

Design of Public Service Products of Sports Art Fitness under the Psychological Characteristics of Different Ages

Zhou Yue¹

Abstract

Objective: Different age stages will have different emphases in the selection of sports art fitness public service products. Therefore, this paper studies the design of sports art fitness public service products in light of the psychological characteristics of different ages.

Methods: 150 middle-aged women with line dancing were selected as the research object, and 150 ordinary people who did not participate in physical exercise were used as the control group to design sports art fitness public service products according to the age of the exercisers.

Results: The average score of spa (Social physical anxiety) is the highest for women under 30 years old, followed by women between 31-44 years old, and the lowest for women over 45 years old. Women with medium amount of exercise correspond to the highest spa, and women with large amount of exercise correspond to the lowest spa. The women who keep fit for half a year have the highest spa, followed by those who keep fit for 1-3 years, and finally those who keep fit for more than 3 years;

Conclusion: This paper analyzes the psychological characteristics of different age stages and the factors affecting each stage, with a view to improve the utilization of sports art and fitness public service products.

Keywords: age stages; Psychological characteristics; sports art fitness; public service products

Introduction

Teenagers' physique is worrying key concern, an and issue that needs extensive attention from individuals, parents, families and the society at large, The issue entails muquestions: (Cao et al., 2016). "If you don't have a strong physique, what about the pillars?" How many people don't wear myopia glasses in the classroom of any middle school or university? How many people in the physical education course are really following the teacher to complete the practice of a class without acting lazy? In their spare time, how many people choose to sweat in the stadium instead of sleeping in the bedroom, watching videos and playing video-games until dawn? When the takeout is delivered downstairs, they complain about why they can't be delivered to the door? A common criticism against physical fitness test standards is:]. Why is it so "harsh"?. "The purpose of sports is not only to preserve health, but also to defend the country. If this trend continues, sports will not garner the attention and engagement of young people on how to preserve health?

How to defend the country? Sports is closely related to people (Chakraborty et al., 2017). If we want to improve the current situation of teenagers' physique in China, the state and society should actively undertake the responsibility and take measures to materialise this

mission. First, we should effectively reduce the burden of teenagers' cultural learning, guide students to pay attention to physical health, encourage them to participate in sports, and take measures to monitor and enhance the physique of teenagers; At the same time, it is important to accelerate the complete transformation of the stereotype and the practice of sports of "emphasizing literature and neglecting martial arts", that is, the stereotype of "developed limbs and simple mind". For this reason, it is important to comprehensively and qualitatively promote the process of quality education, actively publicize the importance of physical exercise, and promote the concept of physical health into the minds and lives of people (Rauthmann & Sherman, 2018); Secondly, we must establish and improve the adolescent physical health monitoring system, carry out systematic intervention for adolescents with physical problems, and guide parents to pay attention to them (Bone et al., 2015). In view of this research problem, Zeng et al. (2020) clearly defined the concept of sports art. Sports art broadly refers to all kinds of artistic phenomena and artistic sports in sports and sports related fields; Sports art in a narrow sense refers to a social sports and cultural activity with aesthetic standardized organized and rhythmic physical exercise as a means to reflect people's physical exercise ability, promote people's all-round development, and contain strong aesthetic and artistic

¹ School of Art and Design, Wuhan Institute of Technology, Wuhan, China
Email: 1214483213@qq.com

elements (Zeng et al., 2020). Physical exercise is important for individual health (Chekroud et al., 2018; Ertan & Özyol, 2020; Liang et al., 2020; Zopf et al., 2017) and requires art fitness. Koval and Ivashkevych (2020) and others believe that the design of sports art fitness public service products takes into account the actual fitness needs of students in terms of concept, implementation methods and means. According to the different physiological and psychological development characteristics of students at different school-age stages and their different needs for fitness projects, the designed public service products of various sports art projects such as broadcast gymnastics, mass aerobics, sports dance, cheer leading, line dance and yoga can help meet the students' needs Cultivation of art during physical exercise (Koval & Ivashkevych, 2020). Miller and Kaiser (2018) and others believe that "sports public service" is more appropriate than "public sports service", and redefined the concept of "sports public service" from the perspective of sports public interest demand and value choice, That is, "in order to realize and maintain the sports public interests of the public or social community and ensure the realization of their sports rights and interests, the public sector with the government as the core, in accordance with its legal responsibilities, should public power and takes different forms of sports public goods as the carrier through various ways and means" (Miller & Kaiser, 2018).

Based on the current research, this paper puts forward the design of sports art fitness public service products under the psychological characteristics of different ages. To achieve this, we select 150 middle-aged women with line dance as the research object, and 150 ordinary people who basically do not participate in physical exercise as the control group. This is followed by designing the public service products of sports art and fitness according to the age of the exerciser. Based on the current research, this paper puts forward the design of sports art fitness public service products in light of the psychological characteristics of different ages. We select 150 middle-aged women with line dance as the research object, and 150 ordinary people who basically do not participate in physical exercise as the control group, then design the public service products of sports art and fitness according to the age of the exerciser. The average score of spa is the highest for women under 30 years old, followed by women between 31-44 years old, and the lowest for women over 45 years old. Women with moderate amount of exercise have the highest spa, and those with large amount of exercise have the lowest Spa: in the stage under the age of 30, women with large amount of exercise have the highest spa score, followed by those with medium amount of exercise,

and those with a small amount of exercise have the lowest Spa; Therefore, spa is inversely proportional to the duration of fitness. Women who keep fit for half a year have the highest spa, followed by those who keep fit for 1-3 years, and finally those who keep fit for more than 3 years. This paper analyzes the psychological characteristics of different age stages and related matters/factors, with an aim to improve the utilization of sports art fitness public service products.

In the field of sports, in recent years, with the continuous development of the national economy, China's sports public service level continues to improve, social sports public service demand is growing. Square dancing, line dancing, sports dance and a series of sports arts have become the first choice of national fitness. However, it is found in the survey that there are still a number of problems between the supply and demand of such sports public service products.

Public Service Products of Sports Art Fitness

Public service products are a basic individual and communal need. Daily routine activities require public service products for people which is one of the basic rights of people living in any community. Public service products include various products/services such as education, electricity, medical services, environmental protection, public transport, food, shelter etc. All these products are the fundamental needs of people and required for every individual in any community or nation who aspires to lead a fulfilling and wholesome life. Unavailability of these products to the general public can lead to negative effects. On the other hand, requirement of the people in relation to the sports products is the public service products of support. Various types of sports require different sports products. The requirement of products is also based on the age of the individual. A young individual requires different products and older individuals require different types of products of sports. Various organizations develop different sports art fitness products (Jabbari et al., 2020; Zhang et al., 2020) as per the requirement of general public. Different age stages are bound to have different emphases or priorities in terms of the selection of sports art fitness public service products.

Fitness can be described as the condition of being physically as well as mentally fit (Vancampfort et al., 2021) and showing signs of good health. It is the capability to carry out everyday tasks with vigor as well as alertness, without unnecessary fatigue, and with ample energy to enjoy life. Fitness is the basic necessity of every individual (García-Hermoso et al., 2019; Sun et al., 2022) and it

require different products. Companies make various products for the development of fitness. General public service related to sports fitness requires different products which are offered and provided by the companies working on fitness products.

In the current study, fitness is understood as art. This is because the maintenance of fitness at any age require arts as everyone cannot maintain the fitness. Therefore, it is one of the essential arts needed to learn by the individuals if they wish to remain fit in any age. There are numerous ways that fitness can be viewed or understood as an art. Various forms of exercise can be established as art, such as martial arts exercises like boxing exercise or Kung Fu exercise, or dancing art, such as Jazz, Hip hop, or ballet. Several of the art components as well as principles are utilized in fitness as well. Simple, art fitness can be described as the art of exercise to remain fit. The intent of art fitness is to give the trainee abilities to essentially interpret it (the art) for themselves." During each period, members were taken to view three distinct works of art, and then invited to a series of questions. However, art fitness requires various products for exercise and these products differ in relation to the age. Young and old people may have needs for different products of fitness.

Methodology

Research object and method

Determination and screening of research objects

Referring to most previous studies, this study selects 150 middle-aged women with line dancing as the research object by using the stratified random sampling method, and 150 ordinary people who basically do not participate in physical exercise as the control group. The specific age stratification is shown in Table 1:

Table 1

specific conditions of research objects

	Under 30 years old	31-44 years old	Over 45 years old
Observation group	50	50	50
Control group	50	50	50

Questionnaire survey method

The respondents independently fill in the questionnaire on basic information and physical exercise, mainly including age, purpose of participating in physical exercise, fitness duration and physical activity level: in the design of physical activity level scale, the amount of exercise is evaluated in three dimensions: physical activity intensity, physical activity time and physical activity frequency. The integral calculation formula of the scale is: amount of

exercise= (exercise Time-1) × Motion frequency×Exercise intensity. The scale divides the three dimensions of intensity, time and frequency of sports activities into five levels, which are recorded as 1-5 points. 100 points of exercise volume is the full score, and 0 points is the basic score. In this study, small momentum ≤ 19 points, medium exercise volume is 20-42 points, and large exercise volume > 42 points (Guragac et al., 2016).

Description of sports art fitness public service products

Sports art fitness public service products primarily have the attribute of "products", which are produced to promote people's health and serve the needs of others. Therefore, the definition of the concept of sports art fitness public service products should be: "For the purpose of meeting the fitness needs and healthy development of social members, the general name of sports service public services and products provided by the government or other authoritative public departments, which fully reflect the aesthetic standardization of organized and rhythmic physical exercise as a means, reflect people's physical exercise ability, promote people's all-round development, and contain strong aesthetic elements and artistic value (Afanasenko, 2018).

Design public service products for sports art fitness according to the age of exercisers

Understanding the scientific division of age stage is the primary condition for designing public goods of sports art fitness service according to the different ages of exercisers. According to the law of human growth and development, morphological, physiological and psychological characteristics and changes, the ages of children and adolescents are divided into infancy (28 days to 1 year after birth), early childhood (2-3 years), preschool children (4-6 years), school-age children (7-12 years), adolescence (13-17 years) and youth (18-25 years). The above-mentioned division of youth age stage corresponds to the division of age stage, which takes the age of 44 as the first age dividing point, and all under the age of 44 are collectively referred to as young people. In infancy, children's physiological and psychological development is not very sound, and they need parents' guidance and care most of the time. Therefore, this age stage is not included in the product design of this subject (Vachkov & Zaruba, 2018).

Results and analysis

Comparison of social physical anxiety among women of different ages

As shown in Figure 1, the highest average score of spa is women under 30 years old, followed by women between 31-44 years old. The lowest average score of spa is women over

45 years old. With the growth of age, the average spa score of women participating in fitness showed an obvious downward trend. Different from fitness, non-fitness women have the highest spa score at the age of 31-44, and the lowest score is also women over 45. The comparison between fitness and non-fitness shows that the spa scores of non-fitness women at all ages are higher than those of fitness members. There is no significant difference under the age of 30, and the largest difference is in the age of 31-44.

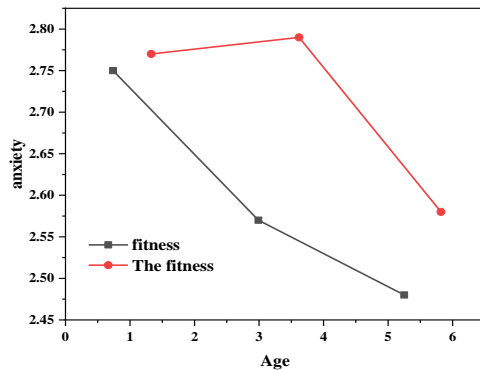


Figure .1 Comparison of social physical anxiety among women of different ages

Social physical anxiety and physical activity of women of different ages

As shown in Figure 2, on the whole, women with medium exercise amount correspond to the highest spa, and women with large exercise amount correspond to the lowest Spa: at the stage under 30 years old, women with large exercise amount have the highest spa score, followed by women with medium exercise amount, and women with small exercise amount have the lowest SPA. At the age of 30-44, the spa scores of women with small amount of exercise are the same as those with large amount of exercise, and the spa of women with medium amount of exercise is the lowest. At the stage of over 45 years old, the spa of women with small amount of exercise is the highest, and that of women with large amount of exercise is the lowest.

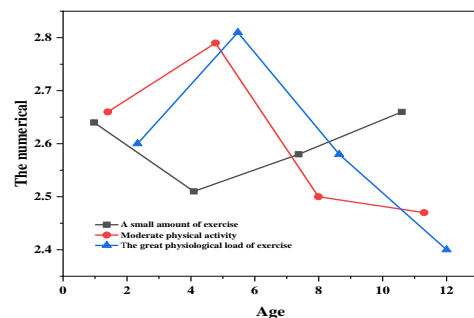


Figure. 2 Comparison of social physical anxiety and physical activity among women of different ages

Social physical anxiety and fitness duration of women of different ages

As shown in Figure 3, on the whole, spa is inversely proportional to the duration of fitness. Women who keep fit for half a year have the highest spa, followed by those who keep fit for 1-3 years, and finally those who keep fit for more than 3 years. The relationship between spa and fitness duration of women under the age of 30 is consistent with the overall trend: women under the age of 30-44 with fitness lasting for 1-3 years have the highest spa degree, the trend is significantly different over the age of 45, and women with fitness lasting for 1-3 years have the lowest spa.

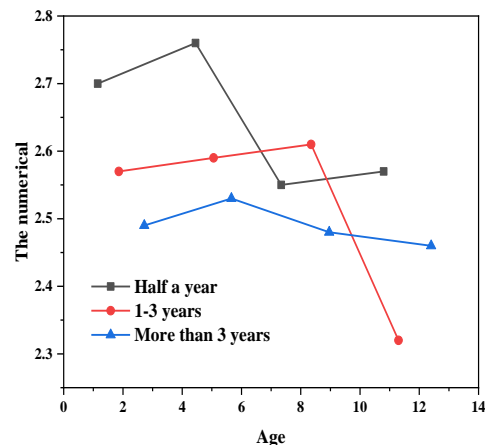


Figure. 3 Comparison of social physical anxiety and fitness duration among women of different ages

Analysis of physiological and psychological characteristics at different ages

Analysis of physiological and psychological characteristics of children and adolescents. The stage of children aged 7-17 is called the second peak of growth and development. It is an important stage that individuals must experience in their growth. At this stage, the individual's physiological and psychological growth is not complete and mature, however they have entered a period of rapid development. Compared with other age stages, this stage has unique physiological and psychological characteristics. In addition, during the age of 7-17, the development of coordination, sensitivity and speed of sports ability has gradually entered the peak of development, and other sports abilities are also in the stage of gradual improvement during this period. At the age of 7-12, the development of coordination quality is faster than other qualities, and then it will gradually slow down, and even some stagnation will occur. When designing the public service products of sports art fitness for children and adolescents, we must pay attention to the exercise of their coordination quality, such

as adding more movements with the cooperation of upper and lower limbs or movements with rhythmic changes in music beat. Pay attention to the control of the strength of the complete set of products, and try not to use actions with long time, high strength and high requirements for strength quality, so as to avoid unnecessary damage to the limbs. At different stages, primary school students have weak self-control because of incomplete psychological development; Middle school students gradually enter puberty, and rebellious psychology begins to appear, gender awareness is increased, and emotional and moral problems begin to come to surface. Therefore, when designing the public products of sports art fitness service, we must

choose representative ones that can arouse interest or resonance in different age stages in the choice of music, and cooperate with the action design in line with the age stage to stimulate their interest in physical exercise.

At the young age of 18-44, the physical and psychological development of the human body is becoming more mature. The development of bones, joints, muscle strength and various body systems reaches its peak, which is the golden stage of individual development. At this stage, people have strong psychological deployment ability, endurance ability, and social communication ability, and have strong control ability over their own behavior (Table 2), and their psychological development has fully matured.

Table 2

Summary Table of Physiological and Psychological Characteristics of Youth

Age stage	Physiological characteristics	Psychological characteristics
Youth 18~44 years old	1. Bones: tough and not easily deformed 2. Joints: stable and not easy to dislocate 3. Muscles: muscle fiber strength is significantly enhanced, and the anti-fatigue ability is enhanced 4. Respiratory and cardiovascular system: fully developed, strong blood and oxygen supply capacity, endurance peak	1. Psychological development has matured, and the ability of logical memory and movement memory is outstanding 2. Have a clear judgment on one's ability to act, can control one's emotions, and have a certain goal 3. Strong observation ability and judgment ability

Analysis of the physiological and psychological characteristics of middle-aged and elderly people

The age stage of 45-74 years and above is called the middle-aged and elderly stage. At this stage, the physiological functions of the human body begin to undergo various degenerative changes, such as muscle atrophy, tooth loss, bone deformation, and joint inflammation. In terms of mental function, the ability to perceive is gradually decreasing, and symptoms such as memory decline and unresponsiveness are prone to appear. When designing sports art fitness public service products for middle-aged and elderly practitioners, we should pay close attention to the physiological and psychological characteristics of the service object and whether there are special chronic diseases or other diseases. In motion design, the intensity and amplitude should not be too large. After years of experience, the middle-aged and elderly people acquire a unique understanding of life and have preferences different from other age stages just as in the choice of music.

Analysis of representative works in youth stage

Through the waves of limbs, the swing of hip joints, 8 characters and other movements, it shapes the tall, straight and sexy young people. In typical movements, locking step

Cha Cha, chasing step Cha Cha and turning are also important factors needed to maintain good exercise habits and promote physical health. Within the family, parents should cultivate their children's awareness of physical fitness from an early age, actively guide their children to participate in sports activities, stimulate their children's enthusiasm for sports activities, and set an example to adhere to this good living habit; School physical education is an important course to promote students' physical and mental health (Deng et al., 2020; Legey et al., 2016; Moemeni Piri et al., 2015). We must adhere to and implement the guiding ideology of "health first", understand ensuring students' physical health as the primary task, promote students' enthusiasm for learning sports and help students master sports skills and sports health knowledge, so as to cultivate reserve talents who can better adapt to the development need of modernization. At the social level, we should publicize the sports spirit, make use of the competitiveness and appreciation of sports competitions to attract the attention of the majority of young people, and encourage them to pay attention to sports and participate in them. At the same time, it is important to strengthen the social effect of positive energy of sports stars, and use the power of idols to guide teenagers to participate in sports. Families, schools and he

society need to instill the right sports awareness at the right time of teenagers' physical development or earlier, trigger teenagers' longing and pursuit for sports, and encourage them participate in sports and give it best of head and heart, so that they can continue to maintain good lifestyles and habits after adulthood. In the final analysis, no matter what efforts are made, they are ultimately in place to promote the youth's subjective enthusiasm for sports and make them feel the happiness and acquire the good health brought by sports. If teenagers are unable to fundamentally experience the recreation and experience of sports, everything is in vain, so "sports must start automatically". Environment with a focus on the development of "new normal" and "strengthening sports public service function, construction of sports public service system", improves the level of sports public services the strategic goal of, is part of the 12th five-year plan. Gymnastics, fitness dance, dancing, sports dance, and popular calisthenics arts project have become popular forms of exercise. At present, the supply for public service and products of sports art and fitness is in short, and the demand for imitation wave type is gradually transforming and evolving into the increased demand for individuality and diversity.

Conclusion

This paper puts forward the design of public service products for sports art fitness under the psychological characteristics of different ages. Through a questionnaire survey, it is found that the high social physical anxiety of women under the age of 30 corresponds to the purpose of fat reduction and shaping, which is related to large amount of exercise and short fitness duration. The exercise purpose of improving health corresponding to high spa for women aged 30-44 is related to large amount of exercise and small amount of exercise, and the fitness lasts for more than 1-3 years. High spa for women over 45 years old corresponds to the purpose of reducing fat and shaping, which is related to small amount of exercise, and the duration of fitness is mostly under six months.

Different age stages will have different emphases when choosing public service products of sports art and fitness. Therefore, in the design of such products, the physiological

and psychological characteristics of different ages should be fully considered in the choice of music style, the overall structure of the movement, the control of the number of beats of the movement, and the difficulty of the whole set of movements. Both upper and overall exercise intensity should be reasonably controlled and fully considered. In addition, the innocence of children and teenagers, artless, youthful vigor, fashion are also factors to consider when designing these products. The aesthetic and artistic needs and aspirations of the middle-aged and elderly should also be integrated into the design of the products, adding the artistry and appreciation of fitness products, and improving the overall texture of the products.

When researchers design sports art fitness public service products according to the psychological characteristics of different ages, they do not fully understand the user's intention, motivation and thinking process, which is bound to have an influence on the research results, and this needs to be improved in the future through additional research on the subject.

Implications of the Study

Art fitness is one of the most important potential areas of research; however, this area is not considered at length in previous studies. Although, art fitness is highlighted in several previous studies, a formal study is not carried out on art fitness. Therefore, the current study majorly contributes to theory by considering the role and scope of art fitness. Furthermore, art fitness is considered in relation to public service products which is examined for this time through the present study. Only in rare cases has any study documented public service products related to the art fitness. Thus, this study has major theoretical implications. Furthermore, this study is practically valuable. As this study has theoretical implications, it also study also a number of useful and insightful practical implications. In particular, this study is important for practitioners engaged in the work of promoting art fitness. Results of the study are beneficial for companies making public service products of art fitness. On the basis of the findings of the present research, it is recommended that companies should design their products in relation to the age of the people.

References

- Afanasenko, V. (2018). Design development and investigation of the characteristics of jalousie separation packing. *Chemical and Petroleum Engineering*, 53(11), 720-726. <https://doi.org/10.1007/s10556-018-0411-5>
- Bone, H. G., Dempster, D. W., Eisman, J. A., Greenspan, S., McClung, M. R., Nakamura, T., . . . Santora, A. (2015). Odanacatib for the treatment of postmenopausal osteoporosis: development history and design and participant characteristics of LOFT, the Long-Term Odanacatib Fracture Trial. *Osteoporosis International*, 26(2), 699-712. <https://doi.org/10.1007/s00198-014-2944-6>
- Cao, X., Yu, D., Xiao, M., Miao, J., Xiang, Y., & Yao, J. (2016). Design and characteristics of a laminar plasma torch for materials processing. *Plasma Chemistry and Plasma Processing*, 36(2), 693-710. <https://doi.org/10.1007/s11090-015-9661-6>

- Chakraborty, K., Mondal, S., & Mukherjee, K. (2017). Analysis of product design characteristics for remanufacturing using Fuzzy AHP and Axiomatic Design. *Journal of Engineering Design*, 28(5), 338-368. <https://doi.org/10.1080/09544828.2017.1316014>
- Chekroud, S. R., Gueorguieva, R., Zheutlin, A. B., Paulus, M., Krumholz, H. M., Krystal, J. H., & Chekroud, A. M. (2018). Association between physical exercise and mental health in 1-2 million individuals in the USA between 2011 and 2015: a cross-sectional study. *The Lancet Psychiatry*, 5(9), 739-746. [https://doi.org/10.1016/S2215-0366\(18\)30227-X](https://doi.org/10.1016/S2215-0366(18)30227-X)
- Deng, C.-H., Wang, J.-Q., Zhu, L.-M., Liu, H.-W., Guo, Y., Peng, X.-H., . . . Xia, W. (2020). Association of web-based physical education with mental health of college students in Wuhan during the COVID-19 outbreak: cross-sectional survey study. *Journal of medical Internet research*, 22(10), e21301. <https://doi.org/10.2196/21301>
- Ertan, G. A., & Özyol, F. C. (2020). Effects of Health-Related Knowledge and Aerobic Exercise on Lower Secondary School Students' Obesity Awareness and Physical Activity Levels. *Asian Journal of Education and Training*, 6(2), 297-303. <https://doi.org/10.20448/journal.522.2020.62.297.303>
- García-Hermoso, A., Ramírez-Campillo, R., & Izquierdo, M. (2019). Is muscular fitness associated with future health benefits in children and adolescents? A systematic review and meta-analysis of longitudinal studies. *Sports Medicine*, 49(7), 1079-1094. <https://doi.org/10.1007/s40279-019-01098-6>
- Guragac, A., Yilmaz, S., & Aydur, E. (2016). 540 Mental and psychological characteristics of young adult males with primary nocturnal enuresis: A case-control observational study. *European Urology Supplements*, 3(15), e540. [http://dx.doi.org/10.1016%2FS1569-9056\(16\)60542-0](http://dx.doi.org/10.1016%2FS1569-9056(16)60542-0)
- Jabbari, Z., Kashef, S. M., & Keshkar, S. (2020). Developing a model for the relationship between cultural factors and customer attraction in electronic marketing of the sports industry. *Sport Science*, 13(1), 43-49. <https://www.cabdirect.org/cabdirect/abstract/20203211296>
- Koval, I., & Ivashkevych, E. (2020). Psychological Characteristics of Explication of Narration and Time in Graphic Novels. *ПРОБЛЕМИ СУЧАСНОЇ ПСИХОЛОГІЇ*(48), 133-153. <https://doi.org/10.32626/2227-6246.2020-48>
- Legey, S., Lamego, M. K., Lattari, E., Campos, C., Paes, F., Sancassiani, F., . . . Nardi, A. E. (2016). Relationship among body image, anthropometric parameters and mental health in physical education students. *Clinical practice and epidemiology in mental health: CP & EMH*, 12, 177. <https://dx.doi.org/10.2174%2F1745017901612010177>
- Liang, H., Yue, Z., Liu, E., & Xiang, N. (2020). How does social capital affect individual health among the elderly in rural China?—Mediating effect analysis of physical exercise and positive attitude. *PloS one*, 15(7), e0231318. <https://doi.org/10.1371/journal.pone.0231318>
- Miller, R. M., & Kaiser, R. S. (2018). Psychological characteristics of chronic pain: a review of current evidence and assessment tools to enhance treatment. *Current pain and headache reports*, 22(3), 1-6. <https://doi.org/10.1007/s11916-018-0663-y>
- Moemeni Piri, S., Hashemi Afosi, M., Rezaeinassab, A., Noroozi, S., Maghbolli, S., & Babai Mazreno, A. (2015). The effects of physical education course on mental health of students in Bu-Ali Sina University, Hamedan-Iran. *International Journal of Pediatrics*, 3(2.1), 67-73. <http://eprints.mums.ac.ir/id/eprint/6676>
- Rauthmann, J. F., & Sherman, R. A. (2018). The description of situations: Towards replicable domains of psychological situation characteristics. *Journal of Personality and Social Psychology*, 114(3), 482-488. <https://doi.org/10.1037/pspp0000162>
- Sun, F., Zhang, J., Ma, J., Wang, C., Hu, S., & Xu, D. (2022). Evolution of the Spatial-Temporal Pattern and Social Performance Evaluation of Community Sports and Fitness Venues in Shanghai. *International Journal of Environmental Research and Public Health*, 19(1), 274.
- Vachkov, I., & Zaruba, D. (2018). Psychological Characteristics of Self-Image and Self-Assessment in Adolescents with Impaired Renal Functioning of Different Severity. *Clinical Psychology and Special Education*, 7(3), 45-65. <https://doi.org/10.17759/cpse.2018070303>
- Vancampfort, D., Kimbowa, S., Ward, P. B., & Mugisha, J. (2021). Physical activity, physical fitness and quality of life in outpatients with a psychotic disorder versus healthy matched controls in a low-income country. *Schizophrenia Research*, 229, 1-2. <https://doi.org/10.1016/j.schres.2021.01.019>
- Zeng, H., Zheng, Z., & Wang, P. (2020). Characteristics of psychological crisis and its risk factors among adolescents in China. *Journal of Child and Family Studies*, 29(9), 2443-2452. <https://doi.org/10.1007/s10826-020-01773-7>
- Zhang, H.-L., Zhang, H.-J., & Guo, X.-T. (2020). Research on the future development prospects of sports products industry under the mode of e-commerce and internet of things. *Information Systems and e-Business Management*, 18(4), 511-525. <https://doi.org/10.1007/s10257-018-0382-2>
- Zopf, E. M., Newton, R. U., Taaffe, D. R., Spry, N., Cormie, P., Joseph, D., . . . Galvao, D. A. (2017). Associations between aerobic exercise levels and physical and mental health outcomes in men with bone metastatic prostate cancer: a cross-sectional investigation. *European Journal of Cancer Care*, 26(6), e12575. <https://doi.org/10.1111/ecc.12575>