LOW BACK PAIN ON ELITE VOLLEYBALL PLAYERS – Identification of biomorphological risk factors

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LOW BACK PAIN

- An important and common health problem of the so called industrialized society
  - Main cause of incapacity and absenteeism from work;
  - Repercussions: Social,
    Pshicological,
    Economical;
  - Volleyball- high risk
    incidence
    prevalence

(Aagaard, 1996; Ferreti et al, 1992; Silva, 2001)
LOW BACK PAIN ON VOLLEYBALL

LOW BACK PAIN
Athletes

=\n
LOW BACK PAIN
Adult Population

Similar condition and consequences

(Micheli et al, 1995)

INTIMATELY CONNECTED to:

- morphological characteristics,
- technical gesture,
- age,
- other pathologies.

(Gal, 2001)
LOW BACK PAIN ON VOLLEYBALL

- Severity and extension of these complaints determine the athlete’s competitive capacity

(Sousa, 2003)
Federated Volleyball Athletes;
More than 12 years old;
All Registered Teams on Madeira Volleyball Association - Autonomous Region of Madeira

Competed - 2005
Regional
District
Championships
National

- 2 Weekly Trainings / 2 Hours Each
SAMPLE

- Questionnaire - 301 Athletes
  - 185 Female
  - 116 Male
  - 249 Without LBP
  - 52 With LBP

- Questionnaire + Battery of Tests - 124 Athletes
  - 83 Female
  - 41 Male
  - 83 Without LBP
  - 41 With LBP

- Age
  - Average - 17.49 Years
  - Standard Deviation – 5.83
INSTRUMENTS

- Self Answer Questionnaire adapted to Volleyball and LBP

- 2 Anthropometric Cases:
  - 2 Anthropometers
  - 2 Large Sliding Calipers
  - 2 Skinfold Calipers
  - 2 Anthropometric Tapes
INSTRUMENTS

- 1 Stadiometer
- 1 Sitting Height Table
- 2 Skinfold Calipers
- 1 Acrylic Base
- 2 Make-Up Pencils
- 1 Weighting Scale
- 1 Chair
- 1 Matrisse
PROCEDURES

- Pre-test – Questionnaire;
- Questionnaire distributed during a training session to all present athletes;
- Answer Rate – 100%
DATA TREATMENT

- Descriptive and Exploratory Statistics;
- Multivariate Logistics Analysis;
- Level of Significance: $p \leq 0.05$;

Data Treatment Instrument: S.P.S.S.

14.0 for Windows.
RESULTS – Questionnaire

LBP 2005 Prevalence

- 17.3% (+++ 18 years)

Causes:

- Indirect Trauma – 55.8%
- Overload/ Overuse - 34.6%

Occurrences:

- During training sessions – 88.5%
- During Competition - 11.5%
RESULTS - Questionnaire

- Technical Gesture:
  - Spike - 53.8%
  - Serve - 28.8%

- LBP Condition:
  - Without Complaints: 46.2%
  - With Complaints: 46.2%
    - Spontaneous Resolution
    - Didn’t STOP Training
RESULTS
Questionnaire / Anthropometric Measures (AM)

Anthropometric Data:

- Male sample presented higher average values
  - Weight
  - Stature
  - BMI
RESULTS

Questionnaire / Anthropometric Measures (AM)

Multivariate Logistics Analysis:

Age + Female Gender + AM $\leftrightarrow$ LBP

- Abdominal Skinfold – Risk $\cdot$ 1.2/ mm fold
- Age – Risk $\cdot$ 1.3/ year

Age + Male Gender + AM $\leftrightarrow$ LBP

- Age – Risk $\cdot$ 1.4/ year
RESULTS

Questionnaire / Anthropometric Measures (AM)

Age Range 15/16 + Gender + AM [ ] LBP
Bicipital Skinfold – Risk · 1.6/ mm fold

Age Range ≥18 + Gender + AM [ ] LBP
Age – Risk · 1.2/ year
DISCUSSION
Anthropometric Characteristics

• Risk Factors

AGE

Silva, 2001
Chard, 1987
Lund, 1985

Oliveira, 1998
Lindner, 1996
Burton, 1996

Grimmer, 2000
Salminen, 1999
Kujala, 1992
DISCUSSION
Anthropometric Characteristics

• Risk Factors

ABDOMINAL SKINFOLD

Hen, 1997
Lean, 1998
Toda, 2000
Hicks, 2005

BICIPITAL SKINFOLD

No specific literature support
Thank you!