Need assessment of the development the retired training model in pencak silat

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Analisis kebutuhan pengembangan model latihan *retired* pada cabang olahraga pencak silat

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ABSTRACT

The retired training model is a training model specifically designed for former athletes. This is done to maintain the fitness and health of athletes when they enter retirement. Because in retirement, former athletes are no longer under the coach's control. This study aims to determine the need assessment for developing the Retired training model in the sport of pencak silat. This research is a survey research. There were 145 subjects involved in this study consisting of 57 former pencak silat athletes, 45 active fighters and 42 trainers. The instrument used in this study used a questionnaire distributed via the google form. The data analysis technique used in this study is descriptive statistics using a percentage formula. The results showed that 98% of retired athletes stated the need to develop training models for the retired period. Athletes and coaches 100% stated the need for a training model for the retired period. In this way, it can be concluded that the development of training models to maintain health in retirement in the pencak silat sport is very much needed. The findings in this research can be a basis for the initial product development stages in developing an exercise model to maintain fitness in retired athletes from the pencak silat sport.

***Key words**: training models; retired; pencak silat; health*

Model latihan *retired* merupakan model latihan yang disusun khusus untuk mantan atlet. Hal ini dilakukan untuk menjaga kebugaran dan kesehatan atlet ketika memasuki masa pensiun. Karena pada masa pensiun mantan atlet tidak lagi dalam kontrol pelatih. Penelitian ini bertujuan untuk mengetahui kebutuhan pengembangan model latihan *retired* pada cabang olahraga pencak silat. Penelitian ini merupakan penelitian survei. Subjek yang terlibat dalam penelitian ini sebanyak 148 yang terdiri atas 58 mantan atlet pencak silat, 45 pesilat aktif dan 42 pelatih. Instrumen yang digunakan dalam penelitian ini menggunakan kuesioner yang disebar melalui *google form.* Teknik analisis data yang digunakan dalam penelitian ini yaitu statistik deskriptif dengan rumus persentase. Hasil penelitian menunjukkan 98% pensiunan atlet menyatakan diperlukannya pengembangan model latihan untuk masa *retired.* Atlet dan pelatih 100% menyatakan diperlukannya model latihan untuk masa *retired.* Dengan begitu dapat disimpulkan bahwa pengembangan model latihan untuk menjaga kesehatan di masa pensiun pada cabang olahraga pencak silat sangat dibutuhkan. Temuan dalam penelitian ini dapat menjadi salah satu dasar dalam tahapan pengembangan produk awal pada pengembangan model latihan untuk menjaga kebugaran pada pensiunan atlet cabang olahraga pencak silat.

Kata kunci: model latihan; retired; pencak silat; kesehatan

INTRODUCTION

The development of long-term training models continues to be developed to get athletes who can achieve to the top (Bompa & Carrera, 2015). Various models of long-term athlete development have been implemented throughout Indonesia. Each region uses a development model that is adapted to the conditions of Human Resources (HR), infrastructure, characteristics of prospective athletes, characteristics of sports, and sports that are favored. Implementation of long-term athlete development requires good collaboration between parties related to this matter.

The talent development models that have been implemented by each region are different. The talent development models are in the form of Special Sports Schools (SSS), Student Education Training Centers (SETC), Regional Athlete

Training Centers (RATC), Talented Athlete Development (TAD). Free schools and others. In essence, the development model consists of two forms. The first specifications early and specifications in adolescence. Early specifications are carried out by grouping prospective athletes from an early age to maturity. While specifications in adulthood are carried out by developing general biomotor from an early age and grouped into sports in adulthood. The participation of prospective athletes in the long-term development of athletes has positive and negative impacts. The positive impact of participation is the achievement of the desired peak of sporting achievement. While the negative impacts of participating as long-term athletes such as injuries, mental problems, (Female Athlete Triad) FIAT, and health impacts on retirement (retired) are not given much attention.

One aspect of achievement sports that has been neglected until recently is the way retired athletes redefine the meaning of sport in post-sport life (Jones et al., 2022). Retired can be interpreted as retirement, in the stages of sports achievement it is often known as retirement. During retirement, an athlete has a new lifestyle and routine that is very much different from when he was an athlete (McFalls et al., 2022). Some of the reasons athletes decide to retire are injuries, work life stability, and financial constraints (Kashif et al., 2022). Athletes who decide to retire due to injuries have an impact on social life (Pearce et al., 2022). Patients who have recovered from injuries can return to being athletes, but the risk of injury is greater and can make things worse (Pulido et al., 2022).

Athletes retiring from elite sport participation is associated with decreased physical activity, depression, obesity, and ischemic heart disease (McHugh et al., 2019). Obesity occurs because of an imbalance between incoming energy and outgoing energy (McHugh et al., 2019). There is a need for a new strategy during retirement in meeting lower daily energy needs compared to when you were an athlete to avoid obesity (Silva et al., 2020). Setting physical activity, setting BMI and awareness of mental health is important for retired athletes. Prevention strategies to reduce the risk of knee, hip, and ankle injury and pain in Olympic athletes after retirement from sports need to be developed (Silva et al., 2020). Retired athletes who can carry out normal activities without any physical or mental disturbances are retirees who regularly carry out physical activities (Putra et al., 2023; Swann et al., 2022).

The International Olympic Committee (IOC) and the World Olympians Association criticize the health problems of athletes in retirement who are at risk of experiencing musculoskeletal problems (MSK), especially osteoarthritis, mental health, long-term sequelae of Relative Energy Deficiency in Sport (RED-S), reproductive health including menstrual cycle problems for female athletes that affect pregnancy, heart health and degenerative diseases (Thornton et al.,

2023). In addition, lifestyle management, financial arrangements, adaptation to the social environment, adaptation at work, low skills can affect the mental state of athletes in retirement (Zhu, 2023).

Based on some of the research results above, a phenomenon occurs in retired athletes. These phenomena are factors that cause an athlete to choose to retire, changes in the rhythm of life, changes in physical activity, and physical and mental health problems. In this study, researchers want to know the phenomena that occur in retired athletes from the pencak silat sport and also know the need for training models to maintain fitness. This was done to determine the similarities and differences in problems in retired athletes from the pencak silat sport and previous research. By knowing the phenomena that occur, researchers can provide solutions and preventive measures to overcome these phenomena through developing training models.

Of course, these problems must be addressed properly. Given that if this is underestimated it will have an impact on the health of former athletes. Researchers distributed questionnaires that were used by researchers to analyze the need for training models to maintain the fitness and health of athletes in retirement. Given that in retirement, athletes are no longer controlled by coaches regarding exercise and diet. Decreased frequency of exercise and uncontrolled diet can cause obesity. While obesity is a risk factor for the emergence of various diseases, including degenerative diseases. With the existence of a training model in retirement (retired), it is hoped that it can be used as an independent training guide for athletes in retirement. The results of this research can also add findings to research on the topic of retired athletes. Considering that research examining the problems of retired athletes is still rare, including in Indonesia.

METHOD

Method. This research is part of development research which is intended to determine the need for developing training models for pencak silat athletes in retirement. The results of this research are used as a basis for the initial product development process in the training model development stage. This research is included in quantitative descriptive research with survey data collection techniques.

Subject. There were 145 subjects involved in this research, consisting of 58 retired athletes, 45 athletes, and 42 coaches. Subjects came from Sumatra, Java, Kalimantan, Sulawesi, Papua and Thailand.

Instruments. The instrument used in this research was a questionnaire. The questionnaire used consists of 3 questionnaires, namely a questionnaire for retired athletes, a questionnaire for athletes, and a questionnaire for coaches. Questionnaire indicators for retired athletes consist of understanding the

background explained, the decision to retire, physical activity after retirement, eating patterns after retirement, health problems during retirement, and the need for training models to maintain fitness in retired athletes. The questionnaire indicators for athletes consist of understanding background, injuries, and health problems, and the need for training models to maintain fitness in retired athletes. The indicators in the questionnaire given by the trainer consist of an understanding of the material, education, and the need for training models to maintain fitness in retired athletes.

The questionnaire was tested to test validity and reliability. The validity of the questionnaire used on retired athletes is 0.904 and the reliability of the questionnaire is 0.919. The validity of the questionnaire used on athletes is 0.845 and the reliability of the questionnaire is 0.906. The validity of the questionnaire used for athlete trainers is 0.875 and the reliability of the questionnaire is 0.904. The rating scale in this questionnaire uses the Guttman scale.

Procedure. Instruments that have been tested for validity and reliability are then distributed via Google Forms. Links are shared via social media in the form of Instagram and WhatsApp. Before filling out the questionnaire, the subject was explained the background of the research. The instrument will be distributed from 1 June 2023 to 1 July 2023.

Data analysis. The data that has been obtained is then sorted to see the completeness of the data. Inappropriate data is not included in the analysis process. Data analysis used in this research uses descriptive statistics with percentage formulas using the Microsoft Excel application.

FINDINGS AND DISCUSSIONS

Findings

Based on the distribution of public transportation carried out for one month, the following results were obtained:

Table 1. Questionnaire results from retired athletes

Statement	Yes	%	No	%	Total Subject
1	56	98.3%	1	1.7%	58
2	23	39.7%	35	60.3%	58
3	22	37.9%	36	62.1%	58
4	9	16.4%	49	83.6%	58
5	31	53.4%	27	46.6%	58
6	46	79.3%	12	20.7%	58
7	27	46.6%	51	53.4%	58
8	11	22%	47	78%	58
9	26	45.6%	32	54.4%	58

10	16	27.6%	42	72.4%	58
11	54	93.1%	4	6.9%	58
12	55	94.8%	3	5.2%	58
13	57	98.3%	2	1.7%	58

The results of the questionnaire showed that of the 58 retired athletes from Sumatra, Java, Kalimantan, Sulawesi, Papua, and retired Indonesian national athletes, 98.2% had understood explanations regarding retirement based on the explanations given by researchers. 39.7% retired due to injury. 37.9% retire because they have entered retirement age. Only 16.4% of retired athletes exercise three times a week. 53.4% of athlete retires experienced an increase in daily food intake. 79.3% of athletes experience weight gain during retirement. 46.6% drastic increase in body weight. 22% of retired women experience problems in the menstrual cycle. 45.6% of former athletes were disrupted by their daily activities due to injuries during their time as athletes. 27.6% of former athletes experienced mental problems such as anxiety, depression and others. 93, 1% of retired athletes need a fitness model to maintain health. 94.8% of retired athletes stated that it was necessary to develop training models for the retired period. 98.3% of retired athletes hope that the training models developed can help maintain fitness and health.

Table 2. Questionnaire results from athletes

Statement	Yes	%	No	%	Total Subject
1	41	91.1%	4	7.9%	45
2	34	72.3%	11	22.7%	45
3	33	75%	12	25%	45
4	7	17.5%	38	82.5%	45
5	25	55.6%	20	54.4%	45
6	45	100%	0	0%	45
7	42	95.5%	3	4.5%	45
8	45	100%	0	0%	45

Questionnaires were also given to subjects who were still active as athletes. There are 45 athletes from Sumatra, Java, Kalimantan, Sulawesi, Papua, and national athletes. The results showed that 91.1% could understand the explanation about retired that was explained by the researcher. 72.3% of athletes are injured. 75% after recovering, return to being an athlete. 17.5% of athletes experience menstrual cycle disorders. 55.6% of athletes experience mental problems such as anxiety, depression and others. 100% of athletes say that training after retiring as an athlete is necessary to maintain fitness and health. 95.5% of athletes need a training model in retirement. And 100% of athletes hope that the training model created can help former athletes to maintain fitness and health.

Table 3. The results of the questionnaire from the trainer

Statement	Yes	%	No	%	Total Subject
1	39	92.9	3	7.1%	42
2	42	100%	0	0%	42
3	42	100%	0	0%	42
4	40	97.6%	2	6.4%	42
5	40	97.6%	2	6.4%	42
6	42	100%	0	0%	42
7	42	100%	0	0%	42
8	42	100%	0	0%	42

Questionnaires were also distributed to trainers from Sumatra, Java, Kalimantan, Sulawesi, Papua, and national trainers, and trainers from Thailand. There were 42 coaches, 92.9 coaches understood retired which the researchers explained. 100% of coaches stated the need to equip athletes to maintain health after retirement. 100% coach needs to lead athletes entering retirement age to remain active in sports. 97.6% of my coaches need to tell athletes to stay at an ideal weight. 97.6% of my trainers need to equip me with a good mentality to carry out activities/work during retirement. 100% of trainers say that retirement training is necessary. 100% of trainers stated that it was necessary to develop a retired/retirement training model. 100% of trainers stated that it was hoped that the retired training model would be a guide for athletes entering retirement age.

Discussion

Based on the results of the research above, there is a decrease in physical activity in retired athletes. The decline in physical activity in retired athletes is caused by several factors, there is an athlete has a new lifestyle and routine that is very much different from when he was an athlete (McFalls et al., 2023). Besides that, during retirement no more routine training obligations, no more food control, and no more control from the coach. So an athlete who has entered retirement must adapt to patterns in a new environment. Athletes must make a plan before choosing to retire (Kashif et al., 2022). So that when entering retirement, athletes can adapt to the environment and new job demands. When adaptation does not go well, it will cause various problems (Zhu, 2023).

The first problem, for example, based on the results of the research above, is the obstruction of work due to the effects of injuries when actively participating in sports achievements. Athletes participating in competitive sports are at increased risk of sustaining injury (Palmer, et al., 2021). This is complemented by emerging evidence from studies that retired athletes who have experienced injuries can develop on going pain and osteoarthritis (Palmer, et al., 2021). Then can athletes who are injured cannot participate again as athletes? Of course you can, athletes who have recovered from injuries can return to being athletes, but the risk of injury is greater and can make things

worse (Pulido et al., 2022).The International Olympic Committee (IOC) and the World Olympians Association criticize the health problems of athletes in retirement who are at risk of experiencing musculoskeletal problems (MSK), especially osteoarthritis (Thornton et al., 2023). The risk of knee, hip, and ankle osteoarthritis and pain in Olympic athletes after retirement from sports is very high (Palmer et al., 2021). Even ongoing pain and osteoarthritis can occur (Carmody et al., 2022; Palmer et al., 2021).

The second problem found in this study is weight gain after retirement. This is due one of them because the prevalence of eating disorders in retired athletes is higher than that of the general public (Miles-Chan & Isacco, 2020). For example, former Saudi Arabian athletes experienced weight gain after retirement and was followed by differences in BMI when they became athletes (Altowerqi et al., 2020). The weight gain occurred because a former athlete still followed the diet when he became an athlete. This means that athletes still consume food in the same portion when they become athletes. As a result, weight gain will occur in athletes who cannot control the energy entering and leaving the body. So, necessary there is a new strategy in retirement in meeting lower daily energy needs than during being an athlete to avoid obesity (Silva et al., 2020).

This strategy can be used as a prevention effort so that retired athletes do not experience obesity. Because when it comes to the classification of obesity will cause various diseases. Overweight and obesity causes various health problems, such as type 2 diabetes, high blood pressure, and coronary heart disease, and shortens life span (Altowerqi et al., 2020). Therefore, the problem of obesity and health-related problems is something that needs to be considered in retirement, especially for retired athletes who carry out physical activities below the average (Silva et al., 2020). A quarter of American athlete deaths are attributed to cardiovascular disease (CVD), especially in players who are classified as obese (McHugh et all., 2019). The problem found in this study is the reproductive health of former female athletes. The problem of long-term sequelae of Relative Energy Deficiency in Sport (RED-S), reproductive health including menstrual cycle problems for female athletes that affect pregnancy, heart health and degenerative diseases (Thornton et al., 2023). This is in accordance with the results of this study which show that there are several cases of unstable menstruation in athletes and former athletes.

It's not only physical that will be disturbed general mental health in retirement can occur (Carmody et all., 2022). Athletes retiring from sports participation will lead to decreased physical activity, mental health, obesity, and ischemic heart disease (McHugh et all., 2019). Poor self-regulation, anxiety due to ongoing injuries that affect work, family, physical and mental problems (Dong, 2022). Setting physical activity, setting BMI and awareness of mental health is

important for retired athletes (Pulido et al., 2022). The causes of mental problems in retired athletes generally come from lifestyle management, financial arrangements, adaptation to the social environment, adaptation at work, low skills can affect the mental condition of athletes in retirement (Zhu, 2023). Retired athletes who can carry out normal activities without any physical and mental disturbances are retirees who regularly carry out physical activities and have good self-regulation (Swann et al., 2022).

Someone who has good self-regulation will apply discipline, responsibility, and easily adapt well to changing conditions or circumstances (Guntoro, 2023). In carrying out work athletes who have good self-regulation will be able to be disciplined and responsible in doing work (Esopenko et al., 2020). The work done can be carried out properly, because of the discipline that has been formed when becoming an athlete. In managing the diet, former athletes who have good self-regulation will continue to adopt a healthy lifestyle and adjust their food portions to daily energy needs. Whereas for former athletes who cannot apply good self-regulation, there will be obstacles in doing work (Kohmura et al., 2023).

Some of the reasons athletes decide to retire that have been discussed are injuries, work-life stability, and financial constraints (Kashif et al., 2022). Athletes who decide to retire due to injuries have an impact on social life (Pearce et al., 2022). This impact occurs because former athletes have difficulty adjusting to the demands of work or the work environment. This difficulty is due to the lack of soft skills possessed by former athletes. Our research has found that retired contact sport athletes with self problems are significantly slower in reaction time and response time, compared to retired athletes without problems, and age-matched controls (Pearce et al., 2022). High job demands coupled with competitive environmental conditions according to the work field will make former athletes depressed (Myall et al., 2023). When stressed it will lead to stress in dealing with work (Jaiyeoba & Ogunsanya, 2021). This will affect the physical and mental health of former athletes. The impact of this stress can be in the form of being lazy to do work, consuming a lot of food or vice versa, uncontrolled emotions, and others (Gouttebarge et al., 2019). The impact will affect the achievement of work. When the achievements are not fulfilled, you will get a warning from your superiors.

One aspect of sports retirement that has been neglected until recently is the way retired athletes relate to new environments and seek to redefine the meaning of sport in post-athlete life (Jones et al., 2022). Some athletes who continue to adopt a healthy life by consuming food according to the body's needs, doing regular exercise will avoid the problem of being overweight. However, not all former athletes can manage their food portions and exercise regularly to maintain body fitness (Voorheis et al., 2023). So that health

problems will occur. Therefore, the development of training models for retirement needs to be further investigated.

CONCLUSION

Based on the results and discussion above, it can be concluded that it is necessary to develop a retired training model for the sport of pencak silat. This is evidenced by statements from trainers and athletes that 100% need this training model and 98.2% retirees want this training model. The limitation of this research is that the researcher only studied one sport, namely pencak silat. So further research is needed to determine the phenomenon and need assessment for developing training models in other sports. Apart from that, developing training models to maintain the fitness of retired pencak silat athletes needs to be carried out considering that there are health problems that occur in retired athletes from the pencak silat sport.

REFERENCE

Altowerqi, Z., Zainuddin, Z., Hashim, A., & Almarwaey, A. (2020). Are Former Athletes Protected Against Obesity after Retirement?. *Indian Journal of Public Health Research & Development, 11*(2), 1989-1994. http://dx.doi.org/10.37506/v11/i2/2020/ijphrd/195123

Bompa, T. O., & Carrera, M. (2015). *Conditioning Young Athletes.* America: Human Kinetics.

Carmody, S., Anemaat, K., Massey, A., Kerkhoffs, G., & Gouttebarge, V. (2022). Health Conditions among Retired Professional Footballers: a Scoping Review. *BMJ Open Sport & Exercise Medicine*, 1-16. http://dx.doi.org/10.1136/bmjsem-2021-001196

Dong, J. (2022). Research On the Effect of Mental Health Education on Relieving the Anxiety of Retired Athletes' Reemployment from the Perspective of Educational Psychology. *Psychiatria Danubina, 34*, 419-421. https://hrcak.srce.hr/282186

Esopenko, C., Coury, J., Pieroth, E., Noble, J., Trofa, D., & Bottiglieri, T. (2020). The Psychological Burden of Retirement from Sport. *the American College of Sports Medicine, 19*(10), 430-437. https://doi.org/10.1249/JSR.0000000000000761

Gouttebarge, V., Castaldelli-Maia, J., Gorczynski, P., Hainline, B., Hitchcock, M., Kerkhoffs, G., . . . Reardon, C. (2019). Occurrence of Mental Health Symptoms and Disorders in Current and Former Elite Athletes: a Systematic Review and Meta-Analysis. *Br J Sports Med, 53*(11), 700–707. https://doi.org/10.1136/bjsports-2019-100671

Guntoro, T. (2023). Sikap Ilmiah, Konsep Diri Akademik, dan Capaian Pembelajaran Mahasiswa Olahraga. *Multilateral: Jurnal Pendidikan Jasmani dan Olahraga, 22*(1). 1-12. http://dx.doi.org/10.20527/multilateral.v22i1.14698

Jaiyeoba, O., & Ogunsanya, J. (2021). Psychological Characteristics of Health Related Quality of Life among Retired Elite Athletes in Nigeria. *European Journal of Physical Education and Sport Science, 7*(3), 163-175. http://dx.doi.org/10.46827/ejpe.v7i3.3986

Jones, L., Avner, Z., & Denison, J. (2022). "After the Dust Settles": Foucauldian Narratives of Retired Athletes' "Re-orientation" to Exercise. *Front. Sports Act. Living*, 1-11. https://doi.org/10.3389/fspor.2022.901308

Kashif, 1., Ali, A., & Azam, M. (2022). Quality of Life and Physical Activity among Retired Athletes in South Punjab, Pakistan. *Journal of Development and Social Sciences, 3*(2), 48-60. http://dx.doi.org/10.47205/jdss.2022(3-II)06

Kohmura, Y., Suzuki, K., Someya, Y., Yamazaki, K., & Aoki, K. (2023). Effect of Sports Experiences on Competition Level and Exercise Habits in Japanese Collegiate Athletes. *Journal of Human Sport and Exercise, 18*(3), 732-742. https://doi.org/10.14198/jhse.2023.183.19

McFalls, T., Maggio, P., & DeBeliso, M. (2023). Assessing Exercise Habits of REtires Division I NCAA Foorball Players. *Europen Journal of Physical Education and Sport Science, 9*(4), 1-42. http://dx.doi.org/10.46827/ejpe.v9i4.4611

McHugh, C., Hind, K., Davey, D., & Wilson, F. (2019). Cardiovascular Health of Retired Field-Based Athletes. *Journal of Sports Medicine, 7*(8), 1-18. https://doi.org/10.1177/2325967119862750

Miles-Chan, J., & Isacco, L. (2020). Weight Cycling Practices in Sport: A Risk Factor for Later Obesity?. *Wiley Online library, 22*(S2), 1-8. https://doi.org/10.1111/obr.13188

Myall, K., Montero-Marin, J., Gorczynski, P., Kajee, N., Sheriff, R., Bernard, R., . . . Kuyken, W. (2023). Effect of Mindfulness-Based Programmes on Elite Athlete Mental Health: A Systematic Review and Meta-Analysis. *British Journal of Sports Medicine, 57*(2), 1-12. http://dx.doi.org/10.1136/bjsports-2022-105596

Palmer, D., Cooper, D., Whittaker, J., Emery, C., Batt, M., Engebretsen, L., . . . Budgett, R. (2021). Prevalence of and Factors Associated with Osteoarthritis and Pain in Retired Olympians Compared with the General

Population: Part 1 – Thelower Limb. *British Journal of Sport Medicine, 56*(19), 1123–1132. http://dx.doi.org/10.1136/bjsports-2021-104762

Pearce, A., King, D., Kidgell, D., Frazer, A., Tommerdahl, M., & Suter, C. (2022). Assessment of Somatosensory and Cognitive-Motor Processing Time in Retired Athletes with a History of Repeated Head Trauma. *medRxiv*, 1-32. https://doi.org/10.1101/2022.07.20.22277880

Pulido, P., Hegarty, P., & Getgood, A. (2022). Knee Osteoarthritis and Management of the Retired Athlete: the Role of Osteotomy. *Journal of Cartilage & Joint Preservation*, 1-8. https://doi.org/10.1016/j.jcjp.2022.100066

Putra, M., Sutoro, & Sinaga, E. (2023). Mental Atlet: Konstruk, Pengukuran, dan Arah Penelitian ke Depan. *Multilateral: Jurnal Pendidikan Jasmani dan Olahraga, 22*, 63-79. http://dx.doi.org/10.20527/multilateral.v22i1.14785

Silva, A., Nunes, C., Matias, C., Jesus, F., Francisco, R., Cardoso, M., . . . Minderico, C. (2020). Champ4life Study Protocol: A One-Year Randomized Controlled Trial of a Lifestyle Intervention for Inactive Former Elite Athletes with Overweight/Obesity. *Nutrients, 12*(2), 1-20. http://dx.doi.org/10.3390/nu12020286

Swann, O., Turner, M., Heslegrave, A., & Zetterberg, H. (2022). Open Sport & Exercise Medicine Neurodegenerative Disease In Retired Athletes With Multiple Concussions. *BMJ Open Sport & Exercise Medicine, 8*, 1-22. https://doi.org/10.1136/bmjsem-2022-001327

Thornton, J., Rosen, C., Davenport, M., Mountjoy, M., Dorian, P., Gouttebarge, V., . . . Crossley, K. (2023). Beyond the Medals: A Cross-Sectional Study Exploring Retired Elite Female Athletes' Health. *BMJ Open Sport & Exercise Medicine, 9*(1), 1-12. http://dx.doi.org/10.1136/bmjsem-2022-001479

Voorheis, P., Silver, M., & Consonni, J. (2023). Adaptation to Life after Sport for Retired Athletes: A Scoping Review of Existing Reviews and Programs. *PLoS ONE, 18(9)*. https://doi.org/10.1371/journal.pone.0291683

Zhu, Z. (2023). Career Transition, Prospects, and Challenges Faced by Chinese Elite Female Athletes in Competitive Sports. *Paradigm Academic Press Frontiers in Management Scien, 2*, 61-80. https://doi.org/10.56397/FMS.2023.02.06

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