.04$; $\eta p^2 = 0.12$, respectively) compared to the control group. The post-hoc analysis showed a considerable pre-to-post decrease ($p < 0.001$) in both step aerobic exercise training and floor aerobic exercise training for body composition ($\eta p^2 = 0.04$; $\eta p^2 = 0.14$, respectively) compared to the control group. The participants engaged in step aerobics aerobic training and floor aerobics aerobic fitness showed no significant improvement in any of the training protocols tested in terms of cardiovascular endurance, muscular endurance, muscular strength flexibility, or body composition, whereas the control group showed no significant improvement in any of the training protocols tested (Table 2).

Table 2. Mean (± SD) values of health-related physical fitness parameters for the three groups

Variables	Group	Before	After	Partial eta-squared (ηp^2)		
				Main effect group	Main effect time	Interaction group x time
CRE (ml/kg/min)	SAET	28.89 ± 2.13	30.95 ± 1.09 [ac]	0.06 (p = 0.16)	0.32 (p < 0.001)	0.09 (p = 0.08)
	FAET	28.58 ± 0.84	30.54 ± 1.01 [a]			
	CG	28.97 ± 2.15	29.54 ± 1.64			
MS (numbers)	SAET	19.10 ± 1.37	20.45 ± 1.43 [a]	0.03 (p = 0.40)	0.35 (p < 0.001)	0.02 (p = 0.52)
	FAET	19.15 ± 2.18	20.90 ± 1.41 [ac]			
	CG	18.90 ± 1.86	19.95 ± 1.76			
ME (numbers)	SAET	22.85 ± 2.30	25.40 ± 1.27 [ac]	0.01 (p = 0.80)	0.50 (p < 0.001)	0.19 (p = 0.002)
	FAET	22.95 ± 1.82	25.00 ± 1.16 [a]			
	CG	23.55 ± 1.63	24.10 ± 1.51			
F (cm)	SAET	22.85 ± 1.75	24.85 ± 1.26 [ac]	0.03 (p = 0.37)	0.79 (p < 0.001)	0.41 (p < 0.001)
	FAET	22.00 ± 2.55	24.25 ± 1.99 [a]			
	CG	22.80 ± 1.90	23.45 ± 1.70			
BC (%)	SAETG	39.33 ± 0.35	38.67 ± 0.60 [a]	0.05 (p = 0.24)	0.39 (p < 0.001)	0.07 (p = 0.14)
	FAETG	39.33 ± 0.61	38.72 ± 0.72 [a]			
	CG	39.33 ± 0.15	39.06 ± 0.43			

SAET: Step Aerobics Exercise Training; FAET: Floor Aerobic Exercise Training; CG: Control Group; CRE: Cardiorespiratory Endurance; MS: Muscular Strength; ME: Muscular Endurance; F: Flexibility; BC: Body Composition; [a]significant difference before and after the intervention; [c]significant interaction between SAET and FAET.

Physiological variables

The main influence of time on some outcomes have been found to be VC (F = 1.84, ηp^2 = 0.76, power value: 0.99, p<0.001), RHR (F = 91.30, ηp^2 = 0.61, power value: 0.99, p < 0.001), MABP (F = 0.01, ηp^2 = 0.88, power value: 0.50, p = 0.982), BHT (F = 73.55, ηp^2 = 0.56, power value: 0.99, p < 0.001), RR, (F = 21.51, ηp^2 = 0.27, power value: 0.99, p < 0.001). Significant group (three) and time (pre and post) interactions were seen for VC (F = 18.33, ηp^2 = 0.39, power = 0.51, p < 0.001), RHR (F = 9.60, ηp^2 = 0.25, power = 0.97, p < 0.001), MABP (F = 1.87, ηp^2 = 0.19, power = 0.62, p = 0.163), BHR (F = 4.90, ηp^2 = 0.14, power = 0.78, p < 0.011), RR (F = 4.58, ηp^2 = 0.14, power = 0.75, p = 0.014).

A post-hoc analysis showed a considerable pre-to-post decrease (p < 0.001 value) in both step aerobic exercise training and floor aerobic exercise training for resting heart rate (ηp^2 = 0.08; ηp^2 = 0.16, respectively), and respiratory rate (ηp^2 = 0.07; ηp^2 = 0.18, respectively) compared to the control group. The post-hoc analysis showed a considerable pre-to-post improvedment (p < 0.001 value)

in both step aerobic exercise training and floor aerobic exercise training for breath holding time ($\eta p^2 = 0.04$; $\eta p^2 = 0.11$, respectively) compared to the control group. No training protocols showed significant improvement in vital capacity, breath-holding time, and decreased resting heart rate, mean arterial blood pressure, and respiratory rate in participants performing step aerobics exercise training and floor aerobics exercise training, whereas no significant improvement was observed in the control group (Table 3).

Table 3. Mean (± SD) values of the physiological parameters in the three groups

Variables	Group	Before	After	Partial eta-squared (ηp^2)		
				Main effect group	Main effect time	Interaction group x time
VC (mL)	SAETG	3.07 ± 275.48	3.32 ± 228.49 [ac]	0.63 (p = 0.02)	0.76 (p < 0.001)	0.39 (p < 0.001)
	FAETG	3.07 ± 233.73	3.29 ± 217.40 [a]			
	CG	3.07 ± 451.16	3.14 ± 425.99			
RHR (bpm)	SAETG	75.20 ± 3.73	72.40 ± 3.31 [ac]	0.28 (p = 0.04)	0.61 (p < 0.001)	0.25 (p < 0.001)
	FAETG	75.25 ± 1.77	73.30 ± 2.69 [a]			
	CG	75.65 ± 3.01	74.90 ± 3.50			
MABP (mmHg)	SAETG	97.92 ± 2.61	96.76 ± 2.36 [ac]	0.71 (p = 0.01)	0.98 (p < 0.001)	0.16 (p = 0.06)
	FAETG	97.97 ± 2.59	97.87 ± 2.44 [a]			
	CG	97.16 ± 3.45	98.46 ± 4.57			
BHT (s)	SAETG	36.35 ± 3.03	38.40 ± 3.03 [a]	0.79 (p = 0.01)	0.56 (p < 0.001)	0.15 (p < 0.01)
	FAETG	36.90 ± 4.37	39.20 ± 3.86 [ac]			
	CG	36.95 ± 3.97	37.80 ± 3.83			
RR (numbers)	SAETG	17.00 ± 1.48	16.15 ± 1.26 [a]	0.44 (p = 0.02)	0.27 (p < 0.001)	0.14 (p = 0.014)
	FAETG	17.10 ± 1.11	16.15 ± 0.93 [a]			
	CG	17.00 ± 1.29	16.95 ± 0.94			

SAET: Step Aerobics Exercise Training; FAET: Floor Aerobic Exercise Training; CG: Control Group; VC: Vital Capacity; RHR: Resting Heart Rate; MABP: Mean Arterial Blood Pressure; BHR: Breath Holding Time; RR: Respiratory Rate; [s]significant difference before and after the intervention; [c]significant interaction between SAET and FAET.

Biochemical variables

The main influences of time on some outcomes have been found to be HDL (F = 30.82, ηp^2 = 0.35, power value: 0.99, p < 0.001), LDL (F = 1.66, ηp^2 = 0.74, power value: 0.99, p < 0.001), TC (F = 3.82, ηp^2 = 0.63, power value: 0.48, p = 0.056), TG (F = 7.27, ηp^2 = 0.11, power value: 0.75, p = 0.009). Significant group (three) and time (pre and post) interactions were seen for HDL (F = 1.21, ηp^2 = 0.41, power = 0.25, p = 0.304), LDL (F = 25.11, ηp^2 = 0.46, power = 0.99,

$p < 0.001$), TC ($F = 3.51$, $\eta p^2 = 0.11$, power = 0.63, $p = 0.036$), TG ($F = 0.88$, $\eta p^2 = 0.30$, power = 0.78, $p = 0.417$).

A post-hoc analysis showed considerable pre-to-post improvement ($p < 0.001$ value) in both step aerobic exercise training and floor aerobic exercise training for high density lipoprotein ($\eta p^2 = 0.05$; $\eta p^2 = 0.14$, respectively) compared to the control group. The post-hoc analysis showed a considerable pre-to-post decrease ($p < 0.001$ value) in both step aerobic exercise training and floor aerobic exercise training for total cholesterol ($\eta p^2 = 0.09$; $\eta p^2 = 0.18$, respectively) and triglycerides ($\eta p^2 = 0.07$; $\eta p^2 = 0.19$, respectively) compared to the control group. The participants who engaged in step aerobics activity and floor aerobics exercise training both showed no significant improvement in any of the training protocols when it came to highly dense lipoprotein, decreased low density lipoprotein, lipid profile, and triglycerides, while no significant improvement was seen in the control group (Table 4).

Table 4. Mean (± SD) values of the biochemical parameters in the three groups

Variables	Group	Before	After	Partial eta-squared (ηp^2)		
				Main effect group	Main effect time	Interaction group x time
HDL (mg/dl)	SAETG	53.95 ± 3.83	55.60 ± 2.13 [a]	0.02 ($p = 0.58$)	0.35 ($p < 0.001$)	0.04 ($p = 0.30$)
	FAETG	52.60 ± 3.06	55.80 ± 2.06 [a]			
	CG	53.85 ± 2.96	55.95 ± 2.08			
LDL (mg/dl)	SAETG	123.78 ± 6.04	120.94 ± 5.63 [a]	0.04 ($p = 0.89$)	0.74 ($p < 0.001$)	0.47 ($p < 0.001$)
	FAETG	123.96 ± 3.86	120.62 ± 3.51 [a]			
	CG	123.49 ± 9.98	122.96 ± 10.37			
TC (mg/dl)	SAETG	214.65 ± 5.19	212.70 ± 4.89 [a]	0.04 ($p = 0.89$)	0.06 ($p = 0.056$)	0.110 ($p = 0.04$)
	FAETG	215.74 ± 5.93	212.85 ± 5.92 [a]			
	CG	214.12 ± 6.83	215.20 ± 11.57			
TG (mg/dl)	SAETG	181.52 ± 11.31	179.30 ± 10.23 [a]	0.008 ($p = 0.79$)	0.11 ($p = 0.009$)	0.03 ($p = 0.42$)
	FAETG	183.88 ± 7.88	180.20 ± 10.09 [a]			
	CG	180.35 ± 11.79	179.42 ± 13.45			

SAET: Step Aerobics Exercise Training; FAET: Floor Aerobic Exercise Training; CG: Control Group; HDL: High Density Lipoprotein; LDL: Low Density Lipoprotein; TC: Total Cholesterol; TG: Triglycerides; [a]significant difference before and after the intervention.

Psychological variables

The main influences of time on some outcomes have been found to be SC ($F = 24.80$, $\eta p^2 = 0.42$, power value: 0.99, $p < 0.001$), EA ($F = 1.66$, $\eta p^2 = 0.74$, power value: 0.99, $p < 0.001$), A ($F = 3.82$, $\eta p^2 = 0.63$, power value: 0.48,

p = 0.056), IR (F = 7.27, ηp^2 = 0.11, power value: 0.75, p = 0.009). Significant group (three) and time (pre and post) interactions were seen for SC (F = 1.21, ηp^2 = 0.41, power value: 0.25, p = 0.304), EA (F = 25.11, ηp^2 = 0.46, power value: 0.99, p < 0.001), A (F = 3.51, ηp^2 = 0.11, power value: 0.63, p = 0.036), IR (F = 0.88, ηp^2 = 0.30, power value: 0.78, p = 0.417).

A post-hoc analysis showed considerable pre-to-post improvement (p < 0.001 value) in both step aerobic exercise training and floor aerobic exercise training for self-confidence (ηp^2 = 0.05; ηp^2 = 0.14, respectively) compared to the control group. The post-hoc analysis showed a considerable pre-to-post decrease (p<0.001 value) in both step aerobic exercise training and floor aerobic exercise training for assertiveness (ηp^2 = 0.09; ηp^2 = 0.18, respectively) and interpersonal relationships (ηp^2 = 0.07; ηp^2 = 0.19, respectively) compared to the control group. The participants who engaged in both step aerobics activity and floor aerobics exercise training showed no significant improvement in any of the training protocols in terms of self-confidence, decreased emotional adjustment, psychological profile, interpersonal relationships, and stress management, while no significant improvement was seen in the control group (Table 5).

Table 5. Mean (± SD) values of psychological parameters in the three groups

Variables	Group	Before	After	Partial eta-squared (ηp^2)		
				Main effect group	Main effect time	Interaction group x time
SC (scores)	SAETG	21.22 ± 1.41	22.16 ± 1.80 [a]	0.02 (p = 0.67)	0.421 (p<0.001)	0.04 (p = 0.310)
	FAETG	20.60 ± 1.82	21.23 ± 1.20 [a]			
	CG	21.86 ± 1.16	21.40 ± 1.45			
EA (scores)	SAETG	46.52 ± 4.31	47.10 ± 1.35 [a]	0.04 (p = 0.84)	0.654 (p <0.001)	0.51 (p<0.001)
	FAETG	45.17 ± 4.15	46.23 ± 2.34 [a]			
	CG	45.70 ± 3.50	45.14 ± 1.30			
A (scores)	SAETG	23.17 ± 2.40	24.40 ± 4.89 [a]	0.05 (p = 0.87)	0.06 (p = 0.06)	0.21 (p = 0.04)
	FAETG	22.43 ± 1.19	23.18 ± 2.80 [a]			
	CG	23.10 ± 1.10	23.10 ± 1.15			
IR (scores)	SAETG	21.34 ± 3.46	22.32 ± 2.14 [a]	0.08 (p = 0.78)	0.11 (p = 0.09)	0.03 (p = 0.42)
	FAETG	20.16 ± 2.31	21.34 ± 1.42 [a]			
	CG	20.35 ± 3.40	20.96 ± 2.17			
SM (scores)	SAETG	35.19 ± 2.15	36.23 ± 3.16	0.06 (p = 0.85)	0.065 (p = 0.06)	0.13 (p = 0.036)
	FAETG	34.16 ± 1.75	35.16 ± 4.40			
	CG	35.80 ± 1.10	34.12 ± 2.34			

SAET: Step Aerobics Exercise Training; FAET: Floor Aerobic Exercise Training; CG: Control Group; SC: Self-Confidence; EA: Emotional Adjustment; A: Assertiveness; IR: Interpersonal Relationship; SM: Stress Management; [a]significant difference before and after the intervention.

Discussion

The main finding of this study was that different aerobic training exercises had various positive effects on physical strength and physiological and biochemical parameters in obese men. After 16 weeks of a randomized control trial undertaking aerobic and resistance training intervention, it was shown to improve the quality of life and physical fitness of obese and overweight cancer patients [24]. These results were consistent with previous studies showing that VO2 max improved [25,26] and that HIIT exercise could reduce resting heart rate in children with obesity [27]. Another previous study showed that 12 weeks of isolated and combined randomized control trials undertaking aerobic, resistance, and combined training showed that overweight and obese adults had considerably improved body percentage of fat and cardiorespiratory fitness [28]. Exercise intervention at 16 weeks follow up MLIP has been suggested to improve physical fitness and body composition in adolescents and obese children [29]. In the present study, we found a significant improvement in selected health-related physical fitness parameters after 12 weeks of aerobic exercise training. Importantly, a reduction in body composition study reported that eight weeks of HIIT aerobic exercise intervention improved the quality of life of patients [30].

Our study findings agree with those of previous studies showing a decrease in blood pressure after 12 weeks of combined exercise training in young obese pre-hypertensive men [31]. Our data indicate that breath-holding time and respiratory rate were significantly enhanced after 12 weeks of intervention in the current study. This may follow another mechanism that effectively improves breath-holding time and respiratory rate due to neuromuscular training intervention [32].

The findings of this study are in line with related studies suggesting that aquatic exercise has a beneficial effect on forced vital capacity [33]. Komathi and Indira previously investigated the effects of step aerobics, floor aerobics, and combination exercises on biochemical variables and psychology in female students [34]. After undertaking floor aerobic exercise for a period of 12 weeks, it was shown that female students showed considerable improvement in all selected biochemical and psychological parameters. After participating in step aerobics for a period of twelve weeks, female students showed significant improvements in all selected biochemical and psychological variables. Women in the combined training group performed better on biochemical variables than did those in the other groups. Similar outcomes were obtained in the present study, in which the biochemical profile of obese male adults was found to improve after twelve-week intervention of steps or floor aerobics. Clary et al. examined the effects of ballate, walking on balance, and step aerobics in women aged 50–75 years. Compared to the Ballates program, walking programs and step aerobics

result in improved static balance and postural stability [3]. In our study, similar results were obtained in steps aerobics and floor aerobics. Melam et al. examined the effects of aerobics and brisk walking in overweight individuals. For ten weeks, this program was carried out five days a week [18]. Body mass index, hip and waist circumference, and the thickness of the skinfolds in the abdomen, subscapular region, biceps, and triceps were measured in all three categories before and after the experiment. All values fell in women who performed 10 weeks of brisk walking and aerobics. In the present study, body composition was found to be significantly improved among adult obese male after 12 weeks of aerobic exercise. Maiyanga and Gunen investigated the effect of step aerobics on percentage of body fat and visceral fat in obese female nurses in Bauchi's specialty hospital and discovered that step aerobics reduced percentage body fat [19].

Limitations

Being pilot in nature, the present study has several limitations that suggest a lacune on which future studies could be conducted. One limitation of this study is that we only included male participants in the current study. Obesity is also prevalent in females; therefore, future studies should be conducted with female participants. Another limitation of the study is that it focused on specific age groups, and future studies could be conducted by considering all age groups. This will help validate the results of the current study for all age groups. Another limitation of this study was the sample size. Because the sample size of the present study was small, the results of the present study cannot be validated for the general population. Moreover, the present study was a single-centric study, and future studies using a multicentric approach should be conducted to determine the role of aerobic exercise in the management of obesity among adults.

Conclusion

The present study revealed significant improvement in adult obesity in terms of body composition, muscular strength and endurance, cardiovascular and respiratory parameters, biochemical parameters, and psychological domains after practising steps and floor aerobics. Aerobic exercise proved to be helpful in managing the physical and psychological health of obese adults. It is recommended that schools and colleges administer aerobic exercise sessions to adults for better health perspectives.

STATEMENT OF ETHICS

This study was conducted in accordance with the World Medical Association Declaration of Helsinki. The study protocol was reviewed and approved by the SRM Medical College Hospital and Research Centre (SRM CHRC, Kattankulathur, Tamil Nadu, India, Number 8484/IEC/2022). All participants provided written informed consent to participate in this study.

DECLARATION OF CONFLICTING INTERESTS

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Effectiveness of various physical activity programs in increasing functional capabilities of young females

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Skuteczność różnych programów aktywności fizycznej w zwiększaniu funkcjonalności młodych kobiet

Streszczenie

Możliwości funkcjonalne są istotne dla funkcjonowania zawodowego oficerów, zwłaszcza młodych oficerek. Konieczne jest poszukiwanie najskuteczniejszych programów aktywności fizycznej

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poprawiających możliwości funkcjonalne. Dlatego niniejsze badanie miało na celu porównanie skuteczności dwóch programów aktywności fizycznej młodych kobiet podczas pierwszego roku szkolenia w akademii wojskowej. W badaniu wzięło udział łącznie 129 młodych kobiet w wieku 17–18 lat. Do grupy eksperymentalnej włączono 21 uczestniczek, do kontrolnej zaś 108. Każda grupa różniła się interwencją związaną z aktywnością fizyczną stosowaną w ciągu roku nauki. Do pomiaru efektywności interwencji zastosowano pomiar tętna (HR), ciśnienia krwi (BP), wskaźnik pojemności życiowej (VCI), siłę izometryczną (IMIS), wskaźnik testu Ruffiera (RTI) i wskaźnik Robinsona (RI). Wszystkie badane parametry fizjologiczne uległy poprawie w obu grupach, jednakże grupa eksperymentalna osiągnęła znacznie większą poprawę niż grupa kontrolna w pięciu z ośmiu parametrów (HR, 4,5%; VCI, 15,4%; IMIS, 12,6%; RTI, 16,9%; RI, 5,0%). Podsumowując, w grupie eksperymentalnej zastosowana interwencja zapewniła bardziej znaczącą poprawę możliwości funkcjonalnych. Wskazane jest wykorzystanie opracowanego modelu w praktyce aktywności fizycznej podchorążych podczas szkolenia w akademii wojskowej w celu poprawy ich możliwości funkcjonalnych.

Słowa kluczowe: aktywność fizyczna, parametry doświadczenia, kadetki, cechy funkcjonalne.

Abstract

Functional capabilities are important for professional activities of officers, especially young female officers. It is necessary to identify the most effective physical activity programs to improve functional capabilities. Therefore, this study aimed to compare the effectiveness of two physical activity programs for young females during their first year of training at a military academy. A total of 129 young females aged 17–18 participated in this study. Twenty-one and 108 charges were included in the experimental and control groups, respectively. Each group differed in terms of the physical activity interventions used during the year of learning. The outcome measures included heart rate (HR), blood pressure (BP), vital capacity index (VCI), isometric strength (IMIS), Ruffier test index (RTI) and Robinson index (RI). All studied physiological parameters improved in both groups; however, the experimental group achieved a significantly higher improvement than the control one in five of the eight parameters (HR, 4.5%; VCI, 15.4%; IMIS, 12.6%; RTI, 16.9%; RI, 5.0%). In conclusion, the intervention used in the experimental group provided a more significant improvement in functional capabilities. It is advisable to use the developed model in the practice of cadets' physical activity during training at a military academy to improve their functional capabilities.

Keywords: physical activity, experiment parameters, cadets, functional features.

Introduction

Preparing young females for professional activities that take place in military academies involves large amounts of physical activity [20]. This feature is typical not only for military academies of Ukraine but also for the educational institutions of countries whose armies are members of the North Atlantic Alliance [4, 11, 18, 28]. This applies to both male and female cadets [14, 16]. They use physical activity to perform different tasks. In particular, this applies to maintaining health, preventing overload and harmful effects of physical activity during various professional tasks [1, 11, 18]. Low levels of physical activity also lead to prob-

lems with cadets' annual physical tests and their level of physical fitness [24, 25]. In connection with this, the paper focuses on finding new approaches to the organization, formation of the physical activity content of young females, and its implementation in various forms during their studies at the Military Academy [13, 26].

It is also important to positively influence the indicators of physical fitness, the functionality of cadets, and servicemen for the successful performance of professional tasks [8, 21]. In particular, these authors recommended paying more attention to the development of functional capabilities of the muscular system, namely concentrating on the development of muscle groups of the upper extremities and strength endurance in a dynamic mode. One of the leading reasons for increased attention to the study of functional capabilities is that they are an important component of an individual's willingness to perform professional tasks, which determine the military [19, 23, 29, 30]. Therefore, it is particularly important to consider the physiological features that characterize male and female bodies [9, 15, 31, 33]. Such knowledge helps to increase efficiency in solving various professional tasks and establishes the risk degree of harm to the body during training and physical activity [8, 11]. In connection with the latter, it is important to know the influence of different parameters of physical activity on the physiological characteristics of young females during their studies at the military academy. Therefore, the purpose of this study was to compare the effectiveness of two physical activity programs used to increase the functional capabilities of young females during the first year of training at a military academy.

Materials and Methods

Participants

The subjects of the study were the physiological parameters of young females who used various physical activity programs during their first year of training at the military academy. A total of 129 young females participated in this study. Of these, 21 young females were included in the experimental group (E), and the remaining 108 were included in the control group (C). Group E included young females who started studying at the academy in Lviv (Ukraine) at the beginning of this study. Group C consisted of young females who started studying at the academy in Lviv (40 participants), Khmelnytskyi, Ukraine (37 participants), and Zhytomyr, Ukraine (31 participants) one year earlier. Groups E and C were formed based on the results of random sampling. For all young females who fulfilled the criteria of "age", namely, it had to be in the range from 17 years and

3 months to 18 years and 5 months, the indicated number of young females was chosen.

Study Protocol and Interventions

The study included a comparison of the young females' results after using different physical activity programs during their spare time. In group E, such a program included: in September, 12 lessons of 60 minutes each, in October – 13 lessons of 75 minutes, and from November to June – 3 lessons of 90 minutes each week. Such an approach is necessary to ensure a gradual increase in physical load against the background of adaptation of the body to the previous load [31, 32, 34]. The preparatory part of the 60-minute class lasted 5–11 minutes, namely: in the first and second classes it was 11 minutes, in the next two – 10 minutes, then in the following two – 9 minutes, etc.; in the eleventh lesson, the duration was 6 minutes, in the twelfth – 5 minutes. Simultaneously, with each new decrease in the duration of the preparatory part, the length of the main part increased by the same amount within 45–50 minutes. The final part of such classes was practically the same and lasted for 4–5 minutes. An increase in time was required for the coach to provide the necessary recommendations. The physical load parameters during the 5- and 4-minute final parts did not differ.

The preparatory part of the classes held in October (75-minute class) was 7–12 minutes long. A gradual decrease in the time of the preparatory part and an increase in the time of the main part by a similar amount occurred in the same way as during the 60-minute classes; this part lasted from 57 to 61 minutes. The final part of such classes was practically the same and lasted for 6–7 minutes.

Regarding classes in November, which lasted 90 minutes, the preparatory part took from 15 to 20 minutes, the main one took from 62 to 65 minutes, and the final part took from 8 to 10 minutes. The duration of the preparatory and main parts was changed on the same basis as during the 60- and 75-minute classes. For the "December-May" period, each 90-minute class included 15 minutes for the preparatory part, 67 for the main part, and 8 for the final.

The preparatory part of the training in group E consisted of walking, running at a slow pace, and a set of exercises (two exercises each for the muscles of the upper limbs, trunk, and lower limbs). Exercises and dosages corresponded to those recommended by special documents [20] and researchers [7, 8, 12, 32]. Thus, in September, 60-minute classes were held, and walking and running were performed for 5 minutes during the first six training sessions. An execution of set exercises was reduced from 6 to 4 minutes. There were six exercises like that, the performance of each – 8 repeated maximums and the rest of them took place during the transition of the young females from one exercise to another. The duration of the complex performance was reduced owing to the increase in

the pace of each exercise as a result of adaptation to the load. During the seventh and eighth classes, 8 minutes of the preparatory part were performed as follows: 3 – running at a slow pace, but with an increase in speed by 15% compared to that used in the previous classes; 5 minutes to perform the same exercises for eight repeated maximums, but with a 10% decrease compared to that used in previous classes. During the ninth-tenth 60-minute classes, walking and running were performed for 3 minutes, throughout the eleventh class – 2, during the last twelfth class – one; the set of exercises in all these classes was performed for 4 minutes.

In October, when the girls had 75-minute classes, walking and running were used for 5 minutes during the first six. The time for performing a complex of exercises was reduced: the first and second class – 6 minutes, the third-fourth – 5 minutes, the fifth-sixth – 4. The number of exercises was the same as in September training, but the dosage of each was increased to 10 repeated maximums as a result of adaptation. Starting from the seventh class, the set of exercise workouts was performed for five minutes, and the duration of walking and running was reduced, but at the same time, the speed of their performance increased. Thus, during the seventh and eighth classes of the 9-minute preparatory part, the young females walked and ran for 4 minutes, throughout the ninth and tenth – 3 minutes, and the eleventh to thirteenth 75-minute classes – 2.

In November, when the young females started using 90-minute sessions, the first six walks and runs lasted 6 minutes. The time for performing an exercise complex decreased: the first and second classes – 14 minutes, the third and fourth – 13 minutes, the fifth and sixth ones – 12. The number of exercises was increased to nine (two for the muscles of the upper limbs, four for the trunk, and three for the muscles of the lower limbs), and the dosage was increased to 12 repeated maximums. Starting from the seventh workout, the set of exercises was performed for 12 minutes, the duration of walking and running was reduced, but the speed of their performance – increased. Therefore, in the seventh and eighth 17-minute lessons, during the preparatory part, the young females walked and ran for 5 minutes, during the ninth and tenth 16-minute lessons – 4, and during the eleventh and twelfth 15-minute lessons – 3.

The content of the main part of the training in Group E was aimed at increasing the functional capabilities of young females during the first year of training at the military academy. This result was evidenced by the improvement in the physiological parameters to the highest possible level. In this regard, the basic amount of load in the physical activity program of group E ensured a heart rate (HR) of 150-170 bpm-1. To achieve these various variants of Body Workout fitness training, adaptation was taken into account. So, during the 60-minute classes that took place during the first (September) month of training at the academy, it was the “26 Mins Full Body Aerobic Workout” option. During the 75-

minute classes (October), the girls used the "45 Mins Full Body Aerobic Workout", and during the 90-minute classes in November – the "60 Mins Full Body Aerobic Workout". Specifying the load parameters, we note that during the first six 60-minute classes, the main part involved the performance by all young females of a series combining 40 hand movements, both hands, and feet (mostly). In the first two and the third exercise set, each one of the movements was performed with the following number of repeated maximums: the first two exercises – 8 and 12, respectively, the third and fourth exercise – 10 and 15, the fifth and sixth exercise – 12 and 18. There was a rest between the execution of these exercise sets, which lasted, depending on the rate of HR recovery, from 45 to 60 seconds.

During the seventh lesson, the girls performed 50 movements with the upper limbs, 40 with the legs, and 40 with both legs and hands; during the eighth lesson, 50, 50, and 40 movements, respectively; and during the ninth lesson, 50 movements were performed in each specified complex. At the same time, in all these classes, the number of repeated maximums of each movement was as follows: in the complex of hand movements, with the simultaneous involvement of arms and legs – 8 each, whereas in the complex of leg movements – 12. In the next classes, each specified complex involved the performance of 50 movements, the number of repeated maximums as follows: the tenth lesson – in a complex of hand movements, with simultaneous involvement of arms and legs – 8 each, in a complex of leg movements – 12; the eleventh lesson – 10 and 15, respectively, the twelfth lesson – 12 and 18. There was no rest between the sets of movements.

During all 75-minute classes, the young females in group E performed two series, each of which combined a complex of movements with hands, simultaneously with hands and legs (mainly). Other dosing parameters were the same as those in the previous sessions, except for the length of the rest between the two sets. Such a rest was aimed at almost complete recovery of HR, which lasted up to 120 seconds.

During November 90-minute classes, the young females of group E performed three series, and during the other 90-minute classes (December-May) – four series; each combined a set of movements with hands, simultaneously with hands and feet, mostly with feet. Other dosage parameters were the same as those in the previous sessions, except for the duration of the rest between these sets. Thus, with three series, the duration of the rest was as follows: after the first series, 90 s; after the second, 120 s. With four series, the length of the rest was as follows: after the first – 90 seconds, after the second – 110 seconds, after the third – 120 s; in the last week of each month, the rest after each series was reduced by 10 seconds. Exercises specified by the physical education curriculum at the military academy were widely used here [20]. These were gymnastics,

track and field exercises, elements of swimming, exercises for movement on skis, hand-to-hand combat, overcoming an obstacle course, and sports games, most of them were also performed with additional weights (dumbbells 1–1.5 kg, rubber band).

In the final part of each 60-minute session, the girls in group E performed one or two exercises to relax the muscle groups that were most involved in training, one or two exercises to stretch these muscles in a static mode for 15–20 seconds, and one breathing exercise. The number of these types of exercises during the 75-minute classes was one-two, three and one, respectively, whereas during the 90-minute classes – two-three, four and one. All exercises were performed at a slow pace with almost no rest.

It should be noted that in group C, some aspects of the physical activity program were used by young females during free time from school, in particular, in some organizations. Exercises in the main part of the classes differed from those used in group E. Thus, each young female in group C chose how she wanted to organize this type of physical activity in her free time, specifically, she could train in a team or individually. In the latter case, the young female formed a set of exercises to solve the task of increasing her functional capabilities. While performing physical activity in a team, the main part of the lesson included a sports game chosen by the majority of the young females in the team as a means of physical activity. As can be seen, in both cases, such an activity was not mandatory, and the main emphasis was placed on young females' desire to do it in their free time from studying. As for the number of classes during the academic year, their duration, and the load of parameters used, it can be noted that they were consistent with those used in group E.

Outcome measures

To obtain data on the physiological parameters of the young females, necessary tests were conducted. They took place at the beginning (September) and end of the experiment (June, the end of the academic year at the military academy). Intermediate testing was not carried out because the task of this work was to obtain an overall picture of the effectiveness of experimental and current programs of physical activity of the young females in their free time from studying in increasing functional capabilities during the first year of training at the military academy. The studied parameters were related to the activity of the cardiovascular, respiratory, and neuromuscular systems of the young females. Well-known functional tests recommended by the American College of Sports Medicine [2] and researchers, including O. Bar-Or and T. Rowland [6], J. Wilmore, D. Costill, L. Kenney [33], and others. The outcome measures used included blood pressure (SBP and diastolic DBP), heart rate (HR), vital capacity

(VC), Ruffier index (RTI), Robinson index (RI = SBP x HR /100); vital capacity index (VCI = VC/body mass), and index maximum isometric strength (IMIS = maximum isometric strength/body mass). All the requirements were met during the tests. In this case, HR reflected the state of the heart, and together with blood pressure and RI, the state of the cardiovascular system at rest; the value of VC indicated the ability of the lungs to receive oxygen, and the value of VCI indicated the state of the respiratory system in terms of a full supply of oxygen to the body. The value of IMIS allowed for the assessment of the state of skeletal muscle development in the young females, which indirectly indicates the state of excessive accumulation in the muscles of structural and energy potentials that increase their working capacity. We used certified equipment: to determine the blood pressure – Santamedical Adult Deluxe Aneroid Sphygmomanometer, to determine the IMIS – handgrip Camry dynamometer, to determine the VCI – NDD EasyOne Plus System 2000-2 spirometer. Before the commencement of the research, we obtained permission to participate in the study from each young female and her parents. The data for the study were the quantitative values of the functional samples. Each year, each of the studied characteristics was set to its default values and then compared to those obtained at the beginning and end of the first year of study. Thus, we determined the increase or decrease in the value of a particular functional characteristic or its manifestation at the achieved level. The organization of the study considered the provisions of the World Medical Association on the ethical principles of medical research with human participants.

Data analysis

All statistical analyses were performed using SPSS Version 20. For each parameter the following calculations were performed: mean (M), standard deviation (SD), Kolmogorov-Smirnov Test (KS), and when necessary – the value of *Z*. The latter allowed us to determine the Mann-Whitney *U* test, which was used in case when applying Student's *t*-test for dependent and independent samples was not possible. The reason for using the latter was that the distribution of values of the indicator in the sample was different from normal. The 0.05, 0.01, and 0.001 probability levels were used to indicate statistical significance.

Results

Before the analysis of the researched groups' data obtained at the beginning and end of the pedagogical experiment, the correspondence of the distribution of the values of each parameter to the normal distribution was determined. The result of the K-S Test proved the lack of normal distribution for some character-

istics at the beginning of the study. In Group E, this was SBP, in group C, SBP, DBP, and VC. A similar result was obtained at the end of the experiment, where in group E, SBP and DBP values differed from the normal distribution. In Group C, a feature similar to that of DBP and VC was noted. These results were considered when determining the discrepancy between the means of two independent or dependent samples. Comparing the values of the indicators at the beginning and end of the experiment, it was established that all physiological parameters improved in group C during the academic year (Table 1).

Table 1. Changes in the physiological parameters of the young females in group C during the experiment (n = 108)

Parameter	At the beginning		At the end		The size of the change		t	p
	M_1	SD_1	M_2	SD_2	M_1- M_2	M_1- M_2 (%)		
HR at rest, bpm^{-1}	80.69	5.28	74.52	4.99	-6.17	7.7	8.85	0.001
SBP, mmHg	114.61	5.02	117.38	4.68	2.77	2.4	7.03	0.001*
DBP, mmHg	74.69	4.78	78.19	4.73	3.50	4.7	7.96	0.001*
VC, ml	1.94	0.24	2.69	0.25	0.75	38.7	9.02	0.001*
VCI, $ml \cdot kg^{-1}$	34.86	5.68	41.18	5.64	6.32	18.1	8.2	0.001
IMIS, %	30.51	5.55	41.66	6.14	11.15	36.5	14.06	0.001
RTI, conditional units	10.84	0.70	9.76	0.81	-1.08	10.1	10.16	0.001
RI, conditional units	92.64	5.80	84.42	5.61	-8.22	8.9	10.57	0.001

Note: t-critical values for related samples at the level of $p<0.001$ – 3.392; the p value obtained using using nonparametric tests are highlighted with asterisks (*); HR – heart rate, SBP – systolic blood pressure, DBP – diastolic blood pressure, VC – vital capacity, VCI – vital capacity index, IMIS – index maximum isometric strength, RTI – Ruffier test index, RI – Robinson index

At the same time, the positive change in the values of these parameters was in the range of 2.4–38.7%. The smallest change was noted in SBP, which was the largest in VC. A similar result was found in the E group, except for the values at which the physiological parameters of the young females improved. Thus, the positive change in values was in the range of 2.8–53.1%, the smallest was found in SBP, and the largest was in IMIS (Table 2).

The latter testified to a significant improvement in the development of skeletal muscles in the girls, which indirectly indicates a state of excessive accumulation of structural and energy potentials in the muscles, which increase their working capacity. Although there were significant positive changes in physiological parameters in both groups, comparing them revealed some features. First, it was noted that out of all eight indicators, five differed by a statistically significant value. This was applied to the HR at rest, VCI, IMIS, RTI, and RI. However, in all these indicators, the values of the girls in group E showed higher positive re-

sults than those of the girls in group C (Table 3). In particular, the most pronounced differences were in the RTI values; in group C, it was 9.76 ± 0.81 conditional units, in group E – 8.11 ± 0.51 conditional units (t = 12.13; p < 0.001); in this indicator, a lower value indicates a higher positive result. The values of the other physiological parameters in both experimental groups were almost the same (p = 0.114–1.0).

Table 2. Changes in the physiological parameters of young females in group E during the experiment (n = 21)

The name of the parameter	At the beginning		At the end		The size of the change		t	p
	M_1	SD_1	M_2	SD_2	M_1- M_2	M_1- M_2 (%)		
HR at rest,bpm^{-1}	80.14	2.2	71.14	1.93	-9.00	11.2	14.11	0.001
SBP, mmHg	115.48	2.7	118.71	2.33	3.23	2.8	3.4	0.001*
DBP, mmHg	76.33	2.67	78.76	2.30	2.43	3.2	3.07	0.002*
VC, ml	1.97	0.18	2.84	0.21	0.87	44.2	13.59	0.001
VCI, ml·kg^{-1}	34.50	2.89	47.54	2.78	13.04	37.8	14.87	0.001
IMIS, %	30.64	2.38	46.91	2.90	16.27	53.1	19.97	0.001
RTI, conditional units	10.77	0.74	8.11	0.51	-2.66	24.7	13.70	0.001
RI, conditional units	91.93	3.79	80.22	1.94	-11.71	12.7	12.56	0.001

Note: t-critical values for related samples at the level of p < 0.001 – 3.392; Note: the p value obtained using nonparametric tests are highlighted with asterisks (*); HR – heart rate, SBP – systolic blood pressure, DBP – diastolic blood pressure, VC – vital capacity, VCI – vital capacity index, IMIS – index maximum isometric strength, RTI – Ruffier test index, RI – Robinson index

Table 3. Differences in physiological parameters in group E and group C at the end of the experiment

Group/ characteristic	HR at rest, bpm^{-1}	SBP, mmHg	DBP, mmHg	VC, ml	VCI, ml·kg^{-1}	IMIS, %	RTI, conditional units	RI, conditional units
M_2(C) – M_2(E)	3.38	1.33	0.57	0.15	6.36	5.25	1.65	4.2
M_2(C) – M_2(E) %	4.5	1.1	0.7	5.6	15.4	12.6	16.9	5.0
t	5.331	-1.189	0.001	0.10	7,81	6.08	12.13	6.14
p	0.001	0.291*	1.0*	0.114*	0.001	0.001	0.001	0.001

Note: the p value obtained using nonparametric tests is highlighted with asterisks (*)

Discussion

During their studies at the military academy, young females are engaged in large amounts of physical activity. This contributes to the successful solution of

various content training tasks [1, 11, 18, 21, 29]. Therefore, the search for a model of physical activity that leads to achieving the best results in as many characteristics of young females as possible is an important scientific task. This study found out that the current model of physical activity in the military academy, which is implemented in free time, improves all physiological parameters of young females. This was evidenced by the changes in the values of the indicators of the young females in group C obtained during the first year of their studies at the military academy. However, the changes in group E also showed an improvement in all physiological parameters.

This result is attributed to a set of reasons. One reason, as noted earlier [28], is the implementation of the generalized stage of the adaptation syndrome (cross-adaptation) established by H. Selye. That is, the specific workload used by the young females in each group during the school year led to such a cross effect. In other words, when influencing any one physiological characteristics, an improvement was also noticed in other characteristics that were not affected by this load at all. According to the researchers [6], the basis of cross-adaptation is not a single reaction but a wide range of non-specific reactions of the body to the proposed exercise. One possible cause of the cross-effect is the low level of development of the physiological parameters studied in both groups of the young females. The conclusions available in the professional literature [7, 12] and the data obtained by us earlier [27] confirm the presence of young females with below-average and low levels of development of functional and physical capabilities.

Another reason for this result was that physical activity programs involved the engagement of such systems and mechanisms of the body that are associated with different physiological parameters [3, 5, 34]. The study also found out that after using the proposed programs, the results in Group E were much better than those in Group C. One of the reasons for this achievement was the content of physical activity provided for each program used. In particular, the influence of the environment (including physical activity) on the body triggers, first of all, a stress response, which consists in increasing the functioning of the circulatory system, respiration, and simultaneous activation of regulatory systems, mobilizing functional reserves [33, 34]. The values of indicators that reflect the state of the circulatory system (HR and RI), respiratory system (VCI), and body response to exercise (RTI) were higher in group E than in group C.

In addition, the systematic use of physical activity in different areas has a similar effect: there is a shortage of energy resources (macroergs), which intensifies the process of phosphorylation and mobilizes glycogen stores. This is a signal for the cells' genetic apparatus that initiates accelerated synthesis of nucleic acids and proteins, greater formation of mitochondria and enzymes, at the level of the musculoskeletal system – an increase in the number of active

motor units, additional involvement of muscle fibers, increased strength and rate of muscle contraction fiber, an increase in muscle glycogen, ATP, creatine phosphate [25]. The closer to the current state of the organism are the parameters of the proposed physical activity program, the more strongly the genetic apparatus of cells is activated due to energy deficiency, providing greater growth of energy potential. The latter is the basis for a better result in increasing nonspecific resistance or cross-adaptation [8, 33]. The data from our study on the values of IMIS, to some extent, further confirm greater effectiveness of the physical activity program in group E than in group C. This is because IMIS reflects the state of skeletal muscle development in the young females, which indirectly indicates the state of excessive accumulation of structural and energy potentials in the muscles, which increases their working capacity. At the end of the experiment, IMIS reached the value of 46.91 ± 2.9 conditional units in group E, while in group C – only 41.66 ± 6.14 conditional units (t = 6.08; p < 0.001). At the beginning of the experiment, the values were 30.64 ± 2.38 and 30.51 ± 5.55 conditional units respectively, which is almost the same, as evidenced by t, which was 0.12 (p > 0.05).

We also noted the importance of motivating young females to engage in physical activity, which was reflected in the study's results. In particular, the functionality in both groups differed from the high functionality, so they needed to be adjusted [10]. It is an additional physical activity that is the main solution for such problems [26]. Higher results in group E than in group C were associated with the positive impact of the program on the psychological needs of young females, namely independence, competence, and integration into the activities of the team. The program of group E allowed us to meet all of these needs, while in group C, to some extent, only competence and independence were catered for. These needs are crucial in the formation of internal motivation to engage in physical activity [22]. The formation of this type of motivation should be included in physical activity programs used to improve the physical performance, and functional characteristics of servicemen [17, 18]. However, these assumptions require experimental verification. In future research, we plan to focus on solving this task.

It is important to note that the research had limitations, the biggest one being partially classified information about the military during the war. Another important limitation is the small number of young females studying at the Lviv academy every year, where the experimental program was implemented. Group E, as well as group C, was formed by random sampling; the maximum possible number in group E was 21 young females. The criterion for selection into each group was compliance with the age limit, namely, from 17 years and 3 months to 18 years and 5 months. The number of young females in group C was 108,

and their data on physiological parameters were obtained one year earlier when they started studying at Zhytomyr, Lviv, and Khmelnytskyi academies.

Conclusion

The use of experimental and current physical activity programs during one academic year is effective in increasing the functional capabilities of young females. All the studied physiological parameters improved in both groups; however, the experimental group achieved a higher result than the control group in five of the eight parameters. Thus, at the end of the last academic year, the HR of the young females reached the value of 74.52 bpm^{-1}, while in the experimental group it was 71.14 bpm^{-1}, and the difference was 4.5%; the value of VCI was 41.18 $ml \cdot kg^{-1}$ and 47.54 $ml \cdot kg^{-1}$ (difference 15.4%), IMIS – 41.66 and 46.91% (difference 12.6%), RTI – 9.76 and 8.11 conditional units (difference 16.9%), RI – 84.42 and 80.22 conditional units (difference 5%) ($p < 0.001$). Among the last two indicators, smaller values indicate a higher functional capacity of the cardiovascular system at rest (RI) and after dosed physical exertion (RTI).

STATEMENT OF ETHICS

This study was conducted in accordance with the World Medical Association Declaration of Helsinki. The study protocol was reviewed and approved by the Research Ethics Committee of the Kamianets-Podilskyi National Ivan Ohiienko University (17 February, 2022, Kamianets-Podilskyi, Ukraine). All participants provided written informed consent to participate in this study.

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Część IV

Turystyka i rekreacja

UNIWERSYTET HUMANISTYCZNO-PRZYRODNICZY IM. JANA DŁUGOSZA W CZĘSTOCHOWIE
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Conditions for tourist travels to the Warmian--Masurian Voivodeship during the COVID-19 pandemic[1]

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Uwarunkowania wyjazdów turystycznych do województwa warmińsko-mazurskiego w dobie pandemii COVID-19

Streszczenie

Celem artykułu jest ukazanie poziomu ruchu turystycznego oraz rozwoju turystyki w województwie warmińsko-mazurskim w okresie pandemii COVID-19. W artykule przedstawiono główne czynniki, które wpłynęły na rozwój przyjazdów turystycznych w tym regionie. Zastosowane metody to obserwacje terenowe, analiza literatury, w tym dokumentów strategicznych, analiza danych statystycznych oraz badanie ankietowe. W artykule przeanalizowano uwarunkowania ob-

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szaru do rozwoju turystyki, w tym klimat, infrastrukturę drogową i kolejową oraz szlaki turystyczne i bazę turystyczną. Dodatkowo wskazano funkcjonujące atrakcje turystyczne w województwie oraz ukazano funkcjonującą bazę noclegową i gastronomiczną. Przeprowadzono również ankietę dotyczącą opinii turystów na temat podróży w czasie pandemii COVID-19.

Słowa kluczowe: rozwój turystyki, turystyka, jeziora, przestrzeń, planowanie.

Abstract

The aim of this article is to show what was the level of tourist travels and tourism development in the Warmian-Masurian voivodeship during the COVID-19 pandemic times. The article presents the main factors that influenced the development tourist arrivals in this region. The methods used were observations, analysis of literature, analysis of strategic documents and analysis of data collected by a questionnaire. The article analyses the conditions of the area enhancing the development of tourism, including climate, road and rail infrastructure and tourist routes. In addition, tourist attractions in the province were highlighted and reference was made to the existing tourist infrastructure – accommodation and catering facilities. A questionnaire was also carried out pertaining to tourists' opinions about travels during the COVID-19 pandemic time.

Keywords: tourism development, tourism, lakes, space, planning

Introduction

This article is an attempt to characterize tourism development in the Warmian-Masurian voivodeship during the COVID-19 pandemic times. It is an empirical analysis based on research conducted with the use of a survey, enriched with photographic material. The aim of the article was to show the conditions of the area of the Warmian-Masurian voivodeship, with particular emphasis on natural conditions, including the climate of the region. The railway and road infrastructure, the tourist routes, and the accommodation and catering facilities were also analysed. A wide range of tourist routes was shown. The selected region is very interesting in terms of tourism development because it is changing dynamically. The article also shows how the COVID-19 pandemic affected tourist movement in the voivodeship.

The aim of the study was to answer the following questions: What were the conditions of tourism development for this region? What was the impact of the COVID-19 pandemic on tourism movement in this voivodeship?

Conditions for the development of tourism in the Warmian-Masurian voivodeship

The Warmian-Masurian voivodeship is one of the largest areas in Europe with attractive natural features. It is inhabited by 1.4 million people, and its sur-

face area is 24 thousand square kilometres, which makes it the fourth largest voivodeship in Poland (representing 7.7% of the country's territory). The population density is 59 people per square kilometre [22]. It is located in the north-eastern part of the country. The region measures 240 kilometres east to west and 146 kilometres north to south. The capital, which is the largest city of the voivodeship, is Olsztyn, where the voivode and local government authorities are located [43]. In 2020, 490 tourist accommodations facilities were located in the Warmian-Mazurian voivodeship (including 112 hotels, 2 motels, 36 guesthouses, 44 holiday resorts, 38 tourist cottage complexes, 16 campsites, 58 guest rooms and 60 agri-tourism establishments[2]). All bed places for tourists in 2020 counted 40 thousands, out of which 13 thousands were located in hotel establishments [16].

However, it needs to be mentioned that in case of hotel investments, it is necessary to transform the natural environment. This is why it is crucial to choose a method of managing naturally valuable areas and ensure their maximum protection and sustainable development [14]. The idea of sustainable development assumes that the changes meet the needs of modern societies, and will not limit development possibilities for future generations. The parallel development of economy, society and the environment should be kept in mind. The concept of sustainable development was defined by the report of the World Commission for Environment and Development entitled 'Our common future'(Earth Summit Conference) (www.teraz-srodowisko.pl).

The conditions of an area for the development of tourism means that the given area has a predisposition for tourism development in terms of tourist settlement, tourist attractiveness, appropriate natural values, and transport accessibility [6]. In the Warmian-Masurian voivodeship there is a complex of about 2.500 lakes, they constitute 6% of the entire voivodeship and are its greatest asset. Water reservoirs were created during the Baltic Glaciation.

This voivodeship is the third largest by the share of protected areas (46.7%) and has particularly distinguished natural values. In addition, 31.4% of the voivodeship's area is covered by forests, which also include 8 landscape parks [13], 67 protected landscape areas, 2.180 natural monuments and 102 reserves [18].

Basic climate-creating factors are heat and air circulation [22]. Poland is characterized by a temperate climate with the greatest variability in weather (Kaczorowska, 1958). There are two types of climate in the Warmian-Masurian voivodeship: maritime from the north-west, and continental from the east, but generally the voivodeship has a moderate transitional climate, which is characterized in this region by mild winters and cool summers. Meteorological studies carried out over 30 years in Olsztyn show that the warmest days are in July and August [26].

[2] Statistics for accommodation facilities with more than 10 beds.

Transport infrastructure

Road infrastructure is an important part of the transport network. Transport plays an important role in the flow of goods and is of high importance in the socio-economic development of the country and the region and tourism development [2]. It can also play a huge role for the tourism of the region itself because it significantly influences the investment attractiveness of a given region [22]. It is also important to develop the road network to improve safety. For years, many investment programmes have been created to improve travel conditions in Poland [12].

The region is rich in road infrastructure; several national roads pass through the voivodeship (No 7, No 16, No 51 and No 65), enabling fast and safe travel between cities [28]. The most important link is the national road No 7, which is 780 kilometres long. The road is part of the international European route E77 [29] that runs through Russia to Hungary. In December 2017, the road in the Warmian-Masurian voivodeship section was completed, thanks to which the section running through the area is classified as an expressway; however, construction on the Masovian section of the voivodeship is still ongoing. When the work is complete, the communication network in Poland will have improved significantly. Thanks to this route, Poland will be better connected with the countries of southern Europe. The completed fragment of the route is shown in Figure 1.

Fig. 1. Access to the S7 motorway towards Warsaw in the town of Ostróda

Source: Photo by Małgorzata Bogusławska.

Investments in road infrastructure increase driving safety, improve transport connections with smaller towns and have a positive effect on increasing the movement of tourists. Since 2010, 1.400 kilometres of hard surface public roads have been constructed. In December 2020, a project for another investment was approved – the construction of the S16 national road. Thirteen kilometres of the Borki Wielkie-Mrągowo section, out of the planned 230 kilometres, have been completed. This will significantly facilitate communication between the largest tourist destinations of Masuria and improve transit times for the local population. It will also be part of the European transit route from Greece to Lithuania. However, despite the commencement of construction works, the road is still very controversial. The biggest problem is that the motorway will cross the Land of Great Lakes, and the noise may scare tourists away [32]. Due to the high tourist movement in this area, such a motorway would significantly relieve public roads and increase travel safety, which would improve road conditions in this region.

The Warmian-Masurian voivodeship has a railway network that falls under the IŻ Olsztyn railway line network [30]. It allows access to selected towns, and connections with the largest cities in Poland [30]. Despite the fact that the railway network exists, it is not the best means of transport in the region, as trains only reach selected places. In 2018, plans were made to resume travel on several railway lines, which would significantly improve intercity communication and attract more tourists, especially those who are unable to travel by car.

Fig. 2. Railway platform in Ostróda

Source: Photo by Małgorzata Bogusławska.

Tourist routes in Warmian-Masurian voivodeship

The voivodeship is rich in various types of tourist routes, including car, bicycle, hiking and horse trails. In total, in 2020, they were 2.459 kilometres long (including 1.740 km of lowland trails, 145.7 km for cycling and 17 km for horse riding trails) [16]. There are also thematic routes leading through historical places, often related to the biographies of important figures. The route is 600 kilometres long and runs past many significant monuments. Other trails include the Copernicus Trail of 232 kilometres, which leads through towns related to the life of the astronomer, and the Gothic Castles Trail, 642 kilometres long, which runs through Warmia, Masuria, Powiśle and Kashubia. There is also the Elbląg Canal Trail, 280 kilometres long, which is a permanent tourist attraction [1]. The R64 cross-border route, 187 kilometres long, 95 of which are in the province of Warmian-Masurian voivodeship, circles the Vistula Lagoon, leading through the Vistula Spit to Braniewo (Bzowski, 2017). Another well-known international route is the R1, which is 86 kilometres long within the voivodeship and covers 675 kilometres in Poland altogether [38].

There are also naturally formed connection systems of water reservoirs called the Great Masurian Lakes. For lovers of water sports, these are a huge tourist attraction. The water route that encourages sailors from all over the country and abroad to relax in the beautiful landscape of Warmia-Masuria the most is The Great Masurian Lakes Trail, which is 132 kilometres long and is considered the most attractive in the entire country and Europe. Travelling along this route, you can admire many monuments, including the historic swing bridge and the castle in Węgorzewo. An interesting experience is the opportunity to observe the diversity and specific development of municipalities located on the indicated lakes [3]. Another noteworthy trail is the 96-kilometre long canoe route running along the Krutynia River, considered to be the most beautiful canoeing trail in Europe. The route of the trail runs through several lakes connected by smaller rivers. The surrounding development of the coastline is also attractive. You can admire churches, palaces, country cottages, taverns, hydroelectric power plants and locks, as well as other architectural monuments [20].

Creating a safe infrastructure for bicycle tourists is an important element in the development of sustainable transport, improving the comfort and safety of cyclists and promoting the development of bicycle tourism. Warmia-Masuria has a wide range of routes that are attractive to tourists. In the Ostróda poviat, you can travel on 18 different bicycle routes that lead to the nearest towns [34]. The photo of a bicycle trail in Ostróda (Fig. 3) shows a bicycle path and a pavement for pedestrians separated by a green belt. This is a very safe solution, preventing pedestrians from colliding with cyclists and vice versa. The development of the green areas of Ostróda takes into account the natural and climatic aspects

of the city in order to protect the natural environment and create a high-quality living space.

Fig. 3. Beginning of the bicycle path in Ostróda

Source: Photo by Małgorzata Bogusławska.

A300-kilometre trail called the 'Masurian Bicycle Loop' is planned for 2023, supervised by the Association of Great Masurian Lakes 2020. The project will encircle Śniardwy Lake and will comprise ten observation towers along the route to admire the Masurian landscape, 18 bicycle service points, and recreational shelters with services, including toilets and bicycle racks. These are to ensure the comfort of cyclists [35].

The longest bicycle trail in Poland, Green Velo,[3] runs through the region. The route goes through 17 towns and villages; these are: Elbląg, Tolkmicko, Frombork, Braniewo, Pieniężno, Górowo Iławeckie, Lidzbark Warmiński, Bartoszyce, Sępopol, Korsze, Barciany, Srokowo, Węgorzewo, Banie Mazurskie, Gołdap, Stańczyki, Żytkiejmy [40].

The development of tourism infrastructure in the Warmian-Masurian voivodeship

2.3 million people came to the Warmian-Masurian voivodeship in 2020 as part of domestic tourism [16]. It is the 6th most visited voivodeship in Poland. In 2020, in the year of the COVID-19 pandemic, the occupancy rate of bed places

[3] The Green Velo trail is 2.071 kilometres long, which makes it the longest in Poland (www.green-velo.pl).

in facilities with 10 or more bed-places in Poland was much lower than the year before and amounted to 26.8% (in 2019 – 40.6%). The Warmian-Masurian voivodeship was one of the four voivodeships where the indicator was higher than the national average. Analyzing the values of the tourist intensity ratio according to Schneider and Charvat, values higher than the average for Poland were characteristic for the Warmian-Masurian voivodeship – 61 and 167 respectively (for each 100 inhabitants there were 61 tourists and 167 overnight stays) [16].

The concept of sustainable tourism development assumes an effective development path, ecological solutions and social participation. This is to guarantee that a given region will preserve rich natural and cultural resources of the area for future generations [5]. Warmia-Masuria has a wide range of tourist attractions related to active tourism. The areas famous for lakes constitute a significant tourist attraction and are considered a favourable environment for the development of tourism and recreation. Many regions use this fact to promote their image [7]. However, as far as the attractiveness of individual tourist resorts is concerned, it is not evenly distributed. Tourism in some lake areas is restricted due to the current ban on the use of internal combustion engines. Any recreation generating noise, such as jet skis or scooters, is prohibited. This is regulated by the Environmental Protection Act. One such an area is Narie Lake located in the Iława Lake District. It is a great place for tourists who want to rest in peace and quiet. The ban allows for the elimination of frequently occurring water conflicts that arise between lake users, for example, between canoeists and motorboat users. Water sports practised in such lakes are much safer. Fishing is a popular tourist attraction in the region. The development of the lake shores is conducive to water recreation, and the inhabitants have built little piers to be able to fish, swim in the water or go boating; hence Narie Lake enjoys a developed shoreline that stretches for 50 kilometres (Fig. 4).

Considering the example of coastal towns, in order for a given area to become attractive for tourists, it must undergo several transformations. Usually, such changes take place in fishing villages because a suitable pier, a beach to facilitate the mooring of boats, and a bathing area are already in place. Overtime, a promenade is built, along with catering facilities and accommodation facilities (Durydiwka, Duda-Gromada, 2014). This pattern was repeated in the village of Kretowiny, which is located on Narie Lake. There is a tourist and entertainment centre here, providing accommodation (camping, summer houses, guesthouses and hotels); gastronomic facilities serving regional dishes; and water equipment rentals (canoes, boats, diving equipment). The promenade that stretches around the bay enhances long walks. For tourists, there is also a pier for mooring boats and a beach with a designated bathing area. The land development on Narie Lake is shown in figure 5.

Fig. 4. The shoreline at Narie Lake

Source: Photo by Małgorzata Bogusławska.

Fig. 5. Pier and beach with a designated bathing area in Kretowiny, witha promenade along the shoreline

Source: Photo by Małgorzata Bogusławska.

The largest urban centres in Warmia are Elbląg and Olsztyn. Elbląg attracts tourists not only with its beautiful old town but also with the Elbląg Canal, known throughout Europe, while Olsztyn is the capital of the voivodeship. There are

towns located in the Masurian Lake District that are very famous tourist centres, such as Pisz, Giżycko, Mrągowo and Mikołajki. They enjoy the most developed recreational tourism, including water tourism, of the area. The most popular sport that attracts tourists is sailing. Every year in Giżycko, there are regattas lasting 24 hours, the route running through the Land of Great Lakes.

Another region that attracts tourists is the Iława-Ostróda Lake District, its largest centres being Ostróda and Iława. The largest share of tourism in this area is domestic tourism (84%) [3].From 2012 to 2019, tourist traffic increased. Tourism in Poland is developing at the highest level (Eurostat). In 2013, the Warmian-Masurian voivodeship recorded a huge increase in interest in the region compared with 2009; however, short-term tourism dominates here. The most numerous groups of foreign tourists, 47%, are German citizens [23].

Tourist accommodation base in the Warmian-Masurian voivodeship

Since 2012, the interest in tourism in Poland has increased dramatically. The number of nights spent in tourist resorts in 2012–2019 increased by 49%, which is one of the largest increases in Europe (Eurostat). In 2018, all European countries reported statistics on tourist movement, and Poland recorded the 5th largest number of night stays. In Poland, the recorded increase results from the expanding hotel base and the communication network. In 2013, 173,000 foreign tourists came to the Warmian-Masurian voivodeship [3].Compared with 2010, a 19.1% increase was recorded. On the other hand, the number of Poles who used accommodation services in the region in the same year was 878,800, a 15% increase compared with 2010. In contrast with the seaside voivodeships, the accommodation base in Warmia-Masuria is not sufficiently developed despite its natural and anthropogenic diversity. This is due to:

1) an underdeveloped communication network in the region for many years;
2) the presence of naturally valuable areas that limit the development of infrastructure [18].

The most popular accommodation facilities among tourists are 4 and 5-star hotels; the popularity of other options depends on their standard. However, taking into account the exceptional year 2020 and the occurrence of the COVID-19 pandemic, the rate of occupancy of beds in all voivodeships was significantly lower than in 2019. The largest declines in the use of tourism bed places occurred in the following voivodeships: Mazovian 22.7%, Lesser Poland 17.3%, Kuyavian-Pomeranian voivodeship 15.8%, and Silesia 14.7%. In 2020, the greatest interest was recorded in the Warmian-Masurian voivodeship, where the decrease in the use of bed places amounted to 4.3% [44].

The movement of tourists in the region varies depending on the poviat (a smaller administrative district). The use of accommodation facilities when comparing the Olecko poviat to the Gołdap poviat is lower by 36.9 percentage points [3]. Increasingly, municipalities want to be the most competitive, which is why a lot of emphasis is placed on building all-year round facilities. Investments such as Hotel Gołębiewski, Hotel Mikołajki, Hotel Robert's Port, Hotel Mazurski Dworek, Hotel Amax, Na Skarpie, operating all year round, contribute to the growth of the movement of tourists out of season [17].

Hotel Gołębiewski evokes controversy among local inhabitants. The facility can accommodate more than 1,300 people [45] and offers its guests a wide range of attractions, including water equipment rental, bike rental, golf, horse riding club, arcades, swimming pools, spa, own souvenir shop, etc., which is detrimental to local businesses offering similar services. Moreover, the size and appearance of the building disturbs the architectural character of the region. Constructions of this type should not be built along the coastline. The investment spoils the cohesion of the development and the attractiveness of the region, cutting off free access to the coastline. In the accommodation offer, the rental of summer houses and campsites is also very popular. This type of building development does not interfere with the landscape, unlike larger hotels. The cottages are charming and offer greater privacy. They enable a greater share of time to be spent outdoors, with gardens giving visitors the possibility to grill food, and to take pets with them on holiday. The layout of the summer houses and the campsite is shown in Figure 6.

Fig. 6. Holiday homes at Narie Lake

Source: Photo by Małgorzata Bogusławska.

The photo shows single-storey tourist buildings and summer cottages, against the background of the forest; this does not disturb the landscape structure. This type of forest management is common in the area.

Fig. 7. The Vertico camping site on Narie Lake

Source: Photo by Małgorzata Bogusławska.

Figure 7 shows the Vertico campsite, which is located in the middle of the forest, with an internal street marked out to facilitate access to the designated accommodation place.

The gastronomic base in the Warmian-Masurian voivodeship

An important element of any trip is consuming local cuisine specialties and more often it is becoming a factor that determines the satisfaction rating of a visit to a given region [15]. According to A. Jęczmyk [9], one of the dynamically developing forms of this activity is culinary tourism, which consists in the search for products and dishes characteristic of specific tourist destinations [9]. Tourists visiting Warmia-Masuria are eager to get to know the local cuisine. It is a significant element of tourism experience here. The research carried out by the World Tourism Organization in 2012 indicates that, in recent years, culinary tourism has been one of the segments showing the greatest development in the global tourism economy (Jęczmyk, Kasprzak, 2017). As for the Warmian-Masurian voivodeship, in the years 2009–2013 the number of restaurants increased by as much as 38.5% [3].

The Warmia-Masuria region was the first in Poland to apply for membership in the European Network of Regional Culinary Heritage. This is an association of farmers, processors and restaurateurs from individual European member regions. They include 135 enterprises offering regional food (www.dziedzictwokulinarne.pl).The Warmia-Masuria region favours the development of gastronomy due to its natural conditions, which allow for the cultivation of many species of fish, mushrooms and plants; this encourages tourists to taste local dishes. The cuisine of Warmia-Masuria combines the flavours of Old Polish, German and Borderlands cuisine traditions[40]. In Mikołajki, a project of a restaurant specializing in regional cuisine was created: Recreating the economic heritage of the Warmia-Masuria region by opening a restaurant/inn in the centre of Mikołajki, specializing in regional cuisine [42]. Only regional dishes would be served there. In addition, during the crisis caused by the COVID-19 pandemic, local food outlets were supported by a government agency offering an additional subsidy for small enterprises. However, catering facilities are dependent on tourism. The peak of the tourist season is July–August, which accounts for 60 days a year; June and September are months in which tourists' interest is reduced, due to the school year timetable[6]. The presence of all-yearround facilities does not significantly translate into bigger traffic in restaurants, because hotels offer self-catering.

In Mikołajki, Olsztyn and Elbląg, each city's website offers tourists a list of catering facilities. Table 1 shows the number of all-year round and seasonal facilities.

Tab. 1. The number of restaurant facilities in selected tourist cities of the voivodeship in 2021

SPECIFICATION	Elbląg	Mikołajki	Olsztyn
objects in total	84	52	54
restaurants and bars	68	42	47
cafés and ice cream ppa-par;pparlours	15	6	7
year-round premises	—	4	—
number of residents	119 308	8 286	173 178

Source: own study based on registered gastronomic points on the websites of selected towns in 2021 (wwww.mikolajki.eu/dla-turysty/restauracje-bary-; www.turystyka.elblag.eu/s/13/gastronomia; www. visit.olsztyn.eu).

Based on Table 1, it could be determined that tourist movement has an impact on the gastronomic policy of cities. Mikołajki, despite the small number of inhabitants (8.286 people in 2017), has a similar gastronomic offer to Olsztyn, which is a city that is twenty times larger. The difference, however, is that most restaurants, bars, cafés and ice cream parlours operate during the tourist sea-

son, and the facilities are closed in winter. As large cities, Elbląg and Olsztyn do not have to worry about the lack of customers outside the summer season and can operate all year round. The unemployment rate in the Warmian-Masurian voivodeship is very high, i.e. 9.1%, while the unemployment rate in the whole country is 5.2%. This makes the voivodeship not very attractive to live in and results in increasing migrations to larger cities and a drop in the number of inhabitants. However, in 2018–2019, the number of catering establishments increased. In addition, a significant increase in revenue from catering activities can be noted between 2010 and 2019 (Table 2).

Tab. 2. Number of catering facilities in the Warmian-Masurian voivodeship in 2010, 2015, 2018–2019*

Specify	2010	2015	2018	2019
Number of catering establishments	444	492	443	558
including restaurants	162	216	170	209
Sales from catering activities (current prices)in thousand zloty	279535	418932.2	503984.2	590415.5
including catering production	217842	315824.5	410408.0	486628.2

* Data refer to enterprises employing over 9 people.

Source: *Rocznik Statystyczny Województwa Warmińsko-Mazurskiego*.

Survey results about tourism behaviours during the COVID-19 pandemic times

The survey was mainly based on closed questions with the possibility for respondents to give their own answers. There were a few open questions aimed at better understanding the reasons why they chose specific destinations, as well as their opinions. With a survey, it is easy to compare and find a link between the responses using charts. The period of the pandemic was exceptional for tourism; many accommodation facilities could not even function under the sanitary regime, or they could provide accommodation only to selected groups of people – sportspeople, journalists, spa patients. This resulted in a decreased interest in tourism.

120 questionnaires were analysed, and anyone who expressed an interest in the discussed topic could participate in the study. The survey was placed on two groups on the Facebook social media. One of them was a group of the Warsaw district, Rembertów, which includes the inhabitants of the capital and the surrounding area. The group has 11,000 members. The second place was a the-

matic group connecting cheap travel enthusiasts (Group – Cheap Travel) with a reach of 680,000 members. The mere collection of responses took four days, during which we managed to collect surveys from 120 respondents.

The first important aspect was to check how many of the respondents decided to take a holiday last year (2020). To the question 'Have you gone on holiday over the last year?', two-thirds of the respondents answered positively out of 120 people, and the rest indicated they did not go on holiday. The reasons why the respondents did not decide to go on holiday were interesting. As many as 33 respondents did not travel anywhere in 2020. Several categories of the most frequent reasons were identified (Table 3).

Tab. 3. Reasons why the respondents did not go on holiday in 2020

CATEGORY	% answers*
I was afraid of the coronavirus infection	45
lack of funds	36
no time	15
I was not interested in any of the available options	12
pregnancy / small child	9

* Some respondents gave more than one reason.

Source: study based on own research – sample of 120 questionnaires.

It turned out that the most common reason preventing respondents from deciding to take a holiday was the fear of COVID-19; as many as 45% of the respondents chose this answer. Another factor that frequently emerged (36%) was the lack of funding. 15% of the respondents did not leave due to lack of time, and 12% due to lack of interest. The least frequently chosen answer (9%) was pregnancy or having a small child.

The level of interest in the Polish seaside and in locations outside Poland is the same. Nearly two-thirds of the respondents would go to these places. The next most likely destinations declared were towns situated by lakes. About a quarter of the people indicated that they would like to spend their holiday at the lake. 14.2% of the respondents chose mountain villages. Cities were the least frequently chosen destination.

Tourists choosing specific destinations had an opportunity to answer an open question to indicate what had guided them in their selection process. The most popular responses have been grouped and presented in Table 4.

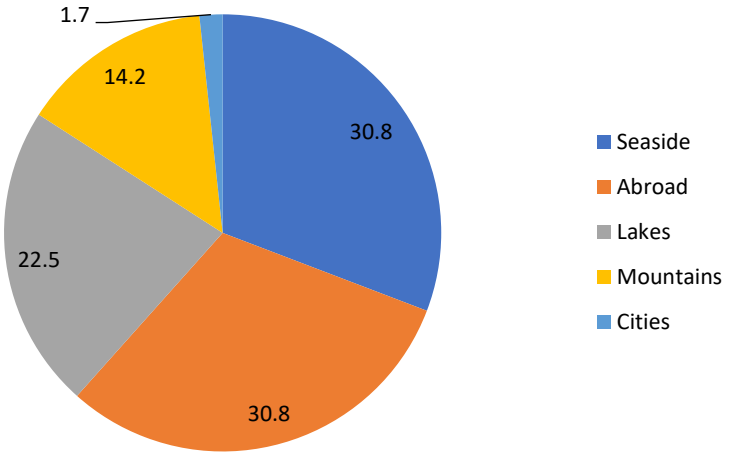

Fig. 8. Destinations that respondents would choose in the absence of the COVID-19 pandemic (in %)

Source: study based on own research – sample of 120 questionnaires.

Tab. 4. Factors influencing the choice of a destination by the respondents

CATEGORY	% answers
liking the place	37
peace	14
active leisure time	14
because of the weather	9
other	9
fear of COVID-19 infection	8
landscape	6
because of the price	3

Source: study based on own research – sample of 120 questionnaires.

Most often, the respondents indicated that they chose a specific place because of their own preferences. The second equally most important aspect wasto find a calm place and to spend time actively. Both answers received 14%. Other important reasons for their choices were the weather, the fear of COVID-19 and the landscape values. The lowest number of respondents answered that they chose an option because of the price. Destinations chosen by the respondents were an important thread in the survey. In the questionnaire the respondents could choose the places I proposed, as well as suggest their own answers (Fig. 9).

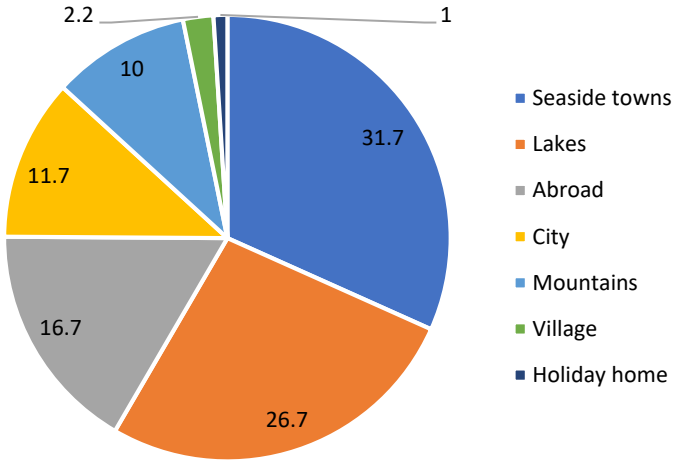

Fig. 9. Tourist destinations where respondents spent their holidays in 2020 (in %)

Source: study based on own research – sample of 120 questionnaires.

Among people who went on holiday in 2020, the most frequently chosen destination were seaside towns chosen by nearly one-third of the respondents. The lakes were the second most attractive destination. Over a quarter of the respondents spent their holidays at the lakes. 16.7% of the respondents decided to go abroad. Similar interest (slightly over 20% in total) was shown in destinations such as cities and the mountains. The least frequently declared holiday destinations were villages and holiday homes.

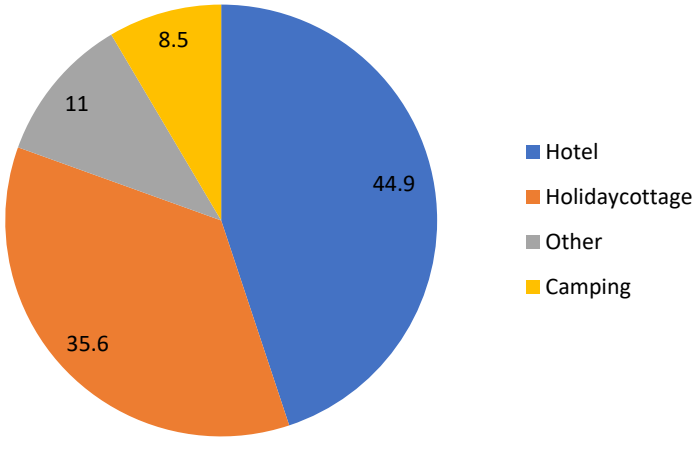

Fig. 10. The choice of accommodation type by the respondents (in %)

Source: study based on own research – sample of 120 questionnaires.

Hotels – 45% – were definitely the most willingly chosen option by the respondents, but 35.6% of them chose holiday homes as attractive places to relax (Fig. 10). Camping was the least attractive option. The participants of the study also indicated their interest in non-standard forms of accommodation, such as Airbnb, sleeping on a sailing boat, or in private lodgings (apartments). These single responses made up 11% of the total.

Another important aspect was the assessment of the Warmian-Masurian voivodeship in terms of tourism. The respondents were asked the following question: Have you ever gone to Masuria and were you satisfied? They could choose 3 answers (Table 5).

Tab. 5. Results of the survey on satisfaction with visits to the Warmian-Masurian voivodeship

Reply	% of all responses
Respondents who were satisfied with their stay in Warmia-Masuria	84
Respondents who were not satisfied with their stay in Warmia-Masuria	6
Respondents who have never visited Warmia-Masuria	9

Source: study based on own research – sample of 120 questionnaires.

The respondents indicated that most of them have visited Warmia-Masuria. Over three-quarters of the respondents said they liked it. A small proportion of tourists (6%)were disappointed with their stay. The respondents could choose what they liked best in the region and what they did not like (Fig. 11).

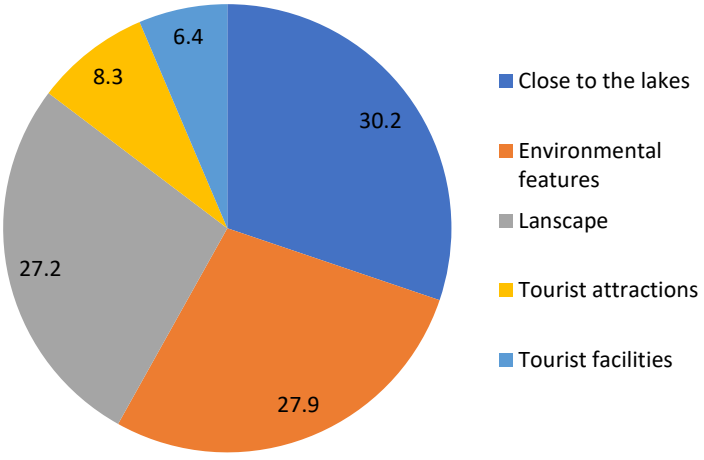

Fig. 11. Presentation of the tourist attractiveness factors of the region (in %)

Source: study based on own research – sample of 120 questionnaires.

The most attractive factor for the region was the proximity of lakes, which was marked by almost one-third of the study participants. Similar results were obtained for natural values (27.9%) and the landscape (27.2%). The smallest number of the respondents indicated that they liked the tourist attractions offered by the region or the tourist facilities. Both answers received less than 10% of the responses.

Summary and Conclusions

The aim of the article was to show the conditions of the development for the tourism sector in the area of the Warmian-Masurian voivodeship. The communes located by the lakes have been transformed through investment in the development of the region. This contributed to the improvement of the living conditions of the towns' inhabitants, as well as increased tourist movement. The accommodation base is constantly developing and adjusting its offer to the needs of tourists. New restaurants are being built to familiarize travellers with regional cuisine, which is generally influenced by the interest of visitors. Tourists routes are constantly being expanded for people who want to visit the Warmian--Masurian voivodeship. New sightseeing routes are being created that will allow visitors to get acquainted with the history and culture of the region. To make the region more accessible, the authorities were mobilized to quickly build the S7 route, which goes through the entire voivodeship, allowing convenient transport. New road investments are underway, which will significantly improve regional transport. The conducted survey showed an interest in lake tourism similar to coastal tourism. In addition, the respondents chose this region as a suitable place to spend their holidays due to its attractive natural values, the presence of forests, the proximity of the lakes and the desire to spend holidays in peace and isolation from others. Many people indicated the destination as suitable for holidaying during the pandemic, due to isolation, distance and separate housing, which reduced the risk of infection with the virus. The respondents could also indicate what type of land development they prefer during their stay. In addition, looking at the rest of the voivodeships, it was Warmia-Masuria that recorded the smallest decrease in tourist interest compared with other voivodeships during the COVID-19 pandemic. The main conditions for tourism development during the COVID-19 pandemic times were quick accessibility of the region by car from the neighbouring voivodeships and the region's environmental features, which were highly appreciated by tourists during the pandemic times. The feeling of isolation was also important for tourists. The impact of the COVID-19 pandemic on tourism movement in this voivodeships was huge, how-

ever, the region was among the voivodeships that recorded one of the best results in statistics of tourist movement in the COVID-19 pandemic times.

DECLARATION OF CONFLICTING INTERESTS

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BIOGRAMY, DYSKUSJE, POLEMIKI, RECENZJE, PRZEGLĄD WYDAWNICTW, SPRAWOZDANIA

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[rec.] Maciej Łuczak, Tomasz Jurek, *Medaliści olimpijscy Akademii Wychowania Fizycznego im. Eugeniusza Piaseckiego w Poznaniu w latach 1950–2020*, Wydawnictwo Naukowe Akademii Wychowania Fizycznego im. Eugeniusza Piaseckiego w Poznaniu, Poznań 2021, ss. 106

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Zainicjowane w końcu XIX wieku, a rozwinięte w XX wieku igrzyska olimpijskie, zarówno letnie, jak i zimowe, stały się w XXI wieku najważniejszą i największą na świecie imprezą sportową. Dla wielu sportowców już sam udział we współzawodnictwie olimpijskim stanowi cel sam w sobie – zgodnie z maksymą olimpijską, że: „[…] istotą rzeczy [igrzysk] jest nie wygrywanie i osiąganie triumfów, ale współzawodnictwo sumiennie i z honorem odbywane"[1] – a zdobycie medalu, zwłaszcza złotego medalu jest niewątpliwie upragnionym marzeniem

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1 W. Lipoński, *Uniwersalny i regionalny wymiar olimpizmu*, [w:] B. Woltmann, R. Urban (red.), *Ruch olimpijski na ziemi gorzowskiej*, Gorzów Wlkp. 2007, s. 23.

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nie tylko sportowym, ale życiowym. Uczestnicy igrzysk olimpijskich, a w szczególności medaliści i mistrzowie olimpijscy stali się bohaterami zarówno społeczności lokalnych, jak i regionalnych, ale często są także autorytetami międzynarodowymi, jak choćby Siergiej Bubka, Michael Phelps, Usain Bolt i inni, stanowiącymi wzór do naśladowania dla wielu młodych sportowców.

Biorąc pod uwagę ogrom pracy wkładanej każdego dnia w trening sportowy, wysiłek fizyczny, niezliczoną liczbę osobistych wyrzeczeń podejmowanych przez sportowców, na wyjątkowe uznanie zasługuje fakt, że tak znacząca grupa sportowców przyjmuje na siebie kolejne wyzwanie, jakim jest ukończenie studiów wyższych i zdobycie tytułu zawodowego. W większości przypadków sportowcy decydują się na rozpoczęcie kształcenia na poziomie wyższym na kierunku studiów, który jest zgodny z ich zainteresowaniami sportowymi, czyli wychowaniu fizycznym, sporcie, fizjoterapii. Zdarzają się jednak odstępstwa od tej zasady, np. przewodniczący Międzynarodowego Komitetu Olimpijskiego, mistrz olimpijski w szermierce (1976 r.), Thomas Bach ukończył studia prawnicze i posiada stopień naukowy doktora obojga praw, a jego poprzednik Jacques Rogge (1942–2021), olimpijczyk, żeglarz, był chirurgiem ortopedą. Podobnie, wybitny polski szermierz, trzykrotny medalista olimpijski Wojciech Zabłocki (1930–2020) z wykształcenia był architektem i uzyskał tytuł naukowy profesora, a lekkoatleta olimpijczyk Stefan Lewandowski (1930–2007), nazywany „latającym doktorem", specjalizował się w chirurgii ortopedycznej. Takich przykładów jest wiele. Zadziwiający jest zatem fakt, że powstało w Polsce tak mało opracowań, prezentujących sylwetki olimpijczyków czy medalistów olimpijskich jako absolwentów konkretnych uczelni wyższych. Takie prace spełniałyby z pewnością nie tylko funkcje edukacyjno-poznawcze, ale byłyby także promocją uczelni, miasta i środowiska. Z tego powodu inicjatywa, podjęta przez Autorów – prof. Macieja Łuczaka i prof. Tomasza Jurka, napisania monografii prezentującej medalistów olimpijskich Akademii Wychowania Fizycznego w Poznaniu, najstarszej polskiej uczelni kształcącej kadry w zakresie kultury fizycznej, jest niezwykle cenna i zasługuje na uwagę.

Treść monografii została poprzedzona przedmową prezesa Polskiego Komitetu Olimpijskiego Andrzeja Kraśnickiego, absolwenta AWF w Poznaniu, który wyraził wdzięczność Autorom za wykonaną pracę, zaangażowanie i upamiętnienie wybitnych polskich sportowców – medalistów olimpijskich, absolwentów poznańskiej uczelni. W konstrukcji opracowania można wyróżnić wstęp, trzy rozdziały główne, zakończenie oraz część dokumentacyjną. Wstęp ma charakter metodologicznego wprowadzenia, w którym Autorzy omówili charakterystyczne elementy ruchu olimpijskiego w odniesieniu do poznańskiej uczelni, przedstawili dotychczasowy stan badań w zakresie problematyki olimpijskiej, omówili strukturę monografii, a także zaprezentowali najistotniejsze dokonania na polu promocji ruchu olimpijskiego, realizowane w AWF w Poznaniu oraz Zamiejscowym Wydziale Kultury Fizycznej w Gorzowie Wlkp.

W rozdziale pierwszym Autorzy przedstawili zarys dziejów poznańskiej uczelni od jej początków w strukturach Wszechnicy Piastowskiej do czasów współczesnych, uwzględniających zmiany, będące skutkiem wprowadzenia nowej ustawy o szkolnictwie wyższym i nauce. Niewątpliwie jest to rozdział niezbędny, ukazuje bowiem warunki, w jakich rozwijały się talenty sportowe przyszłych medalistów igrzysk olimpijskich. Rozdział drugi stanowi kwintesencję pracy, ponieważ prezentuje biogramy dwudziestu siedmiu medalistów igrzysk olimpijskich i paraolimpijskich, edycji letniej i zimowej tej rywalizacji, którzy byli studentami bądź absolwentami Akademii Wychowania Fizycznego w Poznaniu oraz jej zamiejscowego wydziału w Gorzowie Wlkp. Autorzy przedstawili sylwetki następujących medalistów olimpijskich, absolwentów AWF Poznań: Małgorzaty Dłużewskiej-Wieliczko, Izabelli Dylewskiej-Światowiak, Jacka Fafińskiego, Ryszarda Katusa, Władysława Komara, Władysława Kozakiewicza, Ryszarda Kubiaka, Tomasza Kucharskiego, Lucyny Langer-Kałek, Macieja Lepiaty, Bronisława Malinowskiego, Wiesława Maniaka, Julii Michalskiej-Płotkowiak, Piotra Mowlika, Karoliny Naji, Grzegorza Nowaka, Rafała Piszcza, Piotra Stępnia, Jana Szymańskiego, Anny Szymul-Mayer, Tadeusza Ślusarskiego, Józefa Tracza, Ryszarda Wolnego, Andrzeja Wrońskiego, Włodzimierza Zawadzkiego i Kazimierza Zimnego. Opisy wszystkich medalistów zostały przedstawione w taki sam ujednolicony sposób, objęły informacje zarówno z życia sportowego, jak i prywatnego olimpijczyków. Rozdział trzeci stanowi zbiorowy portret absolwentów AWF – medalistów igrzysk olimpijskich. W skondensowanej formie Autorzy dokonali charakterystyki socjologiczno-statystycznej prezentowanej zbiorowości.

Pracę zamyka podsumowujące *Zakończenie*, w którym Autorzy dokonali oceny osiągnięć studentów – medalistów olimpijskich i paraolimpijskich poznańskiej uczelni i jej zamiejscowej placówki w Gorzowie Wlkp. W części dokumentacyjnej Autorzy uwzględnili wykaz skrótów (bardzo cenny, w monografii bowiem zostało wymienionych wiele organizacji i klubów sportowych, których nazwy zapisane były powszechnie stosowanymi skrótami), obszerną i bardzo szczegółową bibliografię, ponadto wykaz fotografii, streszczenie w języku angielskim oraz niezbędny w tego typu opracowaniach i bardzo przydatny praktycznie indeks nazwisk. Na szczególne uznanie zasługuje materiał ilustracyjny w postaci fotografii, prezentujących opisywanych medalistów olimpijskich, a także obiekty uczelni w Poznaniu i Gorzowie Wlkp. oraz rektorów AWF w Poznaniu.

Prezentowana monografia stanowi bardzo wartościowe i kompletne kompendium wiedzy o medalistach, zarówno olimpijskich, jak i paraolimpijskich, letnich i zimowych, studentach Akademii Wychowania Fizycznego w Poznaniu i Zamiejscowego Wydziału Kultury Fizycznej w Gorzowie Wlkp. Przedstawia sylwetki wyjątkowych osób, które skutecznie połączyły uprawianie sportu na najwyższym światowym poziomie oraz potrzebę zdobycia wyższego wykształcenia. Ich pra-

cowitość, zdyscyplinowanie i determinacja w dążeniu do osiągnięcia celu może być wzorem i inspiracją dla innych studentów.

Warto dodać, że rekomendowana praca autorstwa Macieja Łuczaka i Tomasza Jurka, pt. *Medaliści olimpijscy Akademii Wychowania Fizycznego im. Eugeniusza Piaseckiego w Poznaniu w latach 1950–2020*, znalazła także uznanie w środowisku naukowym. Autorzy w 2022 r. zostali nagrodzeni w ogólnopolskim konkursie Polskiej Akademii Olimpijskiej pn. „Logos Olimpijski", który od wielu lat cieszy się dużym prestiżem.

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[rec.] Eligiusz Małolepszy, Teresa Drozdek-Małolepsza, *Zarys dziejów Gminnego Ludowego Klubu Sportowego Pogoń 1947 Kłomnice* (*1947–2021*), Wydawnictwo Nauka i Innowacje, Poznań 2021, ss. 204

Jak cytować [how to cite]: Włodarczyk A., [*rec.*] *Eligiusz Małolepszy, Teresa Drozdek-Małolepsza,* Zarys dziejów Gminnego Ludowego Klubu Sportowego Pogoń 1947 Kłomnice (1947–2021)*, Poznań 2021, Wydawnictwo Nauka i Innowacje, ss. 204*, „Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe" 2023, t. 6, nr 1, s. 169–173.

W 2021 roku nakładem poznańskiego Wydawnictwa Nauka i Innowacje ukazała się monografia pt. *Zarys dziejów Gminnego Ludowego Klubu Sportowego Pogoń 1947 Kłomnice* (*1947–2021*), autorstwa historyków Eligiusza Małolepszego i Teresy Drozdek-Małolepszej z Uniwersytetu Humanistyczno-Przyrodniczego im. Jana Długosza w Częstochowie. Recenzentem wydawniczym jest dr hab. prof. UMCS Dariusz Słapek. Zainteresowania badawcze Teresy Drozdek-Małolepszej i Eligiusza Małolepszego skupiają się wokół dwóch głównych nurtów. Pierwszy z nich to dzieje kultury fizycznej na obszarze Kresów Wschodnich II Rzeczypospolitej ze szczególnym uwzględnieniem województwa wołyńskiego (czego efektem jest kilkanaście artykułów na łamach czasopism i prac zbiorowych oraz wydana w 2020 roku monografia pt. *Kultura fizyczna i turystyka*

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w województwie wołyńskim w latach 1921–1939)[1]. Drugi nurt to dzieje kultury fizycznej w małych miejscowościach i na obszarach wiejskich, głównie działalność Ludowych Zespołów Sportowych i Ludowych Klubów Sportowych oraz wiejskich organizacji młodzieżowych zarówno w okresie międzywojennym, jak i po 1945 roku[2]. Monografię Gminnego Ludowego Klubu Sportowego Pogoń 1947 Kłomnice można więc z powodzeniem zaliczyć do tego drugiego nurtu. Książka liczy 204 strony, w tym: 94 – część opisowa, 95 – aneksy, 4 – bibliografia, 2 – wykaz skrótów, 2 – streszczenie w języku angielskim, 7 – indeks nazwisk. W pracy słusznie zastosowano kryterium chronologiczno-rzeczowe, które wydaje się najbardziej odpowiednie dla wyczerpującego i wszechstronnego przedstawienia treści podejmowanej tematyki.

Źródła wykorzystane w pracy zostały podzielone na archiwalne, drukowane, prasę (cztery tytuły), relacje (jedna – Wiesława Dzionka) oraz źródła internetowe. Warto, by Autorzy przy ewentualnym kolejnym wydaniu monografii skorzystali z większej liczby relacji, co może wzbogacić książkę o dodatkowe informacje, dotyczące historii klubu. Podstawę źródłową uzupełniono literaturą, którą podzielono na publikacje i prace nieopublikowane (prace dyplomowe). Składa się ona z 25 pozycji, w tym: 6 – publikacje oraz 19 – prace nieopublikowane. Bibliografia stanowi więc należytą podstawę teoretyczną i bazę źródłową do powstania recenzowanej monografii.

Pracę otwiera wstęp, w którym Autorzy uzasadniają podjęcie tematu oraz ramy czasowe, obejmujące całość działalności klubu sportowego z Kłomnic od jego założenia w 1947 roku po 2021 rok. Ponadto przedstawiają aktualny stan

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[1] E. Małolepszy, T. Drozdek-Małolepsza, *Kultura fizyczna i turystyka w województwie wołyńskim w latach 1921–1939*, Wydawnictwo Nauka i Innowacje, Poznań 2020. Recenzja monografii: T. Jurek, [*rec.*] *Eligiusz Małolepszy, Teresa Drozdek-Małolepsza,* Kultura fizyczna i turystyka w województwie wołyńskim w latach 1921–1939*, Wydawnictwo Nauka i Innowacje, Poznań 2020, ss. 301*, „Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe" 2020, t. 3, nr 3, s. 119–124.

[2] Zob. np. E. Małolepszy, *Kultura fizyczna w działalności wiejskich organizacji młodzieżowych II Rzeczypospolitej*, Wydawnictwo im. S. Podobińskiego Akademii im. Jana Długosza w Częstochowie, Częstochowa 2015; E. Małolepszy, D. Bakota, A. Płomiński, *Sport w działalności Wojewódzkiego Zrzeszenia Ludowe Zespoły Sportowe w Opolu w latach 1999–2011. Zarys dziejów*, „Prace Naukowe Akademii im. Jana Długosza w Częstochowie. Kultura Fizyczna" 2013, t. 12, nr 2, s. 125–135; E. Małolepszy, T. Drozdek-Małolepsza, *Rekreacja fizyczna i sport dla wszystkich w działalności Krajowego Zrzeszenia Ludowe Zespoły Sportowe w latach 1989–2010*, [w:] A. Bukowa, K. Lukac (red.), *Rekreačný šport, zdravie, kvalita života. Monografie článkov z vedeckej konferencie s medzinárodnou účast`ou*, Košice 2012; E. Małolepszy, T. Drozdek-Małolepsza, *Stan badań nad dziejami kultury fizycznej i turystyki w działalności Zrzeszenia Ludowe Zespoły Sportowe w Polsce w latach 1975–2010*, [w:] J. Kwieciński, M. Tomczak (red.), *Wybrane zagadnienia kultury fizycznej – aktualny stan badań*, Konin 2012; E. Małolepszy, *Ruch sportowy w działalności Zrzeszenia Ludowe Zespoły Sportowe w Polsce w latach 1989–2009*, [w:] F. Kampka, S. Stępka (red.), *Wieś i ruch ludowy w Polsce i w Europie*, t. 2: *Idee, organizacje, Środowisko*, Warszawa 2012.

badań nad podjętą problematyką, wykorzystane metody badawcze i wysunięte problemy badawcze. W dalszej części wstępu podają wykorzystaną bazę źródłową i oceniają jej przydatność, a także przedstawiają zarys problematyki poszczególnych rozdziałów, szczegółowo wyjaśniając ich cezury czasowe, związane z ważnymi wydarzeniami w dziejach klubu. Konstrukcja wstępu spełnia więc wszystkie kryteria tego typu prac o charakterze historycznym.

Rozdział pierwszy pt. *Geneza i działalność Ludowego Zespołu Sportowego Pogoń Kłomnice do 1951 r.* nie posiada bardziej szczegółowego wewnętrznego podziału. Autorzy przedstawili w nim okoliczności powstania zespołu w Kłomnicach oraz trudne początki działalności sportowej w powojennej Polsce. Zwrócili również uwagę na dominującą rolę piłki nożnej jako wiodącego sportu w zespole (pierwsze mecze), wspomnieli też o aktywnym udziale członków np. w zawodach lekkoatletycznych czy turniejach tenisa stołowego. Kolejną kwestią poruszoną przez Autorów było opisanie zawiązania się struktur organizacyjnych zespołu z Kłomnic. Zarówno w przypadku działalności organizacyjnej, jak i rozgrywek sportowych E. Małolepszy i T. Drozdek-Małolepsza podają szereg nazwisk, a całość uzupełniają unikatowymi zdjęciami z początkowego okresu działalności Ludowego Zespołu Sportowego Pogoń Kłomnice, prawdopodobnie publikowanymi po raz pierwszy.

Wydaje się jednak, że warto byłoby przy kolejnym wydaniu monografii jako pierwszy rozdział przedstawić rys historyczny Kłomnic wraz z podstawowymi informacjami o charakterze administracyjnym i demograficznym oraz mapą miejscowości, a także dzieje kultury fizycznej w Kłomnicach i okolicy, co umiejscowiłoby działalność Pogoni 1947 Kłomnice w szerszym kontekście lokalnym, lub zamieścić informację, że przed powstaniem zespołu nie prowadzono w Kłomnicach zorganizowanej aktywności na polu kultury fizycznej. Byłoby to szczególnie przydatne dla osób spoza Kłomnic, do których trafi książka.

Rozdział drugi pt. *Działalność Ludowego Zespołu Sportowego Pogoń Kłomnice w latach 1951–1986* podzielono zgodnie z układem rzeczowym na dwa główne podrozdziały: *Uwarunkowania prawno-organizacyjne i finansowe* (podrozdział 1) oraz *Działalność sportowa* (podrozdział 2). W ramach tego ostatniego Autorzy dokonali bardziej szczegółowego podziału, uwzględniając: *Sekcję piłki nożnej* (2.1), *Sekcję tenisa stołowego* (2.2), *Sekcję piłki siatkowej* (2.3) i *Inne sekcje sportowe* (2.4). W pierwszym podrozdziale Autorzy przedstawili składy kolejnych zarządów LZS Pogoń Kłomnice, źródła finansowania zespołu, a także wyróżnienia, jakie otrzymywali poszczególni działacze z Kłomnic czy cały LZS za wkład w rozwój sportu wiejskiego. Z zaprezentowanego materiału wynika, że zespół z Kłomnic w latach 60. i 70. znajdował się w czołówce, jeśli chodzi o wyniki sportowe, na tle pozostałych ponad siedemdziesięciu Ludowych Zespołów Sportowych powiatu radomszczańskiego. W drugim podrozdziale Autorzy opisali działalność poszczególnych sekcji sportowych. Bardzo dokładnie przedstawiono

działalność sekcji piłki nożnej, podając szereg informacji o występach w klasie C, B oraz A, a także rozgrywkach Pucharu Polski (składy drużyn, wyniki, klasyfikacje poszczególnych sezonów). Całość uzupełniono licznymi zdjęciami. Podobny schemat zastosowano w przypadku opisu działalności kolejnych sekcji – tenisa stołowego, gdzie Autorzy przybliżyli występy i wyniki członków z rozgrywek ligowych i turniejów tenisa stołowego oraz piłki siatkowej. Z ostatniej części drugiego podrozdziału można dowiedzieć się, że w LZS Pogoń Kłomnice działała jeszcze sekcja lekkoatletyczna, kolarska oraz jedyny w tamtym czasie w ówczesnym województwie łódzkim klub motorowy (lata 60. i początek lat 70.).

Rozdział trzeci pt. *Działalność Ludowego Klubu Sportowego Pogoń Kłomnice w latach 1986–2011* i rozdział czwarty pt. *Działalność Gminnego Ludowego Klubu Sportowego Gmina Kłomnice w latach 2011–2021* zarówno pod względem struktury, jak i sposobu przedstawienia treści są bardzo zbliżone do rozdziału drugiego. W rozdziale trzecim i czwartym wyodrębniono dwa główne podrozdziały: *Uwarunkowania prawno-organizacyjne i finansowe* (podrozdział 1) i *Działalność sportowa* (podrozdział 2). Autorzy dokładnie uzasadnili przyjęte cezury czasowe, opisali składy poszczególnych zarządów, źródła finansowania, liczbę członków, trudności, jakie napotkał klub podczas transformacji ustrojowej, i rozbudowę infrastruktury klubu, której – szczególnie na przełomie lat 80. i 90. – dokonywali działacze i sportowcy w czynie społecznym. Nie pominięto również obchodów 60-lecia istnienia klubu. W rozdziale trzecim w ramach podrozdziału drugiego wyodrębniono jeszcze trzy części: *Sekcja piłki nożnej* (2.1), *Sekcja tenisa stołowego* (2.2), *Sekcja piłki siatkowej* (2.3), w rozdziale czwartym zaś dwie części: *Sekcja piłki nożnej* (2.1) oraz *Inne sekcje sportowe* (2.2). Autorzy konsekwentnie przedstawili działalność poszczególnych sekcji sportowych aż do 2021 roku, z dużą dokładnością opisując wyniki drużyn, zawodników i statystyki w poszczególnych sezonach. Z pewnością w całej historii klubu najbardziej prężnie i nieprzerwanie działała sekcja piłki nożnej, gdzie z czasem zaczęto trenować grupy młodzieżowe, a konsekwencją tego był historyczny awans klubu do ligi okręgowej w 2014 roku. Na tyle, na ile pozwolił zgromadzony materiał źródłowy, podano również przyczyny sportowych sukcesów i porażek oraz zmiany w pionie sportowym klubu. Całość uzupełniono tabelami i zdjęciami.

Pracę zamyka zwięzłe zakończenie. Autorzy dokonali podsumowania i próby oceny działalności klubu od założenia w 1947 roku do 2021 roku. Niezwykle istotną część pracy stanowią aneksy liczące 95 stron i obejmujące następujące elementy: *Zarządy GLKS Pogoń Kłomnice* (aneks 1), *Wyniki spotkań i tabele końcowe rozgrywek ligowych piłki nożnej z udziałem Gminnego Ludowego Klubu Sportowego Pogoń 1947 Kłomnice* (*1958–2021*) (aneks 2), *Wyniki i tabele końcowe rozgrywek ligowych tenisa stołowego z udziałem LZS Pogoń Kłomnice – kobiety* (*1977–1983*) (aneks 3), *Wyniki i tabele końcowe rozgrywek ligowych tenisa stołowego z udziałem LZS Pogoń Kłomnice – mężczyźni* (*1976–1989*) (aneks 4),

Plan pracy Ludowego Klubu Sportowego Pogoń w Kłomnicach na 1987 rok) (aneks 5), *Wykaz sportowców GLKS Pogoń według artykułu 60 lat „piłki kopanej". Jubileusz Pogoni Kłomnice* (aneks 6), legitymacje członków, karty zawodnicze, list gratulacyjny i uchwała Komisji ds. Licencji Klubowych Śląskiego Związku Piłki Nożnej (aneksy 7–12). Szczególną uwagę zwracają aneksy 2, 3 i 4, gdzie Autorzy z ogromną wnikliwością i dbałością o szczegóły dokonali rekonstrukcji i zebrali w jednym miejscu wszystkie dostępne wyniki sekcji piłki nożnej i tenisa stołowego Pogoni Kłomnice na przestrzeni lat.

Monografia Eligiusza Małolepszego i Teresy Drozdek-Małolepszej pt. *Zarys dziejów Gminnego Ludowego Klubu Sportowego Pogoń 1947 Kłomnice* (*1947–2021*) odtwarza ważny fragment dziejów lokalnej kultury fizycznej w Polsce po 1945 roku i może stanowić inspirację dla wszystkich chcących podejmować tematykę historii lokalnych klubów sportowych. Struktura przyjęta w monografii oraz różnorodne materiały źródłowe zgromadzone przez częstochowskich historyków warte są naśladowania. Tego typu prace są również istotne dla zachowania i utrwalenia pamięci o różnego rodzaju inicjatywach podejmowanych w lokalnych społecznościach, bywa bowiem tak, że wraz z odejściem działaczy czy pasjonatów historii danego klubu nikt nie kontynuował tradycji spisywania kronik bądź zbierania materiałów dotyczących działalności poszczególnych klubów, a te zachowane odchodziły w zapomnienie lub ulegały zniszczeniu. Autorzy, wykorzystując bogatą bazę źródłową, opracowali pierwszą monografię klubu sportowego z Kłomnic.

Informacje dla autorów

1. „Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe" ukazuje się jako kwartalnik. Publikacje powinny dotyczyć problemów badawczych, którymi zajmują się nauki o kulturze fizycznej (historia, teoria i socjologia kultury fizycznej, problemy rozwoju fizycznego, sprawności i wydolności fizycznej, turystyki i rekreacji, zdrowia i edukacji prozdrowotnej).
2. Publikujemy prace eksperymentalne, przeglądowe, doniesienia i artykuły polemiczne – w języku polskim i językach obcych, po uzyskaniu pozytywnej recenzji.
3. Procedura recenzowania materiałów autorskich publikowanych w „Sporcie i Turystyce. Środkowoeuropejskim Czasopiśmie Naukowym" jest dostosowana do wytycznych MNiSW „Dobre praktyki w procedurach recenzyjnych w nauce" oraz „Kodeksu etyki pracownika naukowego". Pierwszym etapem recenzowania nadesłanych prac jest recenzja wstępna dokonywana przez Redakcję czasopisma. Na tym etapie praca poddawana jest ocenie pod względem jej zgodności z profilem czasopisma, zachowania wymogów redakcyjnych obowiązujących w wydawnictwie oraz ogólnej poprawności językowej. Tekst spełniający wymogi recenzji wstępnej otrzymuje kod identyfikacyjny i zostaje skierowany do dwóch recenzentów będących specjalistami z zakresu nauk o kulturze fizycznej. Zgodnie z zasadą „double-blind review process", recenzenci, jak i autorzy, pozostają wobec siebie anonimowi. Recenzenci swoją opinię o pracy przedstawiają, wypełniając formularz recenzji.
4. Redakcja „Sportu i Turystyki. Środkowoeuropejskiego Czasopisma Naukowego", dbając o rzetelność w nauce, wdraża zapory „ghostwriting" oraz „guest authorship". Autorzy są zobowiązani do przedstawienia oświadczenia dotyczącego rzetelności nadesłanych prac, a w przypadku artykułów opracowanych przez kilku autorów – do ujawnienia wkładu poszczególnych osób w powstanie pracy. Wszelkie wykryte przypadki nierzetelności naukowej będą demaskowane, włącznie z powiadomieniem odpowiednich podmiotów (instytucje zatrudniające autorów, towarzystwa naukowe, stowarzyszenia edytorów naukowych itp.).
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6. Objętość nadsyłanych tekstów nie może przekraczać 15 stron (w tym tabele, wykresy, przypisy, bibliografia). Dokument powinien być napisany w formacie A4 standardowego maszynopisu (1800 znaków na stronie, marginesy: górny i dolny – 25 mm, lewy – 35 mm). Zaleca się stosowanie kroju Times New Roman, 12 punktów, odstęp 1,5 wiersza.
7. Pracę należy przesłać w wersji elektronicznej w edytorze Word (w formacie .doc lub .docx) z dwoma egzemplarzami wydruku. Praca powinna zawierać: a) imię i nazwisko autora lub autorów; b) tytuł naukowy, identyfikator ORCID oraz afiliację; c) tytuł publikacji; d) streszczenie pracy; e) słowa kluczowe pracy; f) dodatkowo w języku angielskim: tytuł pracy, streszczenie, słowa kluczowe (½ strony); 7) adres kontaktowy, nr telefonu, e-mail (służbowy).
8. W razie umieszczenia w pracy rycin, tabel itp. pochodzących z opracowań zamieszczanych
   w innych czasopismach lub publikacjach książkowych autor ma obowiązek uzyskania zgody na ich wykorzystanie.
9. Tabele i materiał ilustracyjny (ryciny, wykresy, fotografie) można zamieścić w osobnych plikach i dokładnie opisać. Miejsca ich wstawienia należy zaznaczyć na prawym marginesie wydruku tekstu.

a) Stopień pisma w tabeli powinien wynosić 9 p., zaś szerokość tabeli nie może przekraczać 125 mm. Nie stosuje się innego formatowania tabeli niż siatka. Tytuł umieszcza się nad tabelą. Przypisy do tabeli umieszcza się bezpośrednio pod nią. W tabeli nie zostawia się pustych rubryk.

Obowiązują następujące znaki umowne:

pauza (—) – zjawisko nie występuje,

zero (0) – zjawisko istnieje, jednakże w ilościach mniejszych od liczb, które mogą być wyrażone uwidocznionymi w tabeli znakami cyfrowymi,

kropka (.) – zupełny brak informacji lub brak informacji wiarygodnych,

znak x – wypełnienie rubryki ze względu na układ tabeli jest niemożliwe lub niecelowe,

„w tym” – oznacza, że nie podaje się wszystkich składników sumy.

b) Wykresy należy sporządzać za pomocą programów Microsoft Office (Excel, Microsoft Graph). Szerokość wykresu nie może przekraczać 125 mm. Numer i tytuł wykresu zapisuje się pod wykresem. Wykresy sporządzane innymi programami i wklejane jako rysunki muszą spełniać następujące kryteria:

– minimalna rozdzielczość to 300 dpi,
– dane i opisy zamieszczone na wykresie muszą być zapisane Times New Roman w stopniu 9 p.,
– nie należy projektować trójwymiarowych wykresów, które będą nieczytelne; zaleca się wykresy jednowymiarowe,
– nie stosuje się obramowań pola wykresu ani obramowań legendy,
– nie stosuje się tła innego niż białe,

– nie powtarza się tytułu wykresu ani zapisu „Źródło:…" na obszarze kreślenia.

c) Wielkość ilustracji musi być dostosowana do formatu B5. Minimalna rozdzielczość ilustracji to 300 dpi.

10. Zasady opisów bibliograficznych:

a) w pracach z zakresu humanistycznych i teoretycznych podstaw kultury fizycznej i turystyki należy stosować przypisy dolne; obowiązuje alfabetyczny układ bibliografii (pozycje bibliografii nie są numerowane);

– przykładowe przypisy: A. Pawlikowska-Piechotka, M. Piechotka, *Dzieje budowli sportowych*, Wydawnictwo Naukowe Akademii Wychowania Fizycznego Józefa Piłsudskiego w Warszawie, Warszawa 2017, s. 50; W. Motoczyński (red.), *Polski Związek Piłki Nożnej. Zarys historii 1919–1994*, Wydawnictwo Sport i Turystyka, Warszawa 1994, s. 33; R. Stefanik, *Kultura fizyczna w środowisku wiejskim na Pomorzu Zachodnim w latach 1945–1950*, [w:] T. Drozdek-Małolepsza (red.), *Z najnowszych dziejów kultury fizycznej i turystyki w Polsce*, t. 1: *Dzieje kultury fizycznej i turystyki w Polsce w końcu XIX i XX w.*, Wydawnictwo Akademii im. Jana Długosza w Częstochowie, Częstochowa 2011, s. 215; J. Chełmecki, *Wychowankowie Związku Towarzystw Gimnastycznych „Sokół" w Polsce w igrzyskach olimpijskich 1924–1936*, „Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe" 2020, t. 3, nr 1, s. 60.

– przykładowe opisy bibliograficzne: Pawlikowska-Piechotka A., Piechotka M., *Dzieje budowli sportowych*, Wydawnictwo Naukowe Akademii Wychowania Fizycznego Józefa Piłsudskiego w Warszawie, Warszawa 2017; Motoczyński W. (red.), *Polski Związek Piłki Nożnej. Zarys historii 1919–1994*, Wydawnictwo Sport i Turystyka, Warszawa 1994; Stefanik R., *Kultura fizyczna w środowisku wiejskim na Pomorzu Zachodnim w latach 1945–1950*, [w:] T. Drozdek-Małolepsza (red.), *Z najnowszych dziejów kultury fizycznej i turystyki w Polsce*, t. 1: *Dzieje kultury fizycznej i turystyki w Polsce w końcu XIX i XX w.*, Wydawnictwo Akademii im. Jana Długosza w Częstochowie, Częstochowa 2011, s. 211–224; Chełmecki J., *Wychowankowie Związku Towarzystw Gimnastycznych „Sokół" w Polsce w igrzyskach olimpijskich 1924–1936*, „Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe" 2020, t. 3, nr 1, s. 59–83; http://dx.doi.org/10.16926/sit.2020.03.04.

b) w pozostałych pracach numer pozycji bibliograficznej podajemy w nawiasie kwadratowym wewnątrz tekstu głównego; obowiązuje alfabetyczny układ bibliografii (pozycje bibliografii są numerowane w nawiasach kwadratowych). Przykład opisów bibliograficznych:

– [1] Pilicz S. (1988): *Zmiany sekularne w rozwoju fizycznym i sprawności ruchowej studentów polskich*. Wychowanie Fizyczne i Sport, 4, s. 3–12; [2] Tatarczuk J. (2002): *Charakterystyka porównawcza struktury somatycznej i typologicznej słuchaczy I roku kierunków pedagogicznych i wychowania fizycz-*

nego Wyższej Szkoły Pedagogicznej w Rzeszowie. [w:] Malinowski A., Tatarczuk J., Asienkiewicz R. (red.): *Ontogeneza i promocja zdrowia w aspekcie medycyny, antropologii i wychowania fizycznego*. Uniwersytet Zielonogórski. Zielona Góra, s. 369–373; [3] Wawrzyniak G. (1997): *Normy wybranych cech somatycznych kandydatów na studia wychowania fizycznego*. AWF. Poznań.

c) bez względu na język artykułu, źródła (tytuły publikacji, czasopism, nazwy archiwów) oraz nazwy własne (np. Zrzeszenie Ludowe Zespoły Sportowe, Dar Pomorza) podajemy w brzmieniu oryginalnym, ewentualne tłumaczenie podajemy w nawiasie kwadratowym;

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The following conventional symbols apply:

pause (—) – the phenomenon does not occur,

zero (0) – the phenomenon exists, however in quantities smaller than the numbers that can be expressed in the table with numerical digits,

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b) Charts should be prepared using Microsoft Office programs (Excel, Microsoft Graph). The width of the chart must not exceed 125 mm. The chart number and title are saved below the graph. Charts made with other programs and pasted as drawings must meet the following criteria:

– the minimum resolution is 300 dpi,
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a) footnotes should be used in articles concerning humanistic and theoretical foundations of physical culture and tourism; the alphabetical arrangement of the bibliography applies (bibliographic entries are not numbered);

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b) in other papers, the number of a bibliographic item is enclosed in square brackets within the main text; the alphabetical arrangement of the bibliography applies (bibliographic entries are numbered in square brackets). A sample of bibliographic descriptions:

– [1] Pilicz S. (1988): *Zmiany sekularne w rozwoju fizycznym i sprawności ruchowej studentów polskich*. Wychowanie Fizyczne i Sport, 4, pp. 3–12; [2] Tatarczuk J. (2002): *Charakterystyka porównawcza struktury somatycznej i typologicznej słuchaczy I roku kierunków pedagogicznych i wychowania fizycznego Wyższej Szkoły Pedagogicznej w Rzeszowie*. [in:] Malinowski A., Tatarczuk J., Asienkiewicz R. (eds.): *Ontogeneza i promocja zdrowia w aspekcie*

medycyny, antropologii i wychowania fizycznego. Uniwersytet Zielonogórski. Zielona Góra, pp. 369–373; [3] Wawrzyniak G. (1997): *Normy wybranych cech somatycznych kandydatów na studia wychowania fizycznego*. AWF. Poznań.

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– sample of a biographic description (language of the article: English, source: Polish): Z. Szafkowski, *Światowe Igrzyska Polonijne z lat 1999–2000* [*World Polonia Games in the years 1999–2000*], [in:] B. Woltmann (ed.), *Z najnowszej historii kultury fizycznej w Polsce* [*From the most recent history of physical culture in Poland*], vol. 5, Gorzów Wlkp. 2002.

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