Dance talent in young people: A unique approach to interdisciplinary research and pedagogy in dance training

Relationships between injury, perfectionism and anxiety

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Outline

• Introduction to dance science
• The CAT Talent Project
• Methods
• Findings
• Recommendations
• Questions
What is dance science?

*IA DMS enhances the health, well-being, training, and performance of dancers by cultivating educational, medical, and scientific excellence.*

International Association of Dance Medicine and Science Mission Statement, 2008
What is dance science?

Examples of studies:

- Relationships between muscular strength and injury incidence
- Performance anxiety experiences of professional dancers
Why research talent?

• Recent research indicates that by taking a **systematic**, **scientific** approach we might better understand
  – What talent is
  – How it is best developed

• Talent models & research common in sport and some in music: e.g. increased
  – Recognition of the role of **psychological** and **social** factors in addition to traditionally emphasised **physiological** factors
  – Emphasis on the role of specific forms of **practice** over innate talent
Talent in dance

• Dance: talent is much talked about & sought after, but definitions of *what* & *how important* it is are
  – Varied
  – Lacking in research / systematic evidence

– Traditional dance talent ID based on:
  • **Technical** skill
  • **Physical** characteristics (limb lengths, slenderness) & control
  • Other **dance-specific** criteria: artistic/creative

– Sanders’ *Gifted and Talented Dancers: A Resource Booklet for Teachers* deals largely with 2 factors:
  • **Psycho-behavioural** characteristics
  • **Dance-specific** criteria: artistic/creative
Introduction & Background

Overall aims:
• Profile & screen CAT dancers over 3 years
  – What are they like?
  – How do they develop?
• Interdisciplinary for a holistic view:
Aims

• Track CAT dancers twice per year for 3 years, examining which factors in their
  – Background, training
  – Physicality
  – Psychology

• Are related to
  – Well-being (injury, health)
  – Performance outcomes
  – Adherence/dropout

... so that eventually, we may better understand how to best develop talent in young dancers
Dancer characteristics

• Initial set of data collected November 2008 – February 2009

• 347 CAT students took part from 8 centres
  – Average age: 14.4 ± 2.
  – Average years in dance: 8.1 ± 3.8
  – 75% female, 25% male
  – Mixed ethnicities; 75% White British
  – Average hours CAT training: 7.9 hrs per week
Current research study

- Is injury incidence related to perfectionism and anxiety in young dancers?

- Relationships not been previously studied in combination nor with such a large sample size

- Interdisciplinary inquiry valuable to shed light on new relationships
Injury

• High prevalence of injury in dance
• 80% of pre- and professional dancers in the UK suffer from at least one injury per year
  (Brinson & Dick, 1996; Laws, 2005; Noh & Morris, 2004)

• Perceived causes of injury:
  – Overtraining
  – Faulty technique
  – Repetition
  – Demanding choreography
  – Fatigue
  (Laws, 2005)

• Adolescent dancers may be particularly vulnerable to injury
  (Garrick, 1999)
Injury

• Previous research has shown relationships between injury and psychological variables:
  – **Perfectionism** (Hamilton, 1998; Krasnow, Mainwaring & Kerr, 1999)
  – **Stress** (Udry & Andersen, 2008; Williams & Andersen, 1988)
  – **Coping skills** (Noh & Morris, 2004)
  – **Anxiety** (Smith, Ptacek & Patterson, 2000)

• Injured dancers may feel under pressure to continue dancing when injured (Hamilton, 1998)
Perfectionism

• Dancers are said to have perfectionist tendencies (Cumming & Duda, 2005; Neumärker et al., 2000; Robson, 1991)

• Recent research suggests two types of perfectionism:

<table>
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<tr>
<th>Conscientious Perfectionism</th>
<th>Self-Evaluative Perfectionism</th>
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<td>• Striving for excellence</td>
<td>• Concern over mistakes</td>
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<tr>
<td>• Planfulness</td>
<td>• Rumination</td>
</tr>
<tr>
<td>• High standards for others</td>
<td>• Need for approval</td>
</tr>
<tr>
<td>• Organisation</td>
<td>• Perceived parental pressure</td>
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(Hill et al., 2004)
Anxiety

• Anxiety common in performing arts (e.g. Hays, 2002)

• Dancers’ anxiety experiences far from fully understood

• Anxiety may predispose dancers to injury (Smith, Ptacek & Patterson, 2000)
Measures

Injury
Questionnaire asking:
• Number of injuries in previous 12 months – retrospective self-report (based on Laws, 2005)
• Currently injured (yes/no)

Anxiety
Sport Anxiety Scale-2 (SAS-2: Smith, Smoll, Cumming & Grossbard, 2006)
  – Worry
  – Somatic anxiety
  – Concentration disruption
    • During class

Perfectionism
Perfectionism Inventory (Hill, Huelsman, Furr, Kibler, Vicente & Kennedy, 2004)
  – Conscientious
  – Self-Evaluative
Findings: averages

Injury

- Injured in past year: 55%
- Average no. of injuries in past 12 months: 1.1 ± 0.7
- Injured at time of testing: 23%

Perfectionism & Anxiety

- Average perfectionism scores:
  - Highest scores reported for Conscientious perfectionism
- Anxiety scores:
  - Highest scores reported for the Worry subscale
Analysis revealed a relationship between those injured in dance in past 12 months and self-evaluative perfectionism (p<0.05)
Currently injured dancers were significantly more anxious than non-injured dancers (p<0.05)
Findings: relationships

Anxiety & perfectionism

• Correlations found between anxiety and perfectionism subscales
  – Strongest correlation between Worry and Self-Evaluative Perfectionism \((r=.66, p<0.05)\)

• Supports previous findings that perfectionism can predict performance anxiety \((\text{Sharp & McLean, 1999})\)
Recommendations

• Dancers should be reminded that:
  – They should report early warning signs
  – Injuries should not be overlooked or ignored
  – They need to look after their instrument
  – Being injured need not affect their feelings about their dancing or ability
Recommendations

- Certain psychological atmospheres in dance classes (*motivational climates*) can reduce anxiety and perfectionism 
  
  (Carr & Wyon, 2003)

Dance classes should emphasise:

- Self-referenced learning
- Cooperation with other students
- Effort (rather than success)
- Mistakes as part of learning process
Recommendations

Classes could include

- Goal-setting (SMART)
- Coping skills (e.g. positive self-talk)
- Building social support networks (peers, teachers)
- Information about injuries
- Physical fitness work

Teachers can

- Provide support and exercises for injured students going through rehabilitation
- Be role models

Hardy et al., 1996; Hamilton, 2008; Hays, 2000; McArdle et al., 2006
Summary

• Anxiety and perfectionism are related to injury incidence in dancers
  – Many other factors involved in injury occurrence

• Findings applicable to general dance pedagogy
  – Encourage striving for excellence, not for perfection
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Thank you for your attention!

Questions?

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References

References

• Sanders, L. Gifted and Talented Dancers: A Resource Booklet for Teachers. Commissioned by the Dance Network.
• Smith RE, Ptacek JT, Patterson E. Moderator effects of cognitive and somatic trait anxiety on the relation between life stress and physical injuries. Anxiety Stress Coping. 2000;13(3):269-288