

Elite netball players' perspectives on long term athlete development programs in South Africa

PETRUS LOUIS NOLTE¹, WILLEM HOLLANDER²

Department of Sport and Movement Studies, University of Johannesburg, SOUTH AFRICA

Published online: September 30, 2020

(Accepted for publication: September 22, 2020)

DOI:10.7752/jpes.2020.05349

Abstract:

Netball is a sport that has shown significant growth in popularity and stature over the past decade. At present the sport features on the world ranking list in 45 countries. South Africa is currently ranked 1st in Africa and 5th in the world. Over time Netball South Africa has increasingly developed and adopted professionalized programs in athlete management and development. One of these being the implementation of elite provincial tournaments, namely the highly competitive Telkom Netball Challenge, which is a semi-professional league, played between 13 top teams from all nine provinces in South Africa. The emphasis in this study falls on long term athlete development programs as part of the athletes' preparations for these competitions. The aim of the study was to record the experiences of South African elite netball players, on the long term athlete development (LTAD) programs, they participated in. The LTAD conceptual framework was utilized to establish the perceived experiences of elite netball athletes who had to rate the training facilities, training programs, scientific support, and coaches involved in the LTAD programs they participated in. This study adopted an explorative descriptive design with a quantitative approach, utilizing a self-structured questionnaire as research instrument. A sample of 172 elite netball players was selected, 118 players from the 13 provincial teams at the 2019 Telkom Netball Challenge, who are currently participating in provincial or national (senior and under age) LTAD programs, as well as 54 players of the U/21 elite group, currently in preparation for the 2022 U/21 World Cup. Construct validity was secured through a member of the Statistical Consultation Services (STATCON) of the University of Johannesburg, who provided feedback on the structural format of the questionnaire while reliability was measured utilising Cronbach Alpha on $p < 0.005$ level of significance (0.87). The results indicated that Netball players make relatively limited use of scientific support within the LTAD programs they participate in. The services of physiotherapists and medical doctors were utilized more extensively than dietary, psychology and lifestyle support services. There is a clear emphasis on team training in LTAD programs in the respective provinces while the lack of training facilities proves to be a significant barrier to the implementation of coordinated and structured LTAD programs. Lastly, relatively healthy coach-athlete relationships, access to, and communication with coaches exist in the provincial LTAD programs, with a relatively high confidence in the knowledge and expertise of coaches that in turn stimulates successful competition performances.

Key Words: *LTAD, Player improvement, High Performance, Player Management*

Introduction

Governments across the globe are increasingly focusing on achieving elite sport success to promote socioeconomic and political goals (Houlihan, 2013). In order to achieve performance outcomes, national sport organizations must position their elite sport programs to capitalize on factors such as access to resources in a globalized and interconnected sport environment (Sotiriadou & De Bosscher, 2018).

Netball is a sport that has globally grown significantly in popularity and stature over the past decade, and now features in 45 countries on their world-ranking list (INF, 2020a). The International Netball Federation (INF) provides opportunities for talented athletes that represent their respective national teams, to participate in major international events such as World Cups, Commonwealth Games, and World University Championships (INF, 2020b). Many of the countries recognized by the INF have implemented professional leagues (McLean et al., 2019). South Africa has achieved significant success in Netball in Africa (ranked 1st), and is currently ranked 5th in the world (INF, 2020a).

The country has competed in numerous major international Netball events since 1992, and is adopting more professionalized programs in the management and athlete development spheres. This is evident in Netball South Africa's (NSA) implementation of highly competitive elite provincial tournaments such as the Telkom Netball Challenge, which is a semi-professional league played between 13 top teams from all nine provinces in South Africa. Most players in these teams are from universities where LTAD programs are offered. Another feature is the placement of elite players in leagues in England, Australia and New Zealand (NSA, 2020) to gain expert knowledge of netball and to be exposed to professional competitions on elite level. In addition, university

Netball teams in South Africa participate in Varsity Sports, a high performance and semi-professional competition between university netball teams (Varsity Sports, n.d.), while South African Schools Netball (SASN) and NSA offer competitions and leagues on various age-levels (SASN, 2020).

In order to develop athletes optimally from foundation to elite level and produce sustainable performance outcomes, there is increased global recognition for a systematic and scientific approach to the development of athletes (Sport for Life, 2020; Trofimenko et al., 2019). The result is an increasingly uniform approach to development pathways for athletes, with local variations accounting for differences in implementation (Houlihan & Zheng, 2013) due to contextual variances. One prominent model that has significantly influenced the delivery of sport programs is Long Term Athlete Development (LTAD) (Ellerton, 2019), which is a planned, systematic and progressive program of athlete development over a long period of time (Balyi, Way & Higgs, 2013). In order to create conditions that are supportive of LTAD programs, investment in elements such as sport sciences support (Blake, 2020), long-term coaches development (LTCD) programs (Way & O’Leary, n.d.; Nolte, 2018), and physical resources such as training facilities (Lee et al., 2016) are critical (Nolte, Burnett & Hollander, 2017). The NSA LTAD model indicates that an integrated and collaborative approach from age group to elite level is required in order to identify and develop talented athletes effectively and appropriately, and ensure life-long participation (NSA LTPD, 2011). Mature sport programs in Australia invest significantly in a range of elements, namely physical resources (training facilities), training programs (including talent identification and development), coaches’ provision and development, international competition, post-career support, and scientific research and innovation (De Bosscher et al., 2015). Consequently, LTAD programs cannot function properly without appropriately designed and effectively applied talent development pathways, continuous sport sciences support, strength and conditioning programs, and highly knowledgeable coaches (Lea & Branko, 2020; Valle, 2018; Meadors, 2012). According to De Bosscher et al. (2015) access to high quality training facilities play a significant role in the success of an elite sport system.

NSA is investing significant resources (including funding) towards an effective LTAD program countrywide, to achieve excellent team performance at the 2023 Netball World Cup to be hosted by South Africa (Gibbs, 2019; Hollander & Nolte, 2020). This incorporates athlete development within all nine provinces in South Africa that are individually managed, but in line with NSA’s constitutional requirements, culminating in representative teams at national and international level. Within the conceptual framework of the LTAD, the aim of the study was to describe the experiences of elite players of the netball LTAD program they participated in. Due to the necessity of athlete development pathways that are implemented by coaches, and supported by sport sciences and physical resources, these elements have been selected for discussion in this paper.

Material & methods

This study adopted an explorative descriptive design with a quantitative approach, utilizing a self-structured questionnaire as research instrument. A sample of 172 elite netball players was selected, 118 players from the 13 provincial teams at the 2019 Telkom Netball Challenge who are currently participating in provincial or national (senior and under age) LTAD programs, as well as 54 players of the U/21 elite group currently in preparation for the 2022 U/21 World Cup.

The research was conducted during the 2019 Telkom Netball Challenge at the University of Pretoria (LC de Villiers Sports Complex) in Gauteng Province, South Africa, as well as at a training camp of the U/21 elite squad in Kempton Park, Gauteng, South Africa, held in 2019. Content validity of the questionnaire was secured by requesting a member of the NSA Executive Committee and two national coaches to read through the questionnaire and provide feedback on the content. Construct validity was secured through a member of the Statistical Consultation Services (STATCON) of the University of Johannesburg that provided feedback on the structural format of the questionnaire while reliability was measured utilising Cronbach Alpha on $p < 0.005$ level of significance (0.87).

The research was approved by the Board of Netball South Africa and ethical conduct implemented according to the processes and procedures approved by the Higher Degrees and Ethics Committees of the Faculty of Health Sciences, University of Johannesburg with clearance number REC-01-30-2019.

Results

The questionnaire contained two sections. Section one relates to biographical information of elite netball players namely age, highest level of participation in netball, status (student, full or part time player), and when first identified as talented player. Section two requested players to rate their experiences on a 4-point Likert scale ranging between “don’t agree”, “slightly agree”, “mostly agree” and “fully agree” on four areas of the LTAD programs they participated in. These included questions relating to the training facilities, training, scientific support, and the coach.

Biographical information

The mean age of the respondents was 22 years of age with 52% (87) indicating that they participated in representative teams at national and international level. Fifty four per cent (92) of the players were students while 19% (33) indicated that they played netball on a full-time, and 81% (137) played on a part-time basis.

Respondents also indicated that they were identified as talented players at school 79% (137), club 12% (19), Varsity Sport 5% (9) and Netball Premier league 4% (6) level.

Training facilities

Netball players responded to three statements on the extent to which they used training facilities in the LTAD programs that they participated in. These statements related to the use of sport accommodation, high performance training facilities and strength and conditioning gymnasiums (Figure 2). A total of 467 responses were recorded with percentages and numbers of players indicated in parentheses: fully agreed 39% (183), mostly agreed 18% (84), slightly agreed 11% (51), and disagreed 32% (149). This indicates that 57% (267) relatively positive responses were recorded, of which 69% (183) fully agreed and 31% (84) mostly agreed with the statements.

An analysis of the individual statements indicates that 41% (65) of the respondents fully agreed that they made use of high performance training centers and 53% (80) of strength and conditioning gymnasiums in their LTAD programs. Only, 44% (68) indicated that they don't agree making use of sport accommodation which indicates that a significant number of players do make use of sport accommodation. In general it could be concluded that the majority of netball players made use of training facilities in the LTAD programs that they participated in. It is interesting to note that many players did not make use of sport accommodation at all. The fact that most of these players lived at home and would have to make use of public transport to train at facilities nearby, could account for this observation. Those who made use of sport accommodation were mostly students who had access to sport accommodation through university scholarships.

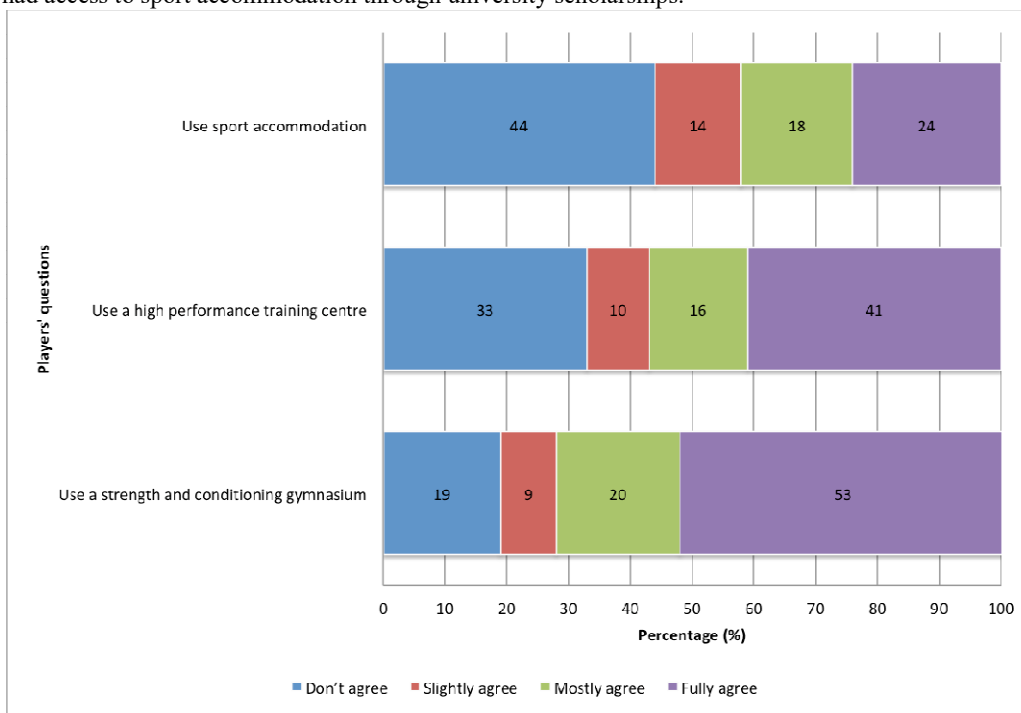


Figure 1: Training facilities

Team and individual training programs

Eight questions were posed to netball players to rate their access to, monitoring, evaluation and communication of individual and team training as part of the LTAD programs they participated in (Figure 3). A total of 1162 responses were recorded with percentages and numbers of respondents indicated in parentheses: fully agreed 38% (437), mostly agreed 26% (288), slightly agreed 14% (158), and disagreed 22% (244). This indicates that 62% (725) relatively positive responses were recorded, of which 60% (437) fully agreed and 40% (288) mostly agreed with the statements.

Elite netball players fully agreed that they had access to team training programs 51% (79), and that team training programs were monitored 43% (64), evaluated 40% (59), and communicated 47% (73). Thirty percent (42) of the respondents fully agreed to having access to, and 35% (48) that their individual training programs were communicated to them. In contrast 33% (46) did not agree that their individual training programs were monitored or evaluated 31% (45).

These results indicate that netball players perceived their LTAD training programs in a positive way, in particular, aspects related to team training. The experience to individual training rated less positive, which could be accounted for by the fact that the majority of netball training is done in team format due to the nature of the sport.

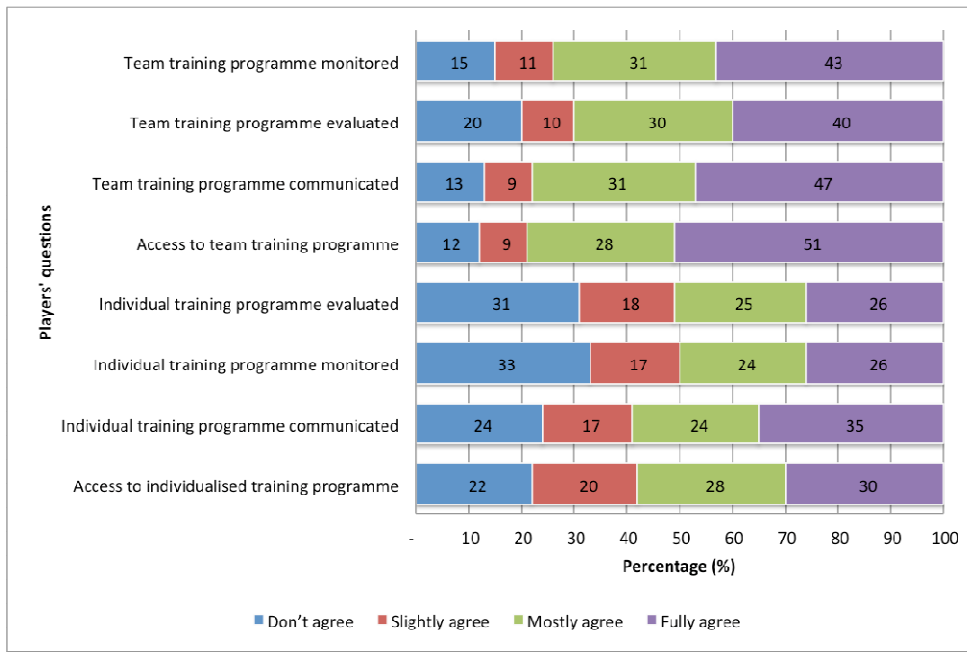


Figure 2: Training program

Scientific support

Netball players were requested to indicate the extent to which they agreed with seven statements relating to their use of scientific support in the elite sport programs they were participating in (Figure 1). A total of 1034 responses were recorded with percentages and numbers of respondents indicated in parentheses: fully agreed 22% (224), mostly agreed 20% (204), slightly agreed 13% (135), and disagreed 45% (471). This provides 42% (428) relatively positive responses in relation to the use of scientific support in the programs that athletes participated in. A majority of 58% (606) players only 'slightly agreed' or 'did not agree' to the use of scientific support in their training programs.

When the results of each statement were analyzed, it was evident that respondents 'fully agreed' with the use of physiotherapists 39% (59) and medical doctors 36% (53). The majority of respondents 'did not agree' to the use of dietary 64% (95), psychology 61% (92), lifestyle 67% (92) and bio-kinetic support 40% (59). It could be inferred that limited scientific support was incorporated in the LTAD programs of the 9 provinces in South Africa.

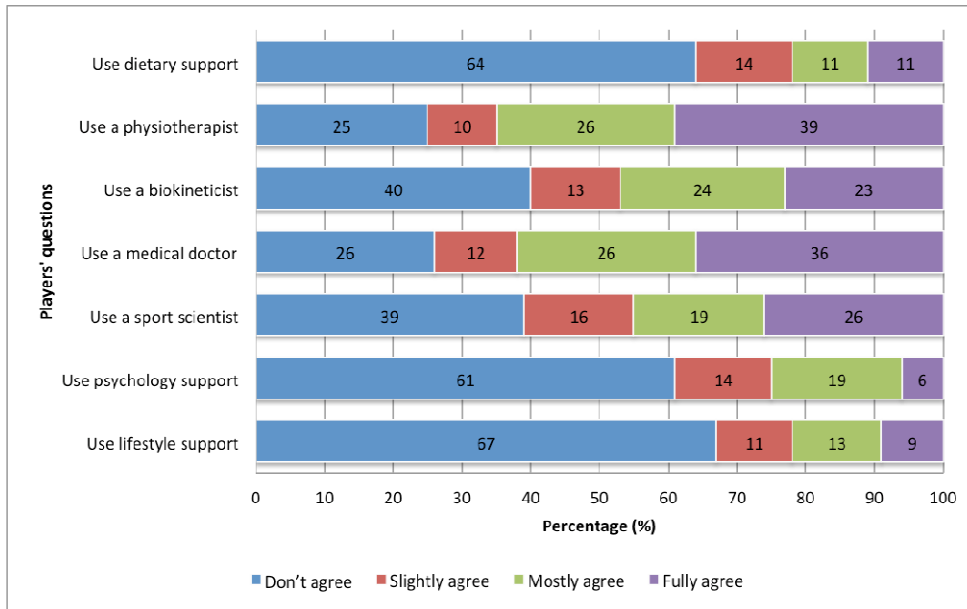


Figure 3: Scientific Support

Coaching

Netball players were requested to respond to seven questions related to their coach. These questions

assessed the experiences of players of their access to expertise and knowledge of, as well as relationship and communication with the coach (Figure 4). A total of 1022 responses were recorded with percentages and numbers of respondents indicated in parentheses: fully agreed 52% (532); mostly agreed 28% (291); slightly agreed 9% (87); and disagreed 11% (112). In conclusion 81% (823) players were relatively positive towards aspects of coaching, with 65% (532) fully agreeing and 35% (291) mostly agreeing to the respective statements. At the level of individual statements, analysis revealed that netball players fully agreed to having access to their coaches 65% (104), communication 56% (82) and meetings on game performance 40% (55), a good relationship with their coaches 54% (79) that stimulates maximum performance 46% (65). Players also fully agreed that their coaches had adequate knowledge 47% (67) and that they are experts in the field of netball 54% (80) to be able to facilitate maximum performance for their teams. These results indicate that the elite netball players perceived their coaches and coaching in a relatively positive way.

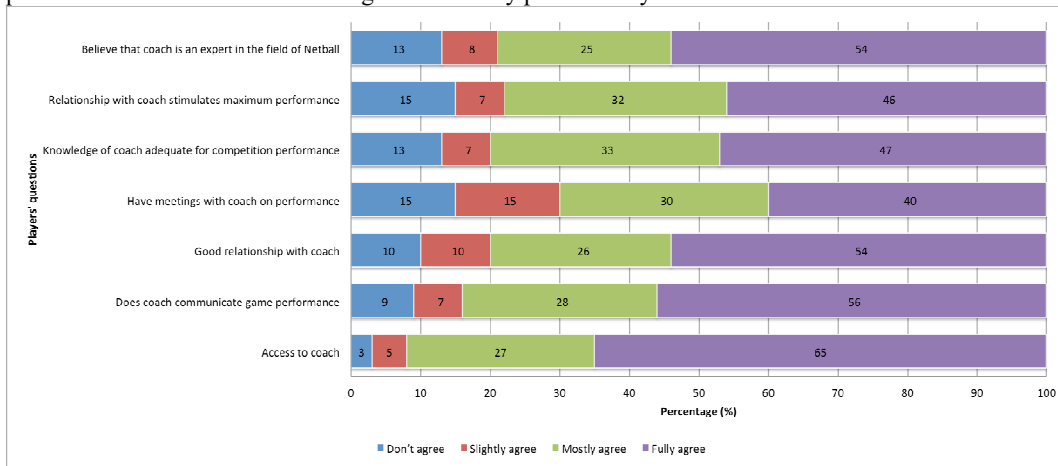


Figure 4: Coaching

Discussion

In order to describe the experiences of elite netball players of the LTAD programs they participated in, results will be discussed under the following sub-headings: training programs, training facilities, scientific support, and coaches, within the context of the LTAD conceptual framework.

Scientific support

Netball players indicated that they make limited use of scientific support within the LTAD programs they participate in. Support services for physiotherapy and medical doctors were used more extensively than the services for dietary, psychology and lifestyle support. Physiotherapy and medical doctors relate closely to the rehabilitation of players. Dietary support, psychology and lifestyle support were services that related more closely to personalized experiences, providing coping mechanisms in training programs. In order to deliver elite players of a high standard of performance at elite level, it is essential that scientific support services are offered uniformly throughout the nine provinces, as part of the LTAD programs they participate in. These results could be interpreted from the perspective of the availability of limited resources available in the respective nine provinces, and as a result there could be limitations in the ability to provide individual players with access to scientific support. Regardless of the reasons, the high number of players who indicated that they do not make use of scientific support to any extent is a matter of concern, within the context of an LTAD program.

Due to the team sport nature of netball, it could also be concluded that these results reflect a large number of teams that do not make use of scientific support, and not necessarily individual athletes. This would imply that there are some provinces where teams make more extensive use of scientific support than others, which would significantly affect the quality of players that are delivered by the respective provinces. Within these provinces, universities often offer LTAD programs, and generally have substantial access to scientific support. Therefore it is essential that provinces and universities combine their efforts in coordinating and delivering scientific support within LTAD programs to support athletes and coaches. The alignment of programs should contribute to greater synergy amongst the stakeholders thus ensuring their support in the achievement of performance outcomes.

Training programs

Whilst the overall perception of players on their training programs was relatively positive, similar trends exist in the experience of training programs found in scientific support. Items such as access to, monitoring, evaluation and communication of team training programs rated relatively more positive than the same items assessing personalized (individualised) training. There is a clear emphasis on team training in LTAD programs in the respective provinces. Training in LTAD should be tailored to suit individual needs (positional fitness and skills) to support the overall process of enhancing team performances. Further to this, the goal of the provincial LTAD programs should not only be to achieve success at national level leagues, but to develop players that

could contribute more successfully to the performance outcomes of representative national teams. An essential aspect is that uniformity and standardization of individual and team training programs should contribute to sustainable performance outcomes, and an environment that has collective support.

Training facilities

Although the majority of netball players were relatively positive about the use of high performance training facilities and strength and conditioning gymnasiums, a relative small number made use of sport accommodation. The results further indicated a positive trend towards the use of training facilities, however the fact that there are numerous players that indicated that they do not make use of high performance training centers or strength and conditioning gymnasiums also implies a lack of access these facilities. Results on sport accommodation could be influenced by university students receiving scholarships to play netball, inclusive of accommodation to participate in university LTAD programs, and maintain their academic programs.

Universities that offer professional programs in netball generally have access to high performance training facilities and strength and conditioning gymnasiums. A lack of training facilities is a significant barrier to the implementation of coordinated and structured LTAD programs, and could result in disparate skills development, quality and performance in players, over an extended period of time. This begs the question of the difference in access to training facilities for players that are in university programs, compared to provinces without university interest in elite netball programs. The difference between players who are attending universities with excellent training facilities and those who do not have access to universities with an interest in elite netball programs, becomes apparent.

Coaching

The collected data showed that Netball players' perceived the different aspects of coaching in a positive light. The results mostly indicated healthy coach-athlete relationships, satisfactory access to, and good communication with coaches. It is particularly important to note that only a very small group of players perceived that they had no access to their coaches. Relatively high confidence was expressed in the knowledge and expertise of coaches to stimulate competition performance. When the results are being analyzed, it should be considered that universities employ full-time coaches, who are also coaching in the respective provinces where they reside, and that they have related tertiary education qualifications. Universities also offer community outreach programs, in support of local clubs, that are often coached by volunteers. This indicates the necessity of having a structured, coordinated and aligned LTAD program that incorporates professional structures that are present in university programs. In addition, coaches of national representative teams are fully employed, which could reflect on a high level of agreement of elite players in respect of items reported on.

Conclusion

Results confirm that several provinces in NSA are still in the process of streamlining their LTAD programs. In particular, the emergence of semi-professional competitions has resulted in the evaluation of stimulated the need for the professionalization of LTAD programs.

The coach-athlete relationship forms the crux of LTAD programs and is seen as an essential component of a performance environment. The nine provinces should consider identifying and training coaches that could contribute positively to their LTAD programs. With regard to scientific support, the training program, and training facilities, a significant challenge is to deliver the LTAD programs uniformly across the country, thereby establishing sustainable performance output and high quality players, successfully representing national teams at international level. The process of establishing uniformity across the spectrum of provinces in South Africa would imply standardizing the services that are delivered. These include securing and providing sufficient resources in training facilities, strength and conditioning gymnasiums, and ensuring that players can access and make use of affordable sport accommodation in the vicinity of their respective training centers. Furthermore, individualized training programs should be prioritized to create and enable a performance environment, through tailor-made scientific support, that incorporates the athlete's lifestyle, dietary, and psychology support. These aspects are specialized services that fall mainly outside the domain of the netball coach, and could further strengthen the already existing positive perceptions of netball players towards their coaches, thus enhancing the LTAD programs and sustainability of performance outcomes throughout the country.

Results have further contributed to the utilization of the LTAD model as an appropriate conceptual framework to identify components of a LTAD program. The LTAD model also provides an effective basis from which player perceptions of the programs that they participate in can be evaluated. Finally, although the perceptions of coaches and administrators were ascertained through qualitative methods in a broader national study on this topic, it is suggested that a larger sample size of coaches and administrators be incorporated in order to ascertain their perceptions

References

- Balyi, I., Way, R., & Higgs, C. (2013). Long-term athlete development. Champaign, IL: Human Kinetics.
 Blake, R. (2020). Structuring a long term athletic development (LTAD) model in a secondary school setting. Retrieved from <https://www.trainwithpush.com/blog/structuring-a-long-term-athletic-development-ltad-model-in-a-uk-secondary-school-with-just-one-coach>

- De Bosscher, V., Shibli, S., Westerbeek, H., & Van Bottenburg, M. (2015). Successful elite sport policies: An international comparison in 15 nations (SPLISS 2.0). Maidenhead: Meyer & Meyer (UK) Ltd.
- Ellerton, H. (2019). *What is the LTAD model and should you be using it?* Retrieved from <https://humankinetics.me/2019/04/12/ltad-model/>
- Gibbs, H. (2019). *Significant investment from SA government secured Netball World Cup*. Retrieved from <https://www.iol.co.za/sport/netball/significant-investment-from-sa-government-secured-netball-world-cup-19708982>
- Hollander, W. & Nolte, P.L. (2020). *A framework for a contextual Netball South Africa elite sport system*. Unpublished report.
- Houlihan, B. (2013). Commercial, political, social and cultural factors impacting on the management of high performance sport In P. Sotiriadou, & V. De Bosscher (Eds.), *Managing high performance sport*(pp. 17–29). Abingdon: Routledge.
- Houlihan, B. & Zheng, J. (2013). The Olympics and elite sport policy: Where will it all end? *The International Journal of the History of Sport*, 30(4): 338-355. <https://doi.org/10.1080/09523367.2013.765726>
- International Netball Federation (INF) (2020a). *Current world rankings*. Retrieved from <https://netball.sport/events-nd-results/current-world-rankings>
- International Netball Federation (INF) (2020b). *Events*. Retrieved from <https://netball.sport/events-and-results>
- Lea, Z. & Branko, S. (2020). Drop out rate of Slovenian's most successful young athletes. *Journal of Physical Education and Sport*, 20(3). <https://doi.org/10.7752/jpes.2020.s3293>
- Lee, S.A., Ju, Y.J., Lee, J.E., Hyun, I.S., Nam, J.Y., Han, K., & Park, E. (2016). The relationship between sports facility accessibility and physical activity among Korean adults. *BMC Public Health*, 16(893). <https://doi.org/10.1186/s12889-016-3574-z>
- Mclean, S., Hulme, A., Mooney, M., Read, G.J.M., Bedford, A., & Salmon, P.M. (2019). A systems approach to performance analysis in women's netball: Using work domain analysis to model elite netball performance. *Front. Psychol.* 10. <https://dx.doi.org/10.3389%2Ffpsyg.2019.00201>
- Meadors, L. (2012). *Practical application for long-term athletic development*. Retrieved from <https://www.nsc.com/education/articles/practical-application-for-long-term-athletic-development/>
- Netball South Africa (NSA) (2020). *About NSA*. Retrieved from <https://netball-sa.co.za/about-nsa/>
- Nolte, P.L., Burnett, C. & Hollander, W. (2017). Perspective of coaches on LTAD of elite judo athletes: A comparative analysis. *South African Journal for Research in Sport, Physical Education*, 39(1:2).
- NSA LTPD (2011). *From playground to Protea*. Retrieved from <https://www.sascoc.co.za/wp-content/uploads/2013/04/Netball-LTPD-summary-document-June-2011.pdf>
- Sotiriadou, P. & De Bosscher, V. (2018). Managing high-performance sport: Introduction to past, present and future considerations. *European Sport Management Quarterly*, 18(1). <https://doi.org/10.1080/16184742.2017.1400225>
- South African Schools Netball (SASN) (2020). *Events*. Retrieved from <https://www.saschoolsnetball.co.za>
- Sport for Life (2020). *Long-term development*. Retrieved from <https://sportforlife.ca/long-term-development/>
- Trofimenko, V., Oksana, R., Olena, A., Ivanchuk, M., Bohdanyuk, A., Zoriy, Y., Moseichuk, Y., Koshura, A., Yarmak, O. & Galan, Y. (2019). Analysis of the dynamics of physical development and functional state of 9-12-year-old schoolchildren playing volleyball. *Journal of Physical Education and Sport*, 19(1). <https://doi.org/10.7752/jpes.2019.01107>
- Valle, C. (2018). *5 Challenges every long-term athletic development plan must overcome*. Retrieved from <https://simplifaster.com/articles/ltad-programs-biggest-challenges/>
- Varsity Sports (n.d.). *Varsity Netball*. Retrieved from <http://varsitysportssa.com/varsity-netball/>
- Way, R., & O'Leary, D. (n.d.). *Long-term coach development concept*. Retrieved from <https://sportforlife.ca/portfolio-view/long-term-coach-development-concept>
- Nolte, P.L. (2018). *Management of judo federations: A comparative analysis*. Doctoral thesis: University of Johannesburg.