



Praeger Handbook of

SPORTS MEDICINE AND ATHLETE HEALTH

Volume Three

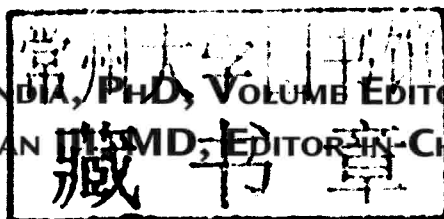
PSYCHOLOGICAL PERSPECTIVES

Ruben J. Echemendia, PhD, Volume Editor and Claude T. Moorman III, MD, Editor-in-Chief

Praeger Handbook of Sports Medicine and Athlete Health

Volume 3
Psychological Perspectives

RUBEN J. ECHEMENDIA, PH.D., VOLUME EDITOR
CLAUDE T. MOORMAN, PH.D., EDITOR-IN-CHIEF



AN IMPRINT OF ABC-CLIO, LLC
Santa Barbara, California • Denver, Colorado • Oxford, England

Copyright 2011 by Claude T. Moorman III, Donald T. Kirkendall, and Ruben J. Echemendia

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, except for the inclusion of brief quotations in a review, without prior permission in writing from the publisher.

Library of Congress Cataloging-in-Publication Data

Praeger handbook of sports medicine and athlete health / Claude T. Moorman III, editor-in-chief.

p. ; cm.

Other title: Handbook of sports medicine and athlete health

Includes bibliographical references and index.

ISBN 978-0-313-35640-7 (hard paper (set) : alk. paper) — ISBN 978-0-313-35641-4 (ebook (set))

1. Sports medicine—Handbooks, manuals, etc. 2. Athletes—Health and hygiene—Handbooks, manuals, etc. I. Moorman, Claude T. II. Title: Handbook of sports medicine and athlete health.

[DNLM: 1. Sports Medicine. 2. Athletic Injuries. 3. Sports—psychology. QT 261 P897 2011]

RC1211.P73 2011

617.1'027—dc22

2010023432

ISBN: 978-0-313-35640-7

EISBN: 978-0-313-35641-4

15 14 13 12 11 1 2 3 4 5

This book is also available on the World Wide Web as an eBook.

Visit www.abc-clio.com for details.

Praeger

An Imprint of ABC-CLIO, LLC

ABC-CLIO, LLC

130 Cremona Drive, P.O. Box 1911

Santa Barbara, California 93116-1911

This book is printed on acid-free paper (∞)

Manufactured in the United States of America

Praeger Handbook of Sports Medicine and Athlete Health

Preface

Ruben J. Echemendia

Sports have been an important aspect of the human experience since the time of recorded history. It has been observed that sports play a critical role in healthy human development as well as cultural development. Competition is an integral part of human nature, and sports allow for an appropriate channeling of competitive urges and drives. People of all cultures engage in sports activities, and the variety of sports that exists is as diverse as the cultures of the people that engage in those sports. The modern Olympic games are an example of the ubiquitous presence of sports globally and the important role that sports play not only as a vehicle for exercise and fitness but also as a means for diplomacy. Sports also allow for the expression of the peak levels of performance that can be reached through skill, perseverance, dedication, and motivation.

Psychology as a discipline has deep historical roots and a broad reach. Given the centrality of sports in the human experience and the important role that psychology has played in understanding human behavior, it is not surprising that the two have come together in the form of sports psychology—a science that is based on understanding and modifying human behavior in the context of sport and exercise. The discipline of sports psychology is perhaps as varied as the sports that it covers, given that sports psychology is actually an amalgam of psychology, sports and exercise science, anthropology, sociology, and motor learning, to name but a few. In view of the complexity and diversity of sports psychology, it is beyond the scope of this volume

to provide an exhaustive review of the scientific literature. Rather than being exhaustive, this volume seeks to acquaint the reader with key aspects of sports psychology by selectively sampling traditional and contemporary areas of inquiry and intervention. Consistent with the other volumes in this set, the chapters that follow will not provide extensive or encyclopedic reference lists. Instead, these chapters begin with the assumption that the reader is new to the scientific study of sports psychology and is seeking a broad introduction to the area. The goal of these chapters, then, is to whet the reader's appetite to engage in further reading and more in-depth study of those areas that are personally appealing.

The volume begins with a historical overview of sports psychology that traces the historical underpinnings of the discipline, the factors that shaped various lines of inquiry, the emergence of governance bodies, the internal tensions that exist within the field, and a sampling of traditional areas of investigation. Mann and Janelle then tackle the important role that attention plays across all aspects of sports endeavors. They note that irrespective of sport, ability level, or physical or cognitive demands, athletes must be able to focus attention on the right things at the right times. Successful athletes must be able to distinguish between internal and external distractions and relevant stimuli that are crucial for the proper execution of the skill or sports.

Coaches are central figures in the world of sports that are often revered or ascribed godlike status. Alternatively, they can be vilified and ridiculed when their team does not perform up to expectations. Vernacchia explores the psychosocial aspects of coaching and athletic leadership. He reviews important factors within the coach's world, the influence of the coach, the role of athletic leadership, the basic factors involved in effective coaching, and holistic coaching. Anyone who has had a coach can readily recognize the integral role coaches can play in the development of both athletic talent and personal excellence, while also understanding the negative consequences that arise as a result of poor or ineffective coaching.

Training leads to success. Therefore, train, train, train until you are exhausted, and then train again—not only today and tomorrow, but throughout the season, or even your career. The press for continuous training, even at very young ages, has become commonplace in sports. Raglin and Kenttä address the important question, "How long can these practices continue before records stop falling or athletes begin to break down?" They explore the notion of Overtraining Syndrome, which refers to the long-held observation that training regimens that

improve performance for the majority of athletes may have deleterious effects for other individuals of equal skill and conditioning.

Identifying the personality profiles or characteristics that exemplify great athletes has been the Holy Grail for a great number of sports psychologists for many years. Given the widespread interest in this area, it would be reasonable to expect that sports psychology has a great deal to say on the subject. Webbe and his colleagues explore the core studies that have examined the relationship between personality variables and sports-related performance and behavior. Of particular interest are the personality factors that define risk of athletic injury as well as recovery from injury.

Russo and Marikle build on the foundation laid by Webbe et al. to further explore treatment, prevention, and understanding of the psychological ramifications of athletic injuries. The importance of this topic is underscored by the estimated 17 million people who are injured each year in sport- and exercise-related activities. Their chapter focuses on the psychological aspects of injuries sustained during sport and athletic activities, which is important to both the athletes who sustain the injuries and the sports medicine professionals who treat these athletes.

Bruce and Kym Burke then take us on a departure from the traditional research on sport psychology. Using their personal experiences from running a very successful gym, they identify the challenges, as well as some of the solutions, for becoming fit. They draw upon their experiences of working with a broad range of clients, ranging from the elderly to the elite athlete, inserting actual client experiences in order to reinforce their points. In a world filled with seemingly unending self-help volumes and a multibillion-dollar diet industry, they ask: Why have so many “failed” at exercise? What are the keys to a successful exercise experience? What does it mean to be healthy? What does it take to be fit?

Student-athletes are faced with tremendous amounts of pressure to compete, to be successful students, and to manage the various demands of their lives stoically and without complication. Vásquez Guerrero and his colleagues examine the unique challenges that student-athletes present to the sports medicine team. The clinically oriented sports psychologist must understand the crucible-like environment of pressures and relationships in which the athletes are expected to perform. They also must be cognizant of the developmental tasks and individual factors that impact a student-athlete’s health, well-being, and performance. This chapter describes the university

environment in which many student-athletes live and work, the developmental factors that mitigate or exacerbate psychopathology, and reviews approaches for assessing and treating student-athletes. The issues and intervention strategies that are discussed are applicable to athletes competing at all skill levels.

In a related although distinctly different topic area, Steinlight and Putukian examine what has been called the “Female Athlete Triad,” which refers to the three interrelated components of amenorrhea, disordered eating, and osteoporosis. The importance of this chapter is underscored by the exponential increase in physical activity and sports participation among women. This chapter explores traditional definitions of the triad, the associated symptoms, effective interventions, and our current understanding of the spectrum that exists from health to disease.

Lastly, I explore and describe the emerging field of sport neuropsychology and the detection, treatment, and proper management of sports-related traumatic brain injury. At this time of this writing, there has been a virtual explosion in the popular media regarding the possible long-term consequences of sports-related brain injuries that may include relentless depression, dementia, and structural abnormalities in the brain. These concerns have led the U.S. Congress to conduct hearings into the National Football League’s (NFL) management of concussions, and the NFL has made significant changes in its concussion management protocols. This chapter will describe the pathophysiology of concussion, the epidemiology of the injury, the signs and symptoms of concussion, current assessment methods, and the development of scientifically based return to play protocols.

Taken together, we hope that these chapters stimulate, excite, and leave you, the reader, asking for more. In doing so, we hope to energize your interest to explore this exciting area in greater detail, and to incorporate some of the principles and techniques in your own life to enhance your fitness, exercise, and sports participation.

Contents

	Preface	
	<i>Ruben J. Echemendia</i>	vii
Chapter 1:	Sports Psychology: A Historical Overview	
	<i>Ruben J. Echemendia</i>	1
Chapter 2:	Optimizing Attentional Allocation and Sport Performance Using the Five-step Strategy	
	<i>Derek T. Y. Mann and Christopher M. Janelle</i>	15
Chapter 3:	Psychosocial Aspects of Coaching and Leadership	
	<i>Ralph A. Vernacchia</i>	41
Chapter 4:	A Psychological Approach toward Understanding and Preventing the Overtraining Syndrome	
	<i>John S. Raglin and Göran Kenttä</i>	63
Chapter 5:	Personality: Contributions to Performance, Injury Risk, and Rehabilitation	
	<i>Frank M. Webbe, Christine M. Salinas, Stephanie J. Tiedemann, and Kristy Quackenbush</i>	77
Chapter 6:	The Psychological Aspects of Sports-related Injuries	
	<i>Stephen A. Russo and Susana Quintana Marikle</i>	97
Chapter 7:	The Psychological Building Blocks of Exercise, Health, and Fitness: Observations Borne of Experience	
	<i>Bruce Burke and Kym Burke</i>	111

Chapter 8:	Psychological Care of Student-Athletes in a University Environment <i>Desi Alonzo Vásquez Guerrero, Donna K. Broshek, Jason R. Freeman, and Katherine E. Cutitta</i>	135
Chapter 9:	The Female Athlete Triad <i>Sasha Steinlight and Margot Putukian</i>	155
Chapter 10:	Concussion in Sport: Neuropsychological and Psychological Considerations <i>Ruben J. Echemendia</i>	171
	Index	195
	About the Editors and Contributors	201

Chapter 1

Sports Psychology: A Historical Overview

Ruben J. Echemendia

Sports psychology is a multidisciplinary research and applied science that traces its roots to philosophy, movement science, exercise science, psychology, and sociology, to name but a few. As a result of this amalgam of disciplines, sports psychology may be said to have “a long past but a short history.” Indeed, Mahoney (1989) made an interesting observation when he described a paradox that exists with regard to sports psychology. He noted that although the conceptual roots of sports psychology can be traced to prehistoric antiquity, sports psychology has only recently become visible and popular. The goal of this chapter is to lay a historical foundation upon which the following chapters of this volume can be built. In doing so, this chapter will not present an exhaustive review of the historical literature, but rather a selected review where key areas are touched upon.

Broadly defined, sports psychology is the scientific study and application of psychological principles to athletic endeavors, including exercise and recreational/competitive sports. Williams and Straub (2006) further differentiate sports psychology by distinguishing among its component parts: “Applied sport psychology focuses on one facet of sports psychology, that of identifying and understanding psychological theories and interventions that can be applied to sports and exercise to enhance the performance of personal growth of athletes and physical activity participants” (p. 1). Psychological

interventions can take many forms and may be used to enhance positive experiences and promote positive mental health, or they can be used to help ameliorate psychological disturbances such as anxiety and depression. From the perspective of promoting positive performance characteristics, it has been argued that one important goal of psychological interventions includes teaching athletes to consistently create an ideal state of mind that will cause them to consistently channel their skills to achieve optimal performance. At a more basic level, positive mental health can be enhanced and distressing psychological symptoms minimized by the simple application of exercise, since it has long been known that physical exercise has a positive effect on a broad range of psychological and medical conditions. According to Mahoney (1989), "In the case of Humans, the evidence is now quite extensive: recreational play and athletics are integral to healthy personality development, and they are very important elements of societal and cultural development as well" (p. 110).

The roots of experimental sports psychology can be traced to the early scientific investigations that focused on kinesthetics and reaction time. It has been noted that "motor psychology" predated the emergence of sports psychology by 50 years. Wiggins (1984) commented on the important and early contributions of Wilhelm Wundt in 1875, who, along with his students, studied simple and complex reaction times. Although the origins of moderate sports psychology have been traced to physical education and exercise science, some of the earliest and most influential scientific publications were conducted by psychologists who had developed a special interest in sports and recreation.

Norman Triplett (1898), a student of Stanley Hall at Clark University, is widely regarded as having the first reported experiment in the field of sports psychology. Interested in the area of social facilitation, Triplett investigated bicycle racing and the winding of fishing reels under conditions that were competitive and noncompetitive. He found that paced races (more than one racer) were 25 percent faster than those races in which there was only one racer. He then later confirmed these field observations in more controlled laboratory studies where he used a reel winding paradigm. His body of research led to early conclusions that individuals of all ages were positively stimulated by the presence of others. He also noted that there were significant individual differences in how children react to competitive circumstances, noting that 25 percent of his child sample had poor performance in the competitive situations and occasionally "went to pieces" at crucial times in the race (Wiggins, 1984). Triplett's work

provides an excellent early example of translational research whereby observations in the field are then reexamined under well-controlled laboratory conditions.

As we move ahead in time and across the Atlantic, there was great interest in the use of psychological principles and techniques in the development of peak performance. In 1921 a landmark book by Schulte in German focused on the psychological preparation of the elite athlete (*Increasing Performance and Exercises, Games, and Sport Activities*). Within the United States, Coleman Roberts Griffith, widely viewed as the founder of sports psychology, established the first laboratory for sports psychology research at the University of Illinois in 1925. Griffith focused on investigations related to athletes' reaction times and flexibility. He wrote two classic texts: *Psychology of Coaching* (1926) and *Psychology of Athletics* (1928). Griffith taught a course in sports psychology at the University of Illinois and helped to supervise graduate student research. Historical records indicate that he corresponded with legendary Notre Dame football coach Knute Rockne about psychological and motivational aspects of coaching and athletics. Griffith also served as team psychologist and researcher for the Chicago Cubs baseball team. Mahoney described an interesting story about Griffith: Griffith interviewed Harold E. ("Red") Grange, who scored four touchdowns in the first 12 minutes of the 1924 Illinois-Michigan football game. Two of his runs were returns of 95 and 67 yards. He was taken out of the game after his fourth touchdown, which Mahoney speculates may have been out of kindness to the Michigan team. Grange returned to the game in the fourth quarter, during which he ran for a fifth touchdown and passed 18 yards for a sixth. When Griffith interviewed Grange, he had no recall of any of his runs. He simply could not remember or describe any of his truly memorable plays. Grange's lack of memory for these events led Griffith to write about "automatic skill response." According to Mahoney, Griffith's observations regarding the automatic skills response laid the foundation for what has later been referred to as, "hot streak, groove, flow," or "sweet spot in time" (p. 103).

In the 1930s, Clarence Ragsdale at the University of Wisconsin became interested in motor learning. It has been observed that Ragsdale's textbook *The Psychology of Motor Learning* was the first textbook of its type in the United States. In his historical review, Wiggins (1984) indicates that other than the work of Ragsdale and investigations by Charles McCoy and his students at the University of Iowa, who were interested in the character and personality of athletes, and

the work of Walter Miles from Stanford on reaction time among football players, very little empirical research surfaced in the U.S. literature relating to either motor learning or to sports psychology more generally prior to World War II.

Similarly, it appears that little research in this area occurred following Griffith's work and up until the 1960s, except for a book written by John Lawther in 1951 titled *Psychology of Coaching*. Lawther, at the University of Pennsylvania, provided coaches with particularly interesting observations on motivation, team cohesion, personality, feelings and emotions, and handling athletes. This book has been credited with starting the separation between studies in motor learning and sports psychology. During this time period there also appeared articles that examined the emotional reactions of football players versus wrestlers, and the study of stress during sport. After World War II, sports psychology began to flourish in the Soviet Union and Germany. In Japan in 1952, Mitsuo Matsui wrote *The Psychology of Physical Education* and helped establish sports psychology into the Japanese physical education curriculum (Wiggins, 1984).

Following World War II, the emphasis in the United States continued to be on motor learning. Motor learning laboratories were established at the University of California at Berkeley and at Indiana University, which awarded a PhD in physical education. In 1966, Ogilvie and Tutko published a volume entitled *Problem Athletes and How to Handle Them*, which came to the attention of many coaches because of their insights into athlete motivation. This text was an interesting collaboration between an American and a Czech that brought to Americans an understanding of applied clinical psychology as it was practiced in Eastern Europe with athletes and teams (Wiggins, 1984). Ogilvie has since been described as the founder of *applied* sports psychology in the United States.

Two important historical markers in the formal development of sports psychology occurred in the 1960s. The first congress of the International Society of Sports Psychology (ISSP) was held in Rome in 1965, attended by more than 400 participants who represented 27 countries (Williams & Straub, 2006). Under the leadership of Dr. Ferruccio Antonelli, an Italian, these meetings allowed scientists and practitioners to exchange views and research findings while understanding different cultural perspectives and their relation to sports psychology. In 1967, the Americans and Canadians joined forces to establish the North American Society for Psychology of Sports and Physical Activity (NASPSPA), which then hosted the

second meeting of the ISSP in Washington, DC (1968). In 1969, Robert Wilberg at the University of Alberta founded the Canadian Society for Psychomotor Learning and Sports Psychology. Concurrently, sports psychology was developing in Europe, where the European Federation of Sport Psychology was created in 1969. Additional organizational development was noted in the 1970s with the emergence of sports psychology within the American College of Sports Medicine (ACSM) and the Sport Psychology Academy within the American Association for Health, Recreation and Physical Education (AAHPERD) in 1975. An initial goal of this group was to create links between research and practical application. In 1985, the Association for the Advancement of Applied Sport Psychology was formed by John Silva, and in 1987, the American Psychological Association officially recognized the Sports Psychology division, Division 47. Sports psychology organizations also proliferated throughout the world. For example, in the late 1960s, societies existed in Brazil, Czechoslovakia, the German Democratic Republic, France, Spain, England, the Scandinavian countries, and most of the countries of Eastern Europe, including Bulgaria, Romania, Hungary, and Poland (Wiggins, 1984).

The 1970s brought about significant interest and excitement in the area of sports psychology research. Sports psychology began to emerge as a science that relied on a programmatic and systemic body of research. Mahoney (1989) observed that sports psychology was being recognized in the mainstream media. After the 1976 Montréal Olympics, Mark Spitz stated in an interview that at the Olympic level of competition, physical skill differences were minimal relative to the importance of mental factors. Also adding fuel to the fire was a rumor that the Soviets employed more than 90 sports psychologists to help prepare their teams for the Montréal Olympics (Mahoney, 1989). During the 1984 Los Angeles Olympics, the American Broadcasting Company (ABC) showed a series of experts on the topic of sports psychology throughout its television coverage.

In 1978, the U.S. Olympic Committee (USOC) recruited expert advisors in four branches of sports science: biomechanics, exercise physiology, nutrition, and sports psychology. In 1983, the USOC established an official Sport Psychology Committee and a registry of qualified sport psychologists. The registry contained the names of individuals who were subjected to intensive review of their training and experience in the recognized three nonexclusive categories of sports psychologists: research, educational, and clinical (Mahoney, 1989). Research sports psychologists are primarily involved with testing

theories and various conceptual models that explain or predict particular sport behaviors. Educational sports psychologists are typically involved in disseminating sports psychology knowledge. Clinical sports psychologists assist athletes who are experiencing psychological difficulties such as depression, anxiety, substance abuse, difficulties with interpersonal relationships, and situational life stress.

The 1980s were credited with the development of better documentation of the effectiveness of psychological interventions in performance enhancement. Similarly, increased attention was given to exercise and health psychology with a focus on issues such as exercise training, enhancing exercise programs, exercise addiction, injury response, rehabilitation, and the relationship between exercise and stress.

Paralleling the development of organized sports psychology was also the emergence of research journals that published the various investigational works of sports psychologists. At the start of the 1970s, there were two primary journals in sports psychology: The *International Journal of Sport Psychology*, which was first published in 1970, and the *Journal of Sports Psychology*, published in 1979. At about the same time, the *Canadian Journal of Applied Sport Sciences* emerged. In 1988, the title was changed to the *Journal of Sports and Exercise Psychology*. In 1987, the *Sport Psychologist* was published, and the *Journal of Applied Sport Psychology* appeared in 1989.

From 1990 until the present, there has been tremendous growth in the area of sports psychology, both in terms of its knowledge base and organizational structure, but also in further developing professional credentials in the field. In addition to traditional quantitative approaches that examined the effectiveness of interventions in performance enhancement, there has emerged a significant body of literature that relies on qualitative approaches to understanding sports psychology phenomena (Williams & Straub, 2006). Also of significance is the distinction between academic sports psychology and applied sports psychology. Academic sports psychology continues to be focused on the production of knowledge and research paradigms, whereas applied sports psychology seeks to apply the knowledge that has been developed in the clinical or real-life situation. This distinction led to the development of the Association for the Advancement of Applied Sports Psychology (AAASP), and the *Journal of Applied Sport Psychology* became the official publication of the AAASP with its inaugural publication in March 1989 (Cox, Qiu, & Liu, 1993).

Any overview of the historical foundations of sports psychology would not be complete without recognizing the schism that occurred in the field between “psychology” and “exercise science” and between the scientists and the applied practitioners. These divides are not new to psychology, or science more generally. There has always been friction between “basic” scientists and the applied fields. This has been notable within psychology, most obviously in the areas of clinical psychology and industrial-organizational psychology. Even within disciplines, these divides are often apparent. For example, clinical neuropsychology continues to struggle with the relationships among its basic scientists and academics on one hand, and the more applied clinical practitioners on the other. Within APA, there was a schism between the “academics and scientists” and the practitioners, in part leading to the creation of the American Psychological Society.

Wiggins (1984) described the tension that has existed between those with backgrounds in physical education with little experience in psychology, and those with certification in clinical psychology who have entered the field with little or no background in sports psychology research. “Psychologists on the other hand, point out that the physical educators working in the field are not really psychologists at all. Thus, these psychologists say, physical educators may be able to talk *about* athletes and psychology, but they should not talk *to* athletes about their own psyches!” (p. 23). Feltz and Kontos have argued that the distinction between sports psychology as a subdiscipline of psychology or a subdiscipline of exercise science is not trivial. Their view is that the choice of the parent discipline has important implications for the direction of the field. They provide the following examples: As a subdiscipline of psychology, sports psychology will likely focus on understanding psychological theories and applying psychological principles. As a subdiscipline of sport and exercise science, sports psychology’s focus would be on “trying to describe, explain, and predict behavior in sports contexts” (p. 4).

In response to the many professional and ethical issues in the field, AAASP developed a model curriculum in 1991 for certification by AAASP for individuals who provide performance enhancement services. The criteria include a doctoral degree that encompasses knowledge from the disciplines of psychology and kinesiology, the equivalent of 3 courses in sports psychology, training in professional ethics and standards, and supervised practica with a qualified individual. In 1994, the supervision criteria was made more stringent, requiring 400 hours; and in 2002, a process for certifying individuals with a master’s degree was set forth. Certification and licensing of