
ORIGINAL RESEARCH

SHOULDER PAIN IN COMPETITIVE TEENAGE SWIMMERS AND IT'S PREVENTION: A RETROSPECTIVE EPIDEMIOLOGICAL CROSS SECTIONAL STUDY OF PREVALENCE

Monica Tessaro¹
Giorgio Granzotto²
Antonio Poser³
Giuseppe Plebani⁴
Alex Rossi⁵

ABSTRACT

Background: The term “swimmer's shoulder” was first introduced in 1974 by Kennedy and Hawkins to describe a common condition among competitive swimmers characterized by pain and dysfunction of the shoulder complex. Currently, the term does not define a specific clinical diagnosis and its etiology is considered to be multifactorial. In the literature shoulder pain prevalence varies according to the adopted definitions (from 3% to 91%); however, in the Italian environment there is no prevalence study regarding swimmer shoulder. Prevention by means of dry land activities may assist in delimiting shoulder pain in swimmers.

Purposes: The purpose of this study was to investigate the prevalence of swimmer's shoulder over the prior 12 months among teenage athletes and the preventive activities carried out across different sport's teams. A second purpose was to determine whether the extent of the condition is affected by dry land preventive activity. And finally, to compare different preventive activities related to the prevalence of swimmer's shoulder.

Study design: Retrospective epidemiological cross-sectional study of prevalence

Methods: Athletes from four levels of training: Esordienti A, Ragazzi, Juniores and Cadetti (according to Italian Swimming Federation F.I.N.'s partition age) belonging to eight Italian swimming teams and their respective coaches were involved in this study. Two types of questionnaires were created and completed by both the athletes and their coaches during May 2015. The collected data were analyzed by means of descriptive and inferential statistics.

Results: Shoulder pain prevalence over the previous 12 months from the completion of the survey was 51%. In six out of eight of the societies a specific shoulder dry land warm-up was carried out before water training, whereas among seven out of eight societies also utilized weekly sessions of performance (physical) training. Statistically significant differences were noticed between shoulder pain and gender, weekly frequency and duration of dry land warm-up and duration of physical training.

Conclusion: The results of the current study indicate that shoulder pain is prevalent in youth swimmers (51%) and appears to be affected by dry land preventive activities. A weekly frequency of dry land warm-up more than five times appeared to protect swimmers from pain ($p=0.044$); whereas, a dry land warm-up duration greater than 10 minutes seems to cause shoulder pain ($p=0.043$). A single physical training duration lower than 45 minutes seems to be associated with pain ($p=0.035$).

Levels of evidence: 3a

Key words: Dry land warm-up, prevention, shoulder pain, swimmer's shoulder

CORRESPONDING AUTHOR

Monica Tessaro
Valdo Salute, Valdobbiadene, Treviso, Italy,
+ 393496692858
E-mail: monicatessaro93@gmail.com

¹ Valdobbiadene, Treviso, Italy
² ULSS 2 Marca Tevigiana, Treviso, Italy
³ University of Padua, Padua, Italy
⁴ University of Siena, Siena, Italy
⁵ University of Rome “Tor Vergata”, Rome, Italy