# Relationship between shoulder pain assements and wheelchair basketball performance

Ignacio Polo, Javier Pérez-Tejero, Saleky García-Gómez Phd

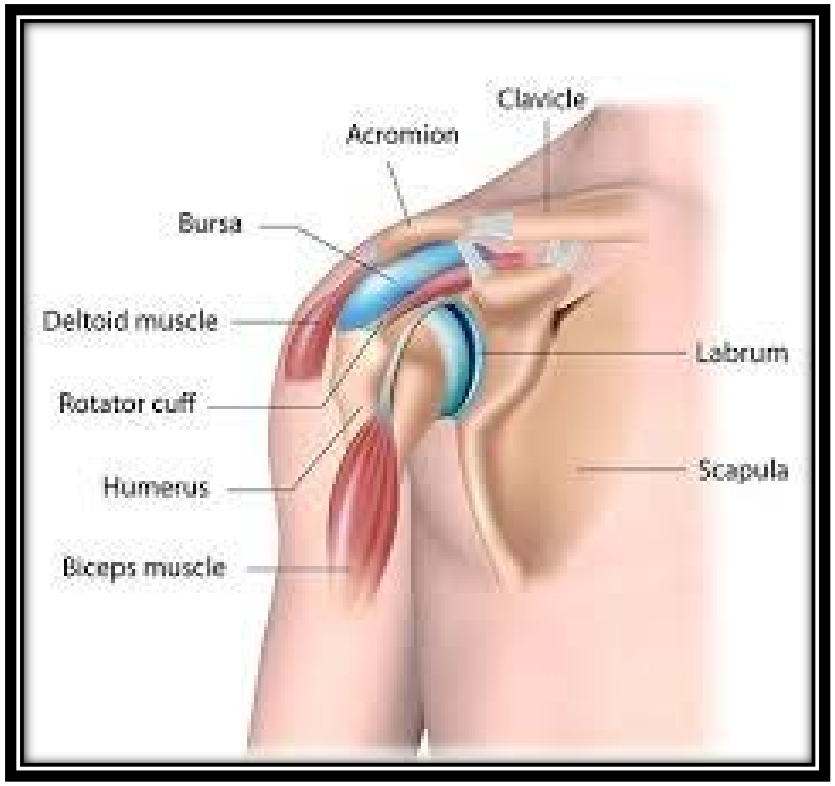
"Sanitas Foundation" Chair in Inclusive Sport Studies, Faculty of Physical Activity and Sport Sciences . Technical University of Madrid. Spain

VISTA 2019. Amsterdam 4th Septembter 2019

# 1. Introduction (1/3)

- **Wheelchair Basketball (WB) players:** spinal cord injury (SCI), congenital deformities, post – polio síndrome, lower limb amputation and orthopedics deformities

- Not all players who participate in WB use a wheelchair for activities of daily living (Pérez-Tejero & Castellanos; 2009)




**Shoulder Pain (SP)**

Age and SP
WB propulsion technique = Range of Motion (ROM)
ROM = presence or absence of injure

# 1. Introduction (2/3)

- **Shoulder Pain Index in Wheelchair Basketball player (SPI-WB)**

1. **Demographic data**
2. **Transfers**
3. **Pain related ADLs**, distinguishing between wheelchair users and all participants
4. **SP perception** when performing sport skills (SS): shooting, pushing, rebounding or one-handed long pass, and other game situations

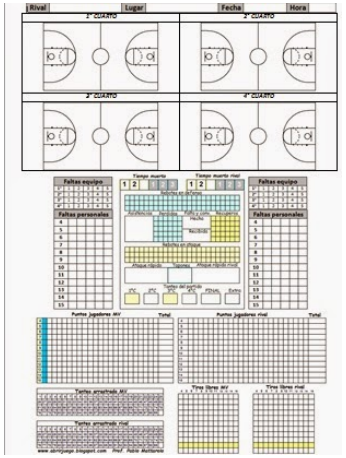



García-Gómez & Pérez-Tejero, 2017

# 1. Introduction (2/3)

- **WB Performance trough game-related statistics (GRS)**

1. **Functional class** (Pérez-Tejero & Pinilla, 2015; Vanlandewijck, Verellen, y Tweedy, 2011)
2. **Winning and losing teams** (Gómez, Pérez, Molik, Szyman, y Sampaio; 2014)



# 1. Introduction (3/3)

## Objective

*To analyze the relationship between shoulder pain assements and wheelchair basketball performance trough game-related statistics*

# 2. Method

**WB PLAYERS**

- 12 WB players from the elite Spanish selection male
- Age between 18 to 42 years (29.9±7.05)

- **Shoulder Pain Index for Wheelchair Basketball (SPI-WB)** (Curtis et al; 1995 and García-Gómez et al., 2019)
- **4 items** related to SP perception when performing specific **WB skills**: shooting, pushing, rebounding or one-handed long pass during game situation

- **Performance through GRS:** total shoots, offensive and defensive rebounds, total rebounds, assists, blocks and total points
- European Championships (Fránkcfort, Germany): 8 games
- Variables were relativized per 40 minutes

- **Sperman test:** correlations between SP and GRS
- **r-value (effect size):** (r> 0.1=small, r > 0.3 = medium and r > 0.5 = large) (Hopkins, 2002)
- PASW statistics 20 (SPSS Inc., Chicago, IL, USA).
- P<0.05

# 3. Results

Total shoots ($r = -0.619$, $p < 0.05$)

Assists ($r = -0.684$, $p < 0.05$)

Total points per players during the game ($r = -0.582$, $p < 0.05$)

Total shoots ($r = -0.760$, $p < 0.05$)

Total points per players during the game ($r = -0.760$, $p < 0.05$)

More SP = less performance

# 5. Discussion and practical implications

- Similar with previous studies, these results shows how SP could have a negative relationship with WB sport skill (García-Gómez & Pérez-Tejero, 2017), specifically WB performance

- How an adequate strategy to screen shoulder condition could have a correlation with the WB performance (Dutton, 2019)

- According to this results and other studies (García-Gómez and Pérez-Tejero, 2016; Wessels et al., 2013) the correlation between SP and joint mobility could affect WB skills performance.

- Preventive shoulder health programs must be implemented along preparation period together with specific strength trainng (García-Gómez et al., 2019)

# 5. Conclusion

- The findings of this study provide a first step of the relationship between shoulder pain and WB performance.

- Gender issues and more sample are needed in the future to address this topic, and also to guide training advice.

# Thank you for your attention

## Relationship between shoulder pain assements and wheelchair basketball performance

**Ignacio Polo, Javier Pérez-Tejero and Saleky García-Gómez**

***Email: inves1.cedi.inef@upm.es***
***Email: j.perez@upm.es***

***www.deporteinclusivo.com***

CEDI
Cátedra Fundación Sanitas de Estudios sobre Deporte Inclusivo
Fundación Sanitas

VISTA CONFERENCE