# Designing the DHAQ:

## Construction and Validation of the Developmental History of Athletes Questionnaire

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# Introduction

- Understanding the factors that underpin expert performance is integral to the fields of motor learning and sport psychology

- Much is known about the performance characteristics that distinguish elite athletes from lesser skilled participants

- Less is known about developmental pathways toward expertise in sport

# Background

- Existing knowledge on the development of expertise

  - The 10-year rule (Simon & Chase, 1973)

  - Development of talent across the lifespan (Bloom, 1985)

  - Theory of deliberate practice (Ericsson, Krampe, & Tesch-Römer, 1993)

  - Developmental model of sport participation (Côté, 1999)

  - Early diversification (Baker, Côté, & Abernethy, 2003)

  - Early engagement hypothesis (Ford, Ward, Hodges, & Williams, 2009)

# Background

- Limitations of existing research

  – Qualitative research designs

  – Small sample sizes

  – Homogenous populations

  – Poorly validated questionnaires

  – Different measurement tools

  – Conflicting findings

# Research Question

- What are the practical recommendations relating to the development of sport expertise that are generalisable across sports, and across countries?

# Aim

- To examine the generality of existing models for the development of sport expertise across a variety of sports, in a number of countries, via a large-scale quantitative analysis

# Experiment 1 - Aim

- To construct a valid, reliable measurement tool for collecting quantitative data pertaining to athlete developmental histories

# The Developmental History of Athletes Questionnaire

# DHAQ

# Designing the DHAQ

- Questionnaire based upon interview guides, results, and recommendations from previous studies

- Covers demographics and detailed training history information from 4 years of age until present

- ~ 1 hour completion time

# Designing the DHAQ

- Demographics
  - Date of birth
  - Place of birth and places of residence

- Family
  - Size and composition
  - Family participation in sport and physical activity

- Participation in organised sports and playful sporting games
  - Number and type of activities
  - Time spent in activities

# Designing the DHAQ

- **Training and competition history for main sport**
  - Time spent in practice
    - Sessions per week / Hours per week / Months per year
  - Type of practice
    - Sport specific, physical conditioning, video analysis etc.
  - Nature of practice
    - Supervised group, supervised individual, unsupervised etc.
  - Competition involvement
    - Number, frequency, type, level, success

# Designing the DHAQ

- **Performance milestones**
  - Progression through levels of competition
    - Age of first representation, age of first medal etc.

- **Coaching history**
  - Number and duration

- **Sport science / Sport medicine support**
  - Access to and utilisation of services

- **Injury history**
  - Number of injuries and illnesses
  - Duration of time off training or on reduced training load

# Participants

- 15 Australian national level athletes

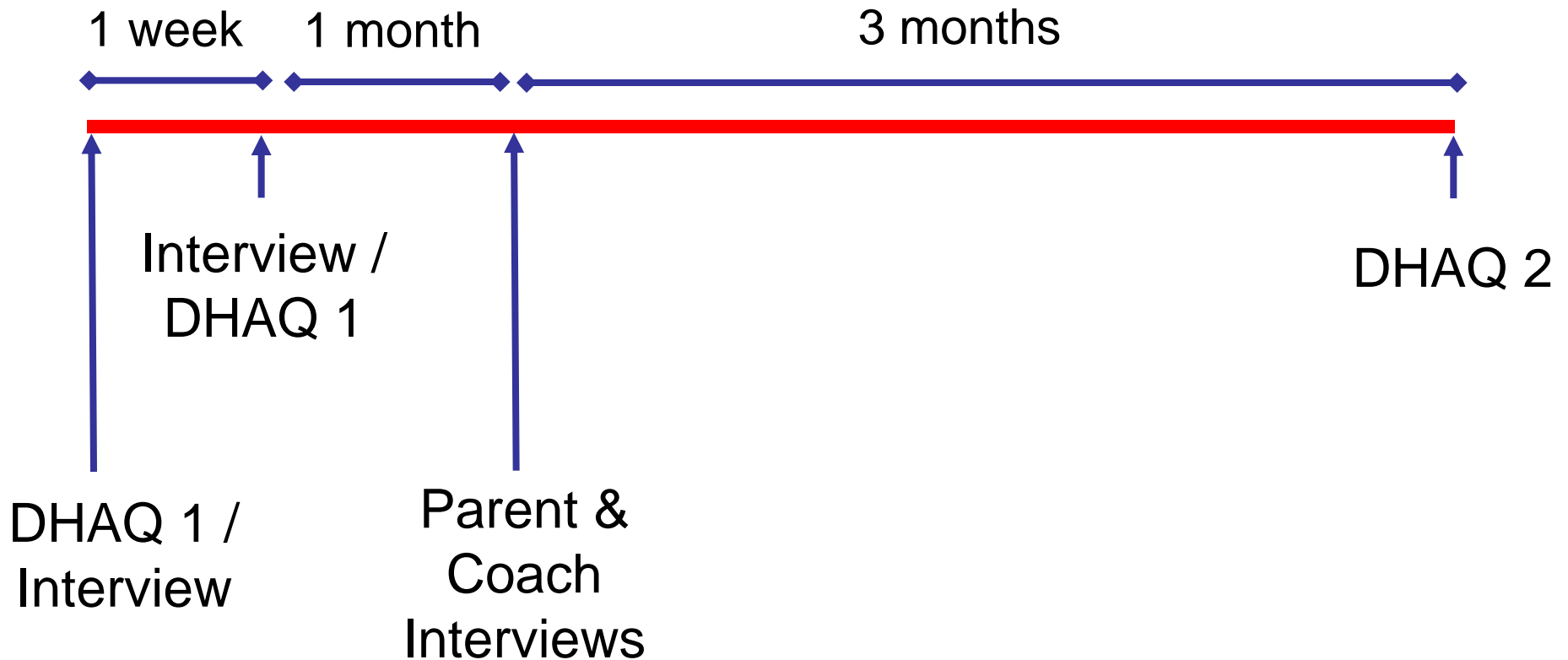

8 Field hockey
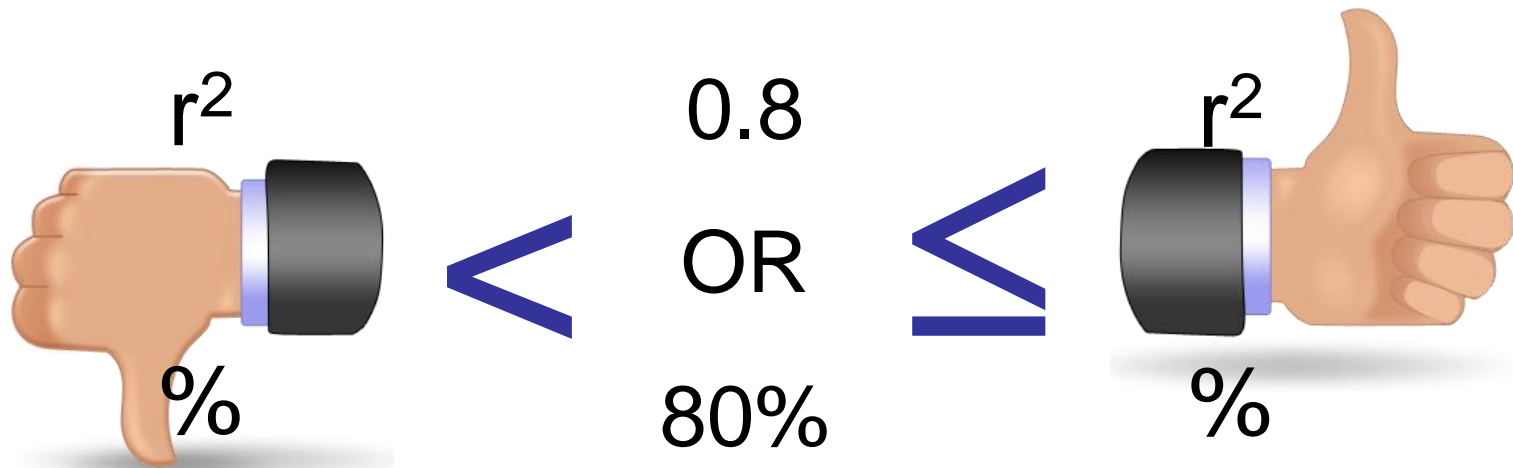
4 Male        4 Female



7 Swimming

4 Male        3 Female

# Methods

1 week     1 month              3 months

Interview /
DHAQ 1

DHAQ 2

DHAQ 1 /
Interview

Parent &
Coach
Interviews

# Analysis

- All measures, across all test occasions
  - Intra-class correlations
  - Percent agreement

$r^2$       0.8       $r^2$

$<$      OR      $\leq$

%       80%       %

# Future Work

- Complete analyses

- Update DHAQ

- Convert DHAQ from pen/paper to online

- Conduct large-scale analysis

# Thank You!

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# Questions?