

Coaching Methods that Enhance Competitive Play in Female Basketball Players

**by
Troy Werrell**

Plumber Certified Red Seal, British Columbia Institute of Technology, 2000

Project Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Education

in the
Educational Leadership Program
Faculty of Education

© Troy Werrell 2022
SIMON FRASER UNIVERSITY
Summer 2022

Copyright in this work is held by the author. Please ensure that any reproduction or re-use is done in accordance with the relevant national copyright legislation.

Declaration of Committee

Name: Troy Werrell

Degree: Master of Education

Title: Coaching Methods that Enhance Competitive Play in Female Basketball Players

Committee:

Chair: Michelle Nilson
Associate Professor, Education

Michelle Pidgeon
Supervisor
Associate Professor, Education

Tina Fraser
Committee Member
Adjunct Professor, Education

Dan Laitsch
Examiner
Associate Professor, Education

Abstract

When I began coaching, the skills I had to rely upon were the ones provided to me by my own coaches from past years as a player myself. If we can use the term “going in blindly” with respect to coaching for the first time, I quickly understood the requirement of the advice and guidance from mentor coaches with years of experience would be key to growth. It is however this seeking of guidance where the multitudes of opinions and habitual forms of coaching have arisen, and what has interested me in forming my research question “Coaching Methods that Enhance Competitive Play in Female Basketball Players”. To answer this question, I conducted a critical analysis of the research literature of sport science journal articles related to physiology and physical make-ups of adolescent female players, key training times for beginning and increasing training, and methods of motivation both intrinsic and extrinsic to the female basketball player.. The analysis identified that many factors should be recognized by a coach of female basketball players for optimum results. These factors are the climate of practice, training program and methods based on maturity level, motivational style from coach the parents, Intrinsic player motivation and nutritional knowledge.

Keywords: Motivation; Training; Maturation; Competition; Elite

Table of Contents

Declaration of Committee	ii
Abstract	iii
Table of Contents.....	iv
Introduction	1
Methodology.....	3
Research Purpose and Question	3
Research Process.....	3
Analysis.....	3
Findings	4
Relationships.....	4
Gender Based Thinking	4
Motivation: Coach, Parents, & Players	5
Climate of Mastery or Performance.....	5
Conditioning according to age and development.....	6
Motivation.....	7
Nutritional Education.....	10
Discussion	11
Conclusion.....	14
References.....	16

Introduction

Personally, I have coached female basketball players for 10 years and at all age groups from U11 years to university women. My typical age groups are U15-U18 years of age (high school). I am a NCCP (National Coaching Certification Program) certified coach at the L2T (Learn to Train) level, and trained status at the T2T (Train to Train) level with full certification due in the next 6 months.

Motivation for this research comes from the abundance of contradictory information that is available and practiced by current coaches. Some sources have indicated that female athletes are quite different from males and that most aspects of coaching (physical training, motivating and competition) must be altered from those of males. Other sources stated there is relatively little difference in how you should coach the female athlete vs the male. In my experience however I have come to know that it is a mixture and balance of these two ideals that work best and is largely dependent upon the personnel of the team.

As a coach of female basketball teams, it would be prudent to seek the best approaches to training and teaching the female players. Initially interested in methods that enhance competitive and motivational skills the analysis has revealed further insight into better training of the female athlete. This is not to say that the female player is any less competitive than a male counterpart. The goal of the research is what methods will work best given a group of young female basketball players of ages. Answering this and other guiding questions will be based upon research into previous articles and studies on training, motivation, and development of not only basketball players, but athletes in general. As the data pool is much broader, better insight into answering the research question is provided.

This report focuses on the means of developing player training technique and acquisition of skills that will be of lasting benefit to the female basketball player. This report seeks to uncover valid methods of training female basketball players specifically. In this process the research will aid to inform my focus upon my coaching methods utilized as to produce a better prepared female basketball athlete. The research demonstrates to the reader and validate that there are contributing factors such as:

gender of the coach, the coaching philosophy employed, and the type of training provided that matter when one is coaching female basketball players.

Methodology

Research Purpose and Question

Finding meaningful, specific, and physiologically accurate methods for coaching female basketball players is not in great supply nor is it easily available to a basketball coach. It was this lack of information that engaged my interest to research these topics. The guiding question used to initiate this research is: What coaching methods enhance competitive play in female basketball players?

Research Process

Critical analysis of over 37 existing and relevant studies, articles and reports that pertain to the coaching, training, and teaching of both male and female basketball players were considered. Twenty-one are cited in this report. From the 37 original documents and studies I was able to select those that were concerned with coaching habits, player studies while in competition, motivational habits, and finally stronger competitive results from training methods. While the majority of this research was based upon both sexes, a pattern concerning these topics and techniques presented themselves to be of great benefit for this author. This is due to the focus on the female basketball players in many of the documents and studies that were selected for this report and in the recommendations made by those authors.

Analysis

Analysis of the selected documents were guided by looking for the following topics as they mainly pertained to 1) Motivation in female basketball players, 2) Coaching methods favourable to higher enjoyment and therefore success for females, 3) Competitive outcomes based on given training methods, and 4) age or maturity thresholds in female basketball players.

Findings

Through this analysis it was discovered that while there may not be an overwhelming amount of research into coaching female basketball players specifically, research related to understanding the psychology, physiology and physicality of the female athletes is relevant to the inquiry and was researched herein.

It was apparent in the investigation that answering the guiding questions will be found within documents of related material, as opposed to specific studies or documents. Many of the documents referenced contained physical training studies (Cherny., et al., 2021), mental preparation (Savoy, 1992), and selection process for adolescent female players to elite level programs (Soares, et al., 2021).

Relationships

An interesting theme that emerged across sources was the importance of the relationships cultivated within a sports group (DeBoer, 2002). Several factors are mentioned including the likability and respect of the coach regardless of his or her gender from the viewpoint of the female athlete, being challenged in practices but still having a fun and an enjoyable experience (DeBoer, 2002) Coaching

Gender Based Thinking

In viewing two video recorded seminars by Dr. Kathy DeBoer on Gender Differences in Sport (2002) and Surviving Practices: Creating a Winning Practice Environment through Gender Understanding (2002). She begins the seminar by literally acknowledging that she will be over generalizing the difference in female athletes' thinking and learning processes vs a male athlete. "Gender Differences in Sport" (DeBoer, 2002). Dr. Kathleen DeBoer (2002) explains the "general" thought processing differences in male and female athletes and offers a perspective on how to coach or train the female athlete based upon those differences.

The valuable insights that were gained from these two presentations were how to build relationships with female athletes based upon the generalized competition thought context and focus on the group more so rather than the individual. Using the lessons that

Dr. DeBoer suggested when conducting drills has proven to be beneficial to my practice as a coach. For instance, in Gender Differences in Sport Dr. DeBoer (2002) suggests that when trying to have a female athlete play harder on her teammate, suggest to her that she needs to be tough on her friend, otherwise how will her friend increase her skill? This tends to ignite a more competitive outcome for a set drill (DeBoer, 2002).

The importance of a coach's gender, while not a focus initially in this research was apparent in a small number of documents. It was found that there appears to be no real preference from female athletes (Magnusen & Rhea, 2009) as they only seek a competent leader who will further their career or journey through sport (Coaching female high performance athletes). In addition, the documents go on to say the athletes expect different attributes from the different gender coaches, but performance appears to be no more or less affected (Magnusen & Rhea, 2009). A conflicting report on gender roles of coaching however suggest there is a bias of females preferring a male coach, simply because that is the gender of the coach that she had in high school (Kalin & Waldron, 2014).

Motivation: Coach, Parents, & Players

Motivation from the coach or the trainers is shown to be dependent upon the focus of the program in which the team is in (Revista de Psicologia del Deporte, 2009). This article describes the climates of two distinct coaching focuses: one being a mastery of skill and the other a performance focus.

Climate of Mastery or Performance

Within the research conducted in the study, it was found that there was a higher indication of sport commitment, enjoyment, involvement, and personal investment with the climate of mastery (Francisco Miguel Leo et al., 2009). Evidence of this system or culture of program can be found in many amateur and leisure children's development basketball programs such as the Jr. NBA and Steve Nash Basketball leagues. The goal is to teach the players the skills and done so with enjoyment and fun in mind. Winning every game is not prioritized.

In the climate of performance there were less of these qualities, and a higher incidence of player drop out. (Francisco Miguel Leo et al.) The study demonstrates that while the players learned the skills and had a certain level of enjoyment in this climate, it was measured to be less than the mastery climate and it had less commitment ongoing from the players. This climate equates winning games as the key success indicator, which can have negative impacts on those struggling to learn skills and certainly attributes to why players drop out of programs.

Conditioning according to age and development

Pertaining to physical training and conditioning there is data to support the maturation age of the athletes rather than sex or age alone. According to data collected in “Strength and Speed Profiles Based on Age and Sex Differences in Young Basketball Players” by Triguero. M, et.al, (2021) there should be emphasis placed on physically training the female athlete upon her maturational state rather than age grouping. The onset of puberty in females has been determined to be the optimal time to begin strength training and positional skill acquisition. There was no indication that starting strength training prior to the female athlete’s entrance to puberty was beneficial. Conversely it was found that males had no significant variance in performance at any age.

Triguero’s study observed 149 basketball players ages U14 to U18 at the national competitive level. One hundred and three males and forty six females took part in this study. This report states that while the male athletes had continual improvement in strength and quickness through all age groups, the females showed a tendency to slow their progress slightly as they progressed into the older age ranges.

Using the observations from Triguero’s study the coach, and the strength & conditioning trainers of female basketball players may gain valuable insight into developing suitable programs that are based on physiology and physicality of the female athlete.

The physical fitness of the basketball player will be influenced by the type of practice carried out and should be optimized according to the specificity of the sport. Basketball is an aerobic-based sport composed of different high-intensity anaerobic actions (David Manch-Triguero et al., 2021). This in depth study looks at the muscle fiber

make up of male vs female athletes. In this research type 2 muscle fibers were higher in males; muscle size is larger and hence strength greater. With their study however they discovered there was not a significant difference in strength at the lower age groups of 11 to 13 year old athletes, but there were significant differences in the older groups of 15 to 17 year old athletes.

Further this study illustrates that puberty is limiting to the achievement and mastery of skills, as it modifies the development of physical abilities of female basketball players and therefor their performance on the court. The indication to develop a suitable program based on maturation of the female athlete is echoed in this research study.

Motivation

The win loss record of a team regarding motivation was researched and reported by Sean S. Cumming et al. (2007) article "Is Winning Everything? The Relative Contributions of Motivational Climate and Won- Lost Percentage in Youth Sports." In this article they explored the following:

The main and interactive effects of motivational climate and won-lost percentages upon young athletes' evaluations of their coaches, enjoyment of their team experience, and perceived parental liking for the coach. (Cumming, et al., 2007, p. 324)

The overall enjoyment of the experience of the players was determined by the actions and behaviors of the coach and less by the win-loss record. The coaching knowledge scoring was predictably higher from those with better winning record teams, but the likeability from players and parents showed a higher tendency from those in the mastery climate and scored less from the ego or performance based climate.

This again reinforces the climate of the overall program is key to player success in both male and female athletes. No discerning was made in the study between the sexes of players. This study by Cummings, et al (2007) involved twenty nine male basketball teams and twenty one female basketball teams ages range from ten to fifteen years. Incidentally there were forty five male coaches and five female coaches.

Ruben Portes et al., (2020) conducted a comparison of external loads between elite junior male and female basketball players and their positions (i.e., guards, forwards

etc.). External loads as tested were acceleration and deceleration, changes in direction, sprinting distance vs time and overall external loads on the player during games and test trials. The article from Portes proved to be very beneficial in my goal to acquire more focused training for female athletes. The study establishes specifically that female guards should have a focussed strength and conditioning program based on the results from testing of the guards and the distances of running, and on the upper body strength needed for shooting. Forwards should then focus on acceleration and deceleration drills, and on conditioning due to their performance shown in competition. Overall, there is a strong indication that there needs to be a specific and focused approach to strength and conditioning programs for both male players and female players.

It is this authors opinion that practice planning for a coach should be one of their most important procedures for a team's development. In these practice plans are the skills, plays and the reactions the team will perform while in competition. The type of training and skill acquisition is as varied as there are coaches, but with insight with respect to the physicality and physiology of the players being coached an optimum balance can be achieved.

Small-sided games have been a method utilized to quickly train up new to the sport or younger players. In this method, the separate skills of dribbling, passing, and moving with the ball are all incorporated into a single phase or game of two vs two, rather than the normal five vs five. As the players gain confidence and mastery of the basic skills the game can be loaded with additional challenges, such as only three dribbles, must set a screen prior to scoring etc. (Sanderson, 2019). The best part about this small-sided game method is it makes the learning process game like and is more representative of what the actual game scenarios for the player will be like. In a report by Jinshu Zeng et al, (2022), a first of its kind to compare small-sided games vs high-intensity interval training methods, they proposed that SSG were beneficial skill wise and more enjoyable to the players. However, in the same study it was determined that the high-interval training method produced a higher level of basketball skill and aerobic ability. With a group of elite level basketball players regardless of gender, the HIIT method is more common in the sport. Souza Junior et al., (2019) proposes.

The accompanying from parents during the sports activities is related with the support of the children. Parenting influence is an essential aspect in the children's sports practice because parents foster the entrance into and favors continuation of the process through support, management of time, and educational demands. (p.211)

The study goes on to describe other implications as “the negative relationship found between the parenting influence dimension and the introjected regulation could suggest that the accompanying support from parents lead the athletes to have fewer constraints and to feel less pressured when they make a mistake” (Junior S, et al . 2019, p. 212). In the closing comments the study from Souza Junior et al, they describe motivation as a construct should be carefully considered as it will surely influence the players continuing or dropping out of a program.

Taking a different viewpoint as to what motivates a player to continue in the sport of basketball a study between gender and motivation was discovered. In this study the question of intrinsic motivation focus was asked of male and female division one basketball teams. The findings in this study determined that for female athletes the focus was more so upon school and graduation and the sport taking a secondary focus, while interestingly the male basketball players showed the focus was on their sport and less of getting good grades. These findings were backed by higher graduation numbers from the female basketball players versus the male counterpart graduation numbers and outright failure to achieve set grade GPAs to remain eligible for their scholarships (Sherry & Zeller 2014).

Self-determination theory was described as integral to motivation of athletes in a similar motivation study article, Motivation, parental style and psychological well-being of female basketball school player. (SDT) created by Deci and Ryan (1985), which is constituted of six micro theories: a) Cognitive Evaluation Theory; b) Organismic Integration Theory; c) Causality Orientation Theory; d) Goals Content Theory; e) Motivation and Relatedness Theory; f) Basic Psychological Needs Theory. (Souza, J. et al, 2019, p. 203)

Elite junior basketball teams seem to share common attributes. The players have good court awareness, skill level attainment is higher than average, and they are quick on the floor. In an article by Sergio Ramos et al, their research defined that the winningest junior teams shared these three common attributes. Whether the teams were male or female, those teams that won more games and had better skilled athletes had players that were speedy, more agile and had more upper body strength than those

teams which had fewer wins. Taking these factors into consideration would help shape a future training program of elite and/or representative teams.

Nutritional Education

A review of several other studies itself, a report by Gal Ziv and Ronnie Lidor, (2009) established that there is a great need for coaches and players alike to place higher value on nutritional strategies. What players eat while in competition days is largely due to convenience and the recovery needs of the body takes a second seat. Physical attributes of male and female basketball teams were studied also, along with physiological characteristics and on-court performances. The conclusion of the study suggested that future research should concentrate on time-motion analyses, effects of fatigue on performance and physiological demands during games. This study provided an abundance of worthwhile information for this author. It will inform parts of newly developed training programs by means of directing the players and the coaching staff towards studied and proven nutritional choices. This would be in the form of suggested meal planning, portion sizes, and types of foods rich in the required nutrients for the training diet. With a little more effort on the part of the coach, a list of local restaurants or markets near the competition area can be pre-determined where these requirements can be filled.

Discussion

The research question of how the motivation and competitiveness of female basketball players can be increased has been answered. It has been established that there are certainly better coaching and training methods that are female orientated, based upon her maturation rather than age grouping, her physiology, and the practice climates favorable to producing a better athlete.

The discoveries about the climate of practice, training program and methods based on maturity level, motivational style from coach the parents, Intrinsic player motivation and nutritional knowledge will serve to inform the coach on what best methods to present with regard to female basketball players.

Beginning with the practice climate it seems best advisable to foster one with mastery of skillset as primary focus. This should of course be included with proper positive encouragement and feedback during skill and game strategy achievement, support of those who may need extra time to gain those skills, and an overall inclusive and safe environment where mistakes and corrections are not negatives but building blocks.

During competitions and games this climate should again be fostered as every game is a learning experience for the young female athletes and they most assuredly will bring their own level of expectations with them. The simple act of raising your voice as a coach is quite enough to elicit the players attention. Pointing out failures and flaws of the players is not constructive and in fact will damage any type of trust between the coach and athlete.

Dependent upon the age of maturation of the players is the strength and conditioning training program. For players typically under the age of eleven, simple gym based running games and ball dribbling games will suffice to get those younger players ready to begin guided competition, whereas twelve and thirteen year old players should begin those advanced regimens as soon as maturation presents. Thirteen to fifteen-year old players can handle a more rigorous strength and conditioning program. It should be noted however that elite level programs are different in complexity and focus from that of high school programming. In addition, these programs need to be tailored to

each player position for the female athletes as each position requires different demands upon the body during competition.

Nutritional knowledge is a factor that to be honest is not taught in our school coaching system, among a variety of other topics which should. The average player either male or female has no idea of the strain that heavy competition has on the body. The youthful body has a way of absorbing these demands, but if the coach takes initiative, he/she can establish a basic nutritional guideline for their athletes. Proving that this is important to the younger athlete may well be a challenge as fast food is just that-fast acquired and readily available. I propose a demonstration that the coach could manage well in practice. Have the players eat a well-balanced, competition needs meal prior to a conditioning workout and time the players for those drills. On the next conditioning workout let the players eat whatever they want. I would wager good money that the first day trial and test times will be shorter, and that the stamina of the players will not be as long in the second workout day.

Coaching education as it comes to teaching others is key. While it is very helpful that many school teams are coached by volunteers, there is very little by way of support for those who are parents of a player, and which may not be well versed in the sport or may not have played the sport themselves. While there are training courses for coaches who wish to proceed along the national coaching certification system, there really is nothing in place at the very local of levels for people who just want to coach so a team can play in the season. It would be very easy to implement provided someone would step up to do the training and be supported by the school districts in doing so. With regard to coaching training, studies indicate that better trained coaching helps retain more female athletes in their sport and her activity within.

The gender of the coach has been shown to be of less importance to females than male players but that they really only want a competent leader (Preferences Toward Gender of Coach and Perceptions of Roles of Basketball Coaches). It is interesting however that 59 female division 1 basketball teams were surveyed, and those results showed an overwhelming favor towards a male coach (Kalin & Waldron, 2015). These results were explained as to why this was so. The majority of the players had male coaches in high school, and they may be stating a preference based on familiarity. Another theory states that the female players see the coaching role as more masculine

and therefore should be a male. In either case, this report does not support the masculine theory and will not be explored further.

The elite female players tend to want to be pushed hard and challenged in their practices and they feel that a male coach can do this better for them rather than a female coach. While there are many teams with exceptional records and who have female coaches, there are still very few female coaches out there today. In order to increase the presence of female coaching there is a need to increase the number of female coaches in high schools. Adoption of mentorship programs for school age girls who wish to get into coaching are again very low to no cost and easily produced.

Through personal coaching and mentorship, experience has shown that female basketball players have a good focus on academics and on their athletics. Student athlete is a suitable title for these players and support for their sport and of their schooling needs to be accounted for in a coaching role. Asking questions about school and how they felt about a test or exam they recently completed shows interest from the coach. If the players need extra time to study or needs help in a subject, this can be done by a coach or support person within the school. On travel days there is time in the car or bus to catch up on the homework. The extra time is always appreciated and rarely has a player been prevented from traveling to a tournament due to poor grades.

Conclusion

This analysis has informed the researcher that there are certainly different approaches to coaching female basketball players. When one studies the differences in physiology, physicality, morphology and maturity through the age ranges of players they will soon understand that a “one size fits all” in terms of coaching basketball will not suffice. This report establishes that certain factors should be recognized by a coach of female basketball players for optimum results. Again, these are: the climates of practice, training program and methods based on maturity level; motivational style from coach & the parents; intrinsic player motivation, and nutritional knowledge. Coaching female players must take into consideration all these factors.

In each of these factors an aspiring coach can establish a more focused approach to leading female basketball players, and possibly other sport disciplines. The majority of the research documents were based on both male and female basketball players however there is no reason to not expect similar results in other male or female team sports.

Utilizing the data from this analysis it is now possible to construct a comprehensive training program that will enhance the competitive play in female basketball players. This training data or at least multiple parts of these findings can be implemented by the focussed coach for training female players specifically from just prior to the age of maturation, to the onset of young adulthood.

This analysis contains specific times periods for and types of training methods that this author will now adapt into the training repertoire for young female players. Further, there are the optimal types of learning atmospheres (such as those based on achievement of skill) that are conducive to training female athletes, specific to young female basketball players. Moving forward and by using the methods contained in this report, I will be sharing these findings and mentoring other coaches when the opportunity presents itself in future.

Some examples of new training programs that will stem from this research will be utilizing the atmosphere where achievement of new skills is celebrated rather than if the players won or lost competitions. This method can be used with any of the stages of

growth of the players from pre-motorization to young adult. Resistance and conditioning training is to be introduced at the maturation stage of the player and will then be altered from then on as to what position that player will predominantly play in competition.

References

- Aschendorf, P.F., Zinner, C., Delextrat, A., Engelmeyer, E., & Mester, J. (2019). Effects of basketball-specific high-intensity interval training on aerobic performance and physical capacities in youth female basketball players. *Phys Sports med*, 47(1), 65-70. DOI 10.1080/00913847.2018.1520054.
- Ben Abdelkrim, N., Nabli, M.A., & Chamari, K. (2020). Physical playing pattern and ecological validity of the YoYo-IR1 Test in U-19 female basketball. *J Sports Med Phys Fitness*, 60(4), 544-551. DOI: 10.23736/S0022-4707.19.10368-4.
- Cherni, Y., Hammami, M, Jelid M.C., Aloui, G, Suzuki, K, Shephard, R.J., & Chelly, M.S. (2021). Neuromuscular adaptations and enhancement of physical performance in female basketball players after 8 weeks of plyometric training. *Front Physiol*, 21(11), 588-787. DOI: 10.3389/fphys.2020.588787.
- Cumming, S., Smoll, F., Ronald, E. Smith R., & Grossbard, J. (2007). Is winning everything? The relative contributions of motivational climate and won- lost percentage in youth sports. *Journal of Applied Sport Psychology*, 19(3), 322-336, DOI: 10.1080/10413200701342640
- Erčulj F., Blas M, & Bračič M. (2010). Physical demands on young elite European female basketball players with special reference to speed, agility, explosive strengths, and take-off power. *J Strength Cond Res*, 24(11), 2970-8. DOI: 10.1519/JSC.0b013e3181e38107.
- Escribano-Ott, I, Mielgo-Ayuso, J., & Calleja-González, J. (2021). A glimpse of the sports nutrition awareness in Spanish basketball players. *Nutrients*, 14(1), 27. <https://doi.org/10.3390/nu14010027>
- Fort-Vanmeerhaeghe, A., Montalvo, A., Latinjak A., & Unnithan, V. (2016), Physical characteristics of elite adolescent female basketball players and their relationship to match performance. *J Human Kinetics*, 16(53), 167-178. DOI: 10.1515/hukin-2016-0020.
- Guagliano, J.M, Lonsdale, C., Kolt, G. S., & Rosenkranz, R. R. (2014). Increasing girls' physical activity during an organised youth sport basketball program: a randomized controlled trial protocol. *BMC Public Health*, 14(1), 383–383. <https://doi.org/10.1186/1471-2458-14-383>
- Johnston, K., Higginson C., Saffel, H., Moreno, A.C., Bradley, K.E., & Toth, A.P. (2020). The female basketball player. In Laver L., Kocaoglu, B., Cole, B., Arundale A.J.H., Bytomski, J., & Amendola, A. (eds), *Basketball Sports Medicine and Science* (p. 835-845). Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-662-61070-1_66

- Kalén, A, Padrón-Cabo, A, Lundkvist, E, Rey, E., & Pérez-Ferreirós, A. (2021). Talent selection strategies and relationship with success in European basketball national team programs. *Front Psychol*, 12(6),2287. doi: 10.3389/fpsyg.2021.666839..
- Kalin, J., & Waldron, J. (2015). Preferences toward gender of coach and perceptions of roles of basketball coaches. *International Journal of Exercise Science*, 8(4), 303–317. Miguel, L. F., Sanchez, P, A., Sanchez, D, Amado, D., & Calvo, T.G. (2009). Influence of the motivational climate created by coach in the sport commitment in youth basketball players. *Revista de Psicología Del Deporte*, 18(3), 375-378.
- Lima, A.B., Nascimento, J.V., Leonardi, T.J., Soares, A.L., Paes, R.R., Gonçalves, C.E., & Carvalho, H.M. (2020). Deliberate practice, functional performance and psychological characteristics in young basketball players: A bayesian multilevel analysis. *Int J Environ Res Public Health*, 17(11), p.4078-4092. DOI: 10.3390/ijerph17114078.
- Magnusen, M.J., & Rhea, D.J. (2009) Division I athletes' attitudes toward and preferences for male and female strength and conditioning coaches. *J Strength Cond Res*, 23(4), 1084-90. doi: 10.1519/JSC.0b013e318199d8c4.
- Mancha-Triguero, D, García-Rubio, J., Gamonales, J. M., & Ibáñez, S. J. (2021). Strength and speed profiles based on age and sex differences in young basketball players. *International Journal of Environmental Research and Public Health*, 18(2), 1-14 <https://doi.org/10.3390/ijerph18020643>
- Narazaki, K, Berg, K, Stergiou, N., & Chen, B. (2009). Physiological demands of competitive basketball. *Scand J Med Sci Sports*, 19(3):425-32. DOI: 10.1111/j.1600-0838.2008.00789.x.
- Nunes, J.A., Moreira, A, Crewther, B.T., Nosaka, K., Viveiros, L., & Aoki, M.S. (2014). Monitoring training load, recovery-stress state, immune-endocrine responses, and physical performance in elite female basketball players during a periodized training program. *J Strength Cond Res*, 28(10):2973-80. DOI: 10.1519/JSC.0000000000000499.
- Otaegi, X., & Los Arcos, A. (2020). Quantification of the perceived training load in young female basketball players. *Journal of Strength and Conditioning Research*, 34(2), 559–565. <https://doi.org/10.1519/JSC.0000000000002370>
- Portes, R, Jiménez, S. L., Navarro, R. M., Scanlan, A. T., & Gómez, M.-Ángel. (2020). Comparing the external loads encountered during competition between elite junior male and female basketball players. *International Journal of Environmental Research and Public Health*, 17(4), 1456-1466. <https://doi.org/10.3390/ijerph17041456>
- Rail, G. (1990). Physical contact in women's basketball: A first interpretation. *International Review for the Sociology of Sport*, 25(4), 269-285. <https://doi.org/10.1177/101269029002500402>

- Ramos, S, Volossovitch, A., Ferreira, A. P., Barrigas, C., Fragoso, I., & Massuça, L. (2020). Differences in maturity, morphological, and fitness attributes between the better- and lower-ranked male and female U-14 portuguese elite regional basketball teams. *Journal of Strength and Conditioning Research*, 34(3), 878–887. <https://doi.org/10.1519/JSC.0000000000002691>
- Reina, M, García-Rubio, J., & Ibáñez, S.J. (2020). Training and competition load in female basketball: A systematic review. *Int J Environ Res Public Health*, 17(8), 2639-XXXXX. DOI: 10.3390/ijerph17082639.
- Sherry, M, & Zeller, K. (2014). Gender and motivation: A study of the athletic and academic motivations of division I female college basketball players. *Women's Studies*, 43(1), 73–92. <https://doi.org/10.1080/00497878.2014.852425>
- Soares Leonardi, T. J., Silva, J., Nascimento, J. V., Paes, R. R., Gonçalves, C. E., & Carvalho, H. M. (2020). Performance, motivation, and enjoyment in young female basketball players: An interdisciplinary approach. *Journal of Sports Sciences*, 38(8), 873–885. <https://doi.org/10.1080/02640414.2020.1736247>
- Souza, J, Falconi, C. A., Dias, H. M., Brandão, M. R. F., & Zanetti, M. C. (2020). Motivation, parental style and psychological well-being of female basketball school player. *Cuadernos de Psicología Del Deporte*, 20(1), 201–216.
- Zeng, Xu, J., Xu, Y., Zhou, W., & Xu, F. (2022). Effects of 4-week small-sided games vs. high-intensity interval training with changes of direction in female collegiate basketball players. *International Journal of Sports Science & Coaching*, 17(2), 366–375. <https://doi.org/10.1177/17479541211032739>
- Ziv, X., & Lidor, R. (2009). Physical attributes, physiological characteristics, on-court performances and nutritional strategies of female and male basketball players. *Sports Medicine (Auckland)*, 39(7), 547–568. <https://doi.org/10.2165/00007256-200939070-00003>