

Guest Editorial Preface

Special Issue on Dialogues Between Dance and Science

Bárbara Pessali-Marques, Manchester Metropolitan University, Manchester, UK & Bastidores Conditioning Centre, Belo Horizonte, Brazil

INTRODUCTION

In the last few years, concerns about the health of dancers and the consequences of physical training have increased considerably. The physical needs of the dancers and the type of training they need to achieve the highest performance and to decrease the great rate of severe injuries have awakened the necessity of a more scientific knowledge about the dance area considering its particularities, namely, the advent of Dance Science. In the meantime, dance choreographers have been increasingly adopting an athletic approach to dance movements (Koutedakis, Hukam, Metsios, & Nevill, 2007). Concomitantly, the increase in the amount of internal and external stressful factors, such as to obtain a position in professional dance companies, or due to the pressure for a great performance in dance competitions, contribute exposing the dancers to physical and psychological imbalances (Noh, Morris, & Andersen, 2003). High levels of cortisol (Rohleder, Beulen, Chen, Wolf, & Kirschbaum, 2007), overtraining and burnout syndromes (Koutedakis, 2000) are some consequences of these imbalances. Therefore, the comprehensive study of the load and constraints imposed to dancer's body (Angioi, Metsios, Koutedakis, & Wyon, 2009; Bennell et al., 1999) is required to decrease injury risks and help to improve the performance of a range of different movements (Angioi, Metsios, Twitchett, Koutedakis, & Wyon, 2009; Bennell et al., 1999).

A few pieces of research have been conducted considering dancers necessities; the majority, however, were published in sport science journals. There is a lack of scientific journals specific to this area, especially regarding the need to build connections between different disciplines of Dance Science considering the dancer a complete human being. Nevertheless, there is also a gap to be filled allowing the scientific knowledge to reach the dancers and the professionals working with them.

The Dance Science (DS) is a recent field that has been developing in the last 20 years through researches performed involving different professionals in areas such as medicine, education, psychology, nutrition, biomechanics and dance, among others. The aim of DS is to maintain the general well-being and good quality of the health, training and performance of the dancers. Nevertheless, more connections between the areas are needed. Due to this necessity, the special issue on the "Dialogues Between

Dance and Science” was proposed. The intention of this special issue is to examine comprehensively the needs of dancers as a complete human being, reducing the gap between the scientific theory and the practice of dance. Therefore, it is intended to combine existing knowledge about dance with an understanding of scientific principles; increasing and improving the professional situation for dancers and dance teachers; and encouraging further studies in the area.

The special issue also brings a new multidisciplinary approach to DS based in some principles. Firstly, the dancer is not an athlete; once this population respond distinctly when compared to non-dancers and athletes of sports modalities (Nielsen, Crone, & Hultborn, 1993; Pessali-Marques, 2015). In addition, “dance” may not be considered one modality only; indeed, there are many styles (e.g., classical ballet, contemporary dance, belly dance, ballroom dance, urban dance) that require distinct physical capacities (Wyon et al., 2011). Secondly, two repertoires performed in the same season or the position held in the company may require different physical capacities from the dancers of the same dance company (Twitchett, Angioi, Koutedakis, & Wyon, 2010). Thirdly, most tests demand equipment development to proper assess dancers physical capacities (Pessali-Marques, 2016). Finally, neither the dancer as a human being should be fragmented into pieces and studied separately, nor art should be separated from science. Although scientific studies require certain level of fragmentation to allow specialization (Siegler, Biazzin, & Fernandes, 2014), during the performance, biomechanical movements, physiological responses and psychological characteristics affect the dancer, influencing in a different way that would happen in a controlled environment. In addition, some experiences on the stage are not reproducible on the laboratories; it is not only the body that affects the dance, the dance also affects the body.

Through the scientific evaluation and physical assessments, however, either individual and/or collective weaknesses and strengths are identified, and specialized intervention may be developed for each and all the aforementioned aspects. People’s individuality: sex (Cohen, Segal, & McArdle, 1982), age, level of training, amount of training (Kirkendall et al., 1984), type of training, dance style and, physical and emotional characteristics are also components to be considered during the assessment.

Contributors are international professionals and academics experts in different fields of research with a dance background, aiming to establish the interceptions culminating in the construction of a reference model of the dance and its multi-dimensional characteristics. This material will be accessible for dancers, teachers, researchers, all the professionals who work with dancers and any people whom the dance may concern.

In this regard, the first article presents the Brazil-United Kingdom (BR-UK) Dance Medicine and Science (DMS) Network as a potent place for poetic-creative research. The paper describes the actions and the main objective of the network: to develop research and collaborative services between universities, private institutions and independent researchers in the DMS, establishing transdisciplinary ways for the scientific advancement.

The second article reviews the literature to evaluate dance as a supplementary activity on cardiac rehabilitation, considering physical demands, dance socio cultural aspects and regular practice related effects on cardiac patients' health and quality of life. This work highlights the multidirectional relationship between the dance and the body health.

The third article offers different perspectives of the same topic: creativity. It outlines an argument for a greater focus on the creative demands of dance within dance science, highlighting some the challenges of, and barriers to, research in the psychology of creativity in dance, before making a number of recommendations to encourage the growth of this important research area.

The last article evaluates the effect of a supplementary resistance training program on passive and active hip external rotation on a ballet group. The authors studied the effects of a specific training program developed according to the dancers' needs; however, the results were analyzed individually, in a multiple case study, once the generalization of a response was not considered more important than the individual response.

The great diversity of these discussions and a broad scope gathered in this issue pursue a dialogue that merges the boundaries between dance and science.

Bárbara Pessali-Marques

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