

# Contents

## **Assessment and Effectiveness in Sports and Outdoor Recreation**

<b>Effect of Rater Expertise on Subjective Agility Assessment . . . . .</b>	<b>3</b>
Chika Eke and Leia Stirling	

<b>Analysis of Pitching Skills of Major League Baseball Players . . . . .</b>	<b>15</b>
Michiko Miyamoto and Akihiro Ito	

<b>Methodology for the Assessment of Clothing and Individual Equipment (CIE) . . . . .</b>	<b>30</b>
Leif Hasselquist, Marianna Eddy, K. Blake Mitchell, Clifford L. Hancock, Jay McNamara, and Christina Caruso	

<b>Dynamic Model of Athletes' Emotions Based on Wearable Devices . . . .</b>	<b>42</b>
Damien Dupré, Ben Bland, Andrew Bolster, Gawain Morrison, and Gary McKeown	

## **Injury Prevention and Analysis of Individual and Team Sports**

<b>Design of a Secure Biofeedback Digital System (BFS) Using a 33-Step Training Table for Cardio Equipment . . . . .</b>	<b>53</b>
Xiaokun Yang and Nansong Wu	

<b>Blast Performance of Demining Footwear: Numerical and Experimental Trials on Frangible Leg Model and Injury Modeling. . . . .</b>	<b>65</b>
Mehmet Karahan and Nevin Karahan	

<b>The Effects of Cupping Therapy on Reducing Fatigue of Upper Extremity Muscles—A Pilot Study. . . . .</b>	<b>73</b>
Chien-Liang Chen, Chi-Wen Lung, Yih-Kuen Jan, Ben-Yi Liao, and Jing-Shia Tang	

<b>Risk of Injuries Caused by Fall of People Differing in Age, Sex, Health and Motor Experience . . . . .</b>	<b>84</b>
Roman Maciej Kalina and Dariusz Mosler	
<b>Physical Fitness and Exercise</b>	
<b>Development of a Depth Camera-Based Instructional Tool for Resistive Exercise During Spaceflight . . . . .</b>	<b>91</b>
Linh Vu, Han Kim, Elizabeth Benson, William Amonette, Andrea Hanson, Jeevan Perera, and Sudhakar Rajulu	
<b>The Effect of Awareness of Physical Activity on the Characteristics of Motor Ability Among Five-Year-Old Children. . . . .</b>	<b>100</b>
Akari Kamimura, Yujiro Kawata, Shino Izutsu, and Masataka Hirose	
<b>Effect of Relative Age on Physical Size and Motor Ability Among Japanese Elementary Schoolchildren. . . . .</b>	<b>108</b>
Yujiro Kawata, Akari Kamimura, Shino Izutsu, and Masataka Hirose	
<b>Non-apparatus, Quasi-apparatus and Simulations Tests in Diagnosis Positive Health and Survival Abilities . . . . .</b>	<b>121</b>
Roman Maciej Kalina and Władysław Jagiełło	
<b>Combined Effects of Lower Limb Muscle Fatigue and Decision Making to the Knee Joint During Cutting Maneuvers Based on Two Different Position-Sense-Acuity Groups. . . . .</b>	<b>129</b>
Xingda Qu and Xingyu Chen	
<b>Activation Sequence Patterns of Forearm Muscles for Driving a Power Wheelchair . . . . .</b>	<b>141</b>
Chi-Wen Lung, Chien-Liang Chen, Yih-Kuen Jan, Li-Feng Chao, Wen-Feng Chen, and Ben-Yi Liao	
<b>Direct and Indirect Effect of Hardiness on Mental Health Among Japanese University Athletes. . . . .</b>	<b>148</b>
Shinji Yamaguchi, Yujiro Kawata, Nobuto Shibata, and Masataka Hirose	
<b>A Real-Time Feedback Navigation System Design for Visually Impaired Swimmers. . . . .</b>	<b>155</b>
Ze En Chien, Chien-Hsu Chen, Fong-Gong Wu, Nien-Pu Lin, Tong Hsieh, and Tzu Hsuan Hong	
<b>Author Index. . . . .</b>	<b>167</b>

Advances in Human Factors in Sports, Injury Prevention  
and Outdoor Recreation

Proceedings of the AHFE 2017 International  
Conference on Human Factors in Sports, Injury  
Prevention and Outdoor Recreation, July 17-21, 2017,  
The Westin Bonaventure Hotel, Los Angeles, California,  
USA

Ahram, T. (Ed.)

2018, X, 168 p. 52 illus., Softcover

ISBN: 978-3-319-60821-1