

Reasoning of dissertation topic and competency of potential supervisor for admission onto joint LSU and TU doctoral studies in 2022

Area of research (title and code)	
Field of research (title and code)	
Topic of research	Basketball Science and Health
Institution	Lithuanian Sports University

Potential supervisor

Pedagogical and scientific degree	Name, surname	Academic position
PhD	Daniele Conte	Senior Researcher

Short reasoning of proposed dissertation topic

Title
Discovering the health benefits of basketball
Short research description (including aims and objectives) (maximum 1500 characters).
<p>Possessing adequate physical activity levels is fundamental for adults and older adults for the prevention of chronic disease, which are among the most important causes for mortality (Kokkinos et al., 2011). Team sports represents an important means to enhance the physical activity levels in sedentary people. Indeed it can motivate people to be involved in regular training activities and might possess higher adherence compared to regular endurance and strength-based activities (Krustrup et al., 2010). While there is an established body of literature suggesting the health benefits of team sports such as football and handball, there is scarce information about the health benefits of playing basketball in different adult populations. To date, only one previous investigation revealed that 3 months of basketball small-sided games (3v3) played on half and full court improved the overall fitness profile in untrained adult men (20 - 42 years) (Randers et al., 2018). However, no information is available on other populations such as women, older adult and no comparison was made between basketball activity and other popular activities such as high-intensity interval training. Therefore the aim of this project will be to enhance the knowledge about the health benefits of playing basketball in various populations.</p>
References
<p>Kokkinos, P., Sheriff, H., & Kheirbek, R. (2011). Physical inactivity and mortality risk. <i>Cardiology research and practice</i>, 2011.</p> <p>Krustrup, P., Aagaard, P., Nybo, L., Petersen, J., Mohr, M., & Bangsbo, J. (2010). Recreational football as a health promoting activity: a topical review. <i>Scandinavian journal of medicine & science in sports</i>, 20, 1-13.</p> <p>Randers, M. B., Hagman, M., Brix, J., Christensen, J. F., Pedersen, M. T., Nielsen, J. J., & Krustrup, P. (2018). Effects of 3 months of full-court and half-court street basketball training on health profile in untrained men. <i>Journal of Sport and Health Science</i>, 7(2), 132-138.</p>
Relevance of the problem, its novelty at national and international level (maximum 1500 characters).
<p>This project has a great relevance at national and international level. Indeed, discovering new tools, as it might be playing basketball, to decrease the sedentary habits, while increasing the physical activity levels across different populations is one of the main aims of each country. Indeed,</p>

possessing healthy populations is warranted to decrease the burden of medical expenses sustained by governments for the public health care of their citizens. This project would particularly fit with the Lithuanian population considering the high popularity of basketball and that many people played basketball across their life at some stage. From a scientific standpoint, this project has also a big relevance considering the potential of basketball as a form of activity to produce health benefits and considering the scarce amount of literature available on this topic. Particularly, while some study showed the potential effect of playing basketball on health, they were mainly descriptive studies (Stojanovic et al., 2021), while only one investigation entailed an intervention design (Randers et al., 2018). Finally, this project has a good possibility to receive grants from national (LMT) or international (EU funds) bodies, which are usually very interested to topics health referred.

References

Stojanović, E., Stojiljković, N., Stanković, R., Scanlan, A. T., Dalbo, V. J., & Milanović, Z. (2021). Recreational basketball small-sided games elicit high-intensity exercise with low perceptual demand. *Journal of Strength and Conditioning Research*, 35(11), 3151-3157.

Randers, M. B., Hagman, M., Brix, J., Christensen, J. F., Pedersen, M. T., Nielsen, J. J., & Krstrup, P. (2018). Effects of 3 months of full-court and half-court street basketball training on health profile in untrained men. *Journal of Sport and Health Science*, 7(2), 132-138.

Research methods and possibilities for conducting these studies (maximum 1500 characters).

This project will entail the development of various intervention studies with counterbalance crossover design across different populations (young adults, adults and older adults, active and sedentary etc.). The main health-related measures will be:

- 1) VO_{2max} to assess the fitness profile
- 2) Systolic and diastolic blood pressure
- 3) Blood glucose, plasma insulin, total cholesterol, HDL-C, LDL-C, triglycerides
- 4) Bone mineral content and bone mineral density

Across the protocols, the above-mentioned parameters will be measures pre- and post- basketball and control interventions.

Please indicate the links between the proposed topic for the doctoral thesis and biomechanics / physical therapy / sports study programs.

The proposed project is in line with the following master's degrees:

- 1) Physical activity and public health
- 2) International Basketball Coaching and Management
- 3) International Master in Performance Analysis of Sport

Moreover, it overlaps the contents for the following bachelor's degrees:

- 1) Sport Coaching
- 2) Exercise, Nutrition and Stress Management

Is the proposed topic for the doctoral thesis related to currently funded research projects? Please indicate the links between the proposed topic for the doctoral thesis and funded research projects

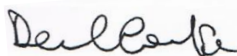
The proposed project is not referred to any funded research project.

Is the proposed topic for the doctoral thesis related to joint research with a foreign institution? Please indicate the links between the proposed topic for the doctoral thesis and research with a foreign institution

The project is not developed in collaboration with foreign institutions yet. In case it will start, it will be considered the possibility to collaborate with foreign institutions.

Currently I am supervisor of 3 doctoral students and co-supervisor of 1 doctoral student

Supervisor



(signature)

Daniele Conte

(Name, surname)

Date 09.05.2022