



# Becoming an expert in sport: exploring the journey of Portuguese national team athletes



André Barreiros  
(abarreiros@fade.up.pt)



Becoming an expert in sport: exploring the journey of Portuguese national team athletes

OVERVIEW

Introduction

Study I - From early to adult sport success: analysing athletes' progression in national squads

Study II - A retrospective analysis of Portuguese elite athletes' involvement in international competitions

Study III - Training and psychosocial patterns during the early development of national team athletes

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Introduction

Inspired by their unique contribution the study of athletes with exceptional performances and achievements has been one of the major subjects in sport sciences



## Nature-nurture

## Introduction

During the 50s and 70s of the twentieth century, sport performances were viewed as a product of heritability

Concerns were on what was called as the TALENT DETECTION paradigm

By definition, talent detection refers to the search of potential individuals who are not involved in any sport program


Efforts were focused mostly on unidimensional approaches favoring exclusively biological determinants

Introduction

The last decades of the twentieth century would witnessed an important shift...

... TALENT DEVELOPMENT

Holistic perspective - interaction between genetic, contextual and personal factors, especially those related with the psychological and psychosocial domains



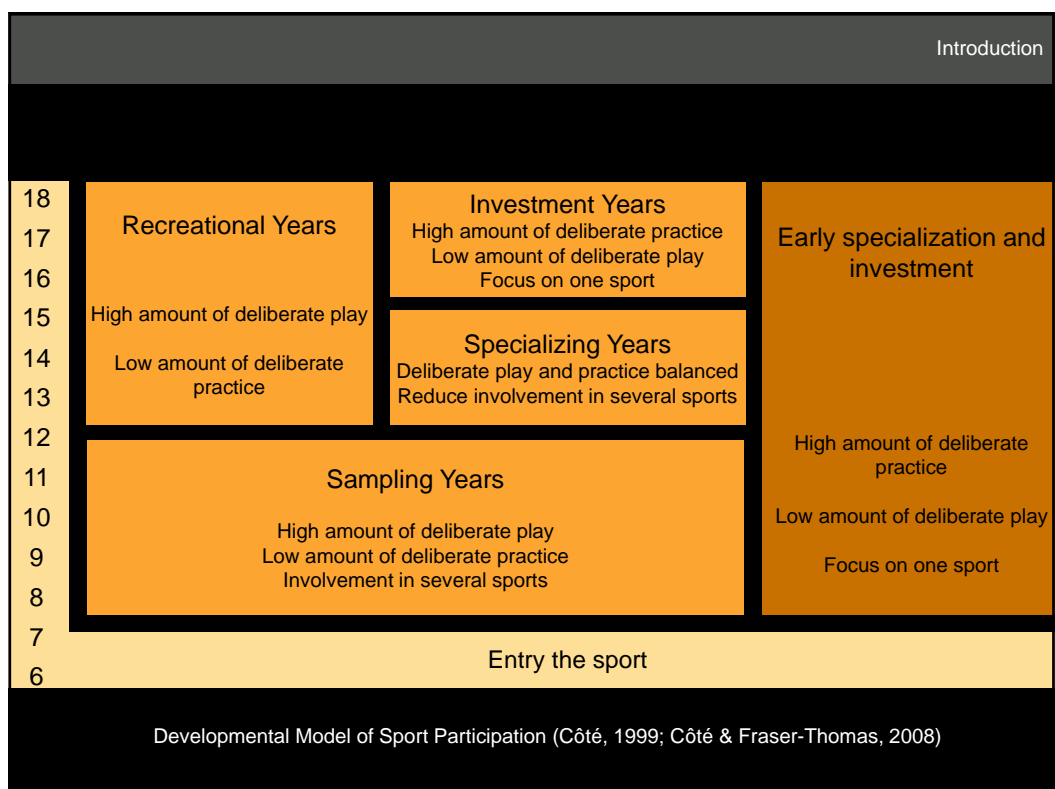
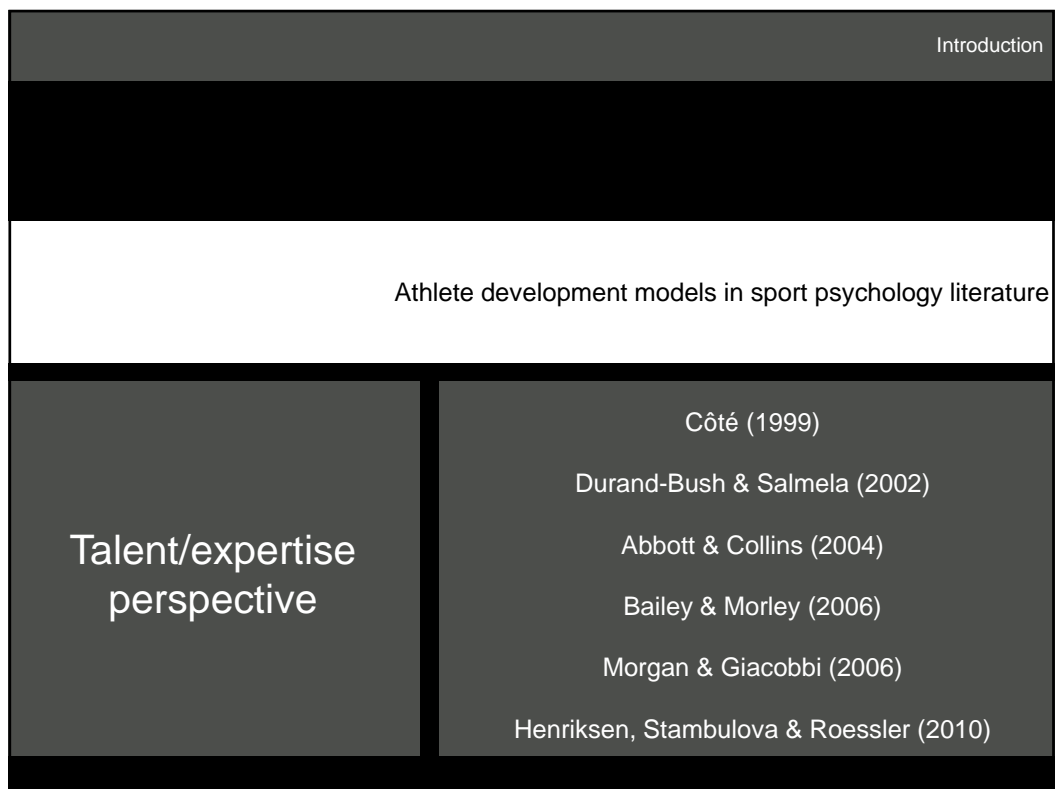
Introduction

Athlete development models in sport psychology literature

Career transitions perspective

Stambulova (1994)

Wylleman, Alfermann & Lavallee (2004)



## Introduction

Research have been focusing above all the characteristics and experiences of successful athletes

The study of the development of athletes that achieve the top of their sport do not full explain how and why others, with similar developmental experiences achieve different outcomes

Talented young athletes engaged in high-level competition who did not achieve an expert level in adulthood have received much less attention

## Introduction

# Research problem...

Understand differences in the development of athletes who achieved or not expertise and identify factors related with both outcomes

Study I - From early to adult sport success: analysing athletes' progression in national

# Purpose

How many international youth athletes achieved or not the same status as seniors?

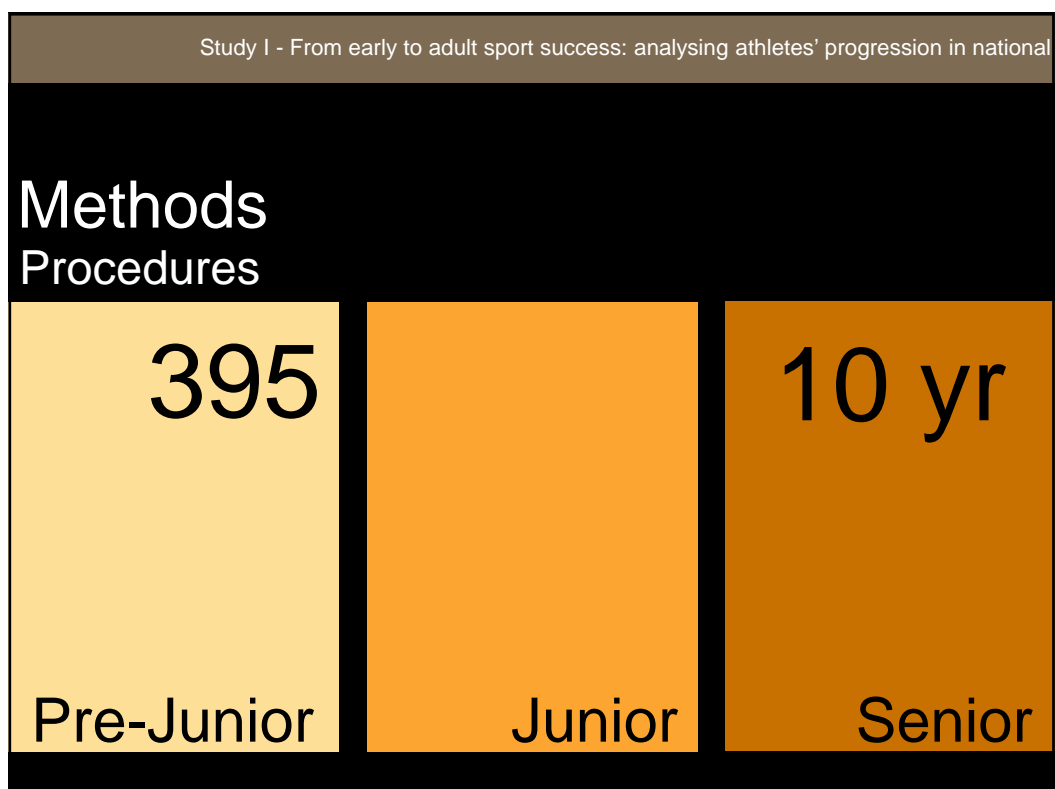
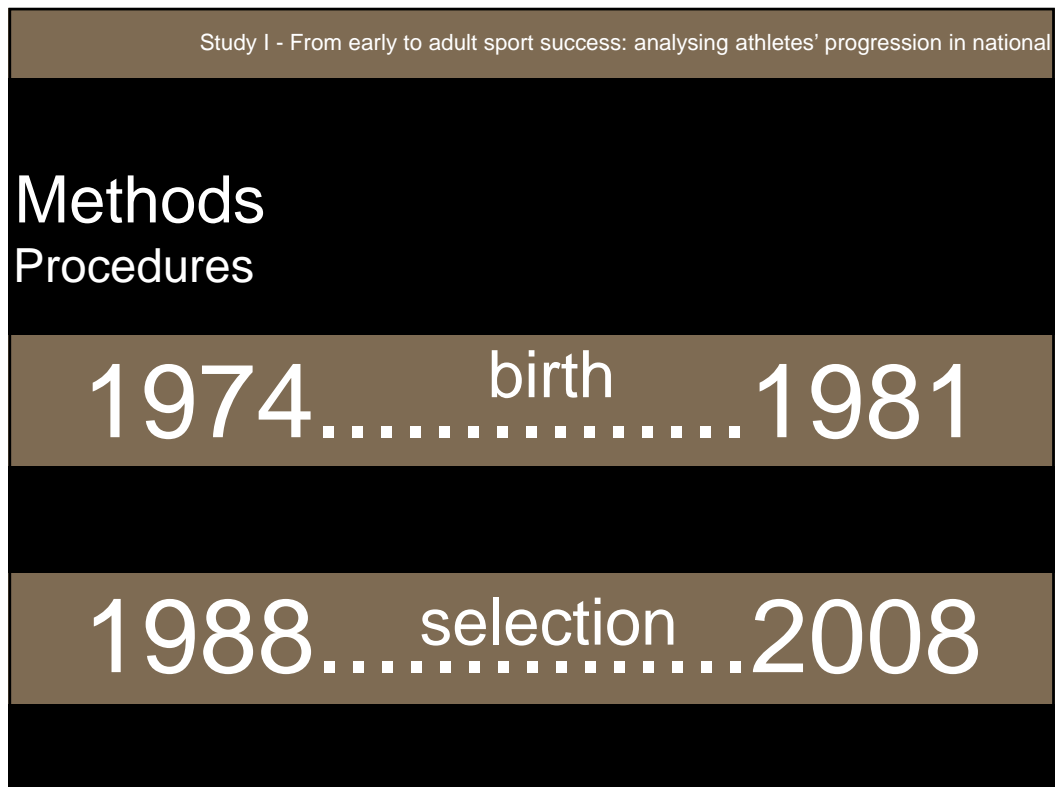
Study I - From early to adult sport success: analysing athletes' progression in national

# Methods

Sample .....395

Soccer (170 M) Volleyball (27 M | 27F) Swimming (60 M | 64 F) Judo (32M | 15 F)





Study I - From early to adult sport success: analysing athletes' progression in national

## Results

### Prospective analysis of male athletes

	n	%	n	%
soccer ( $\leq 16$ )	93	55	58	34
volleyball ( $\leq 16$ )	21	78	15	56
swimming ( $\leq 16$ )	34	57	18	30
judo ( $\leq 16$ )	12	47	9	28
<b>Total (n = 289)</b>	<b>160</b>	<b>55</b>	<b>100</b>	<b>35</b>
<b>Pre-Junior</b>	<b>Junior</b>		<b>Senior</b>	

Study I - From early to adult sport success: analysing athletes' progression in national

## Results

### Prospective analysis of female athletes

	n	%	n	%
volleyball ( $\leq 15$ )	15	56	6	22
swimming ( $\leq 14$ )	37	58	21	33
judo ( $\leq 16$ )	7	47	3	20
<b>Total (n = 106)</b>	<b>59</b>	<b>57</b>	<b>30</b>	<b>28</b>
<b>Pre-Junior</b>	<b>Junior</b>		<b>Senior</b>	



Study I - From early to adult sport success: analysing athletes' progression in national

## Conclusions

Most of top young athletes were also selected for junior teams, however...  
...only around a third of these early selected athletes reappeared  
among the top athletes at a senior level

Over the time several of the early selected athletes were replaced by  
other, previously non-selected athletes

Study I - From early to adult sport success: analysing athletes' progression in national

## Conclusions

Difficulties in predicting success based on  
early identification and selection

The contemporary trend of introducing young athletes sooner  
than ever to international competitions may not be so fundamental

Study II - A retrospective analysis of Portuguese elite athletes' involvement in international competitions

# Purpose

How many international senior athletes competed or not as international athletes during development?

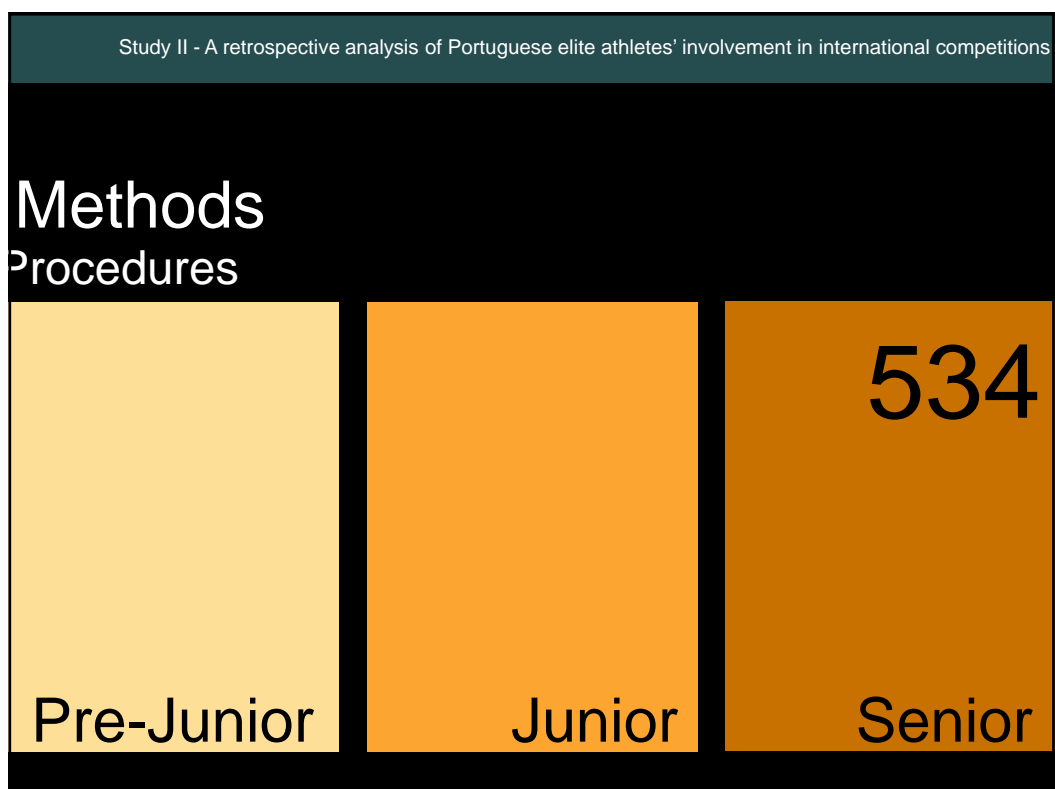
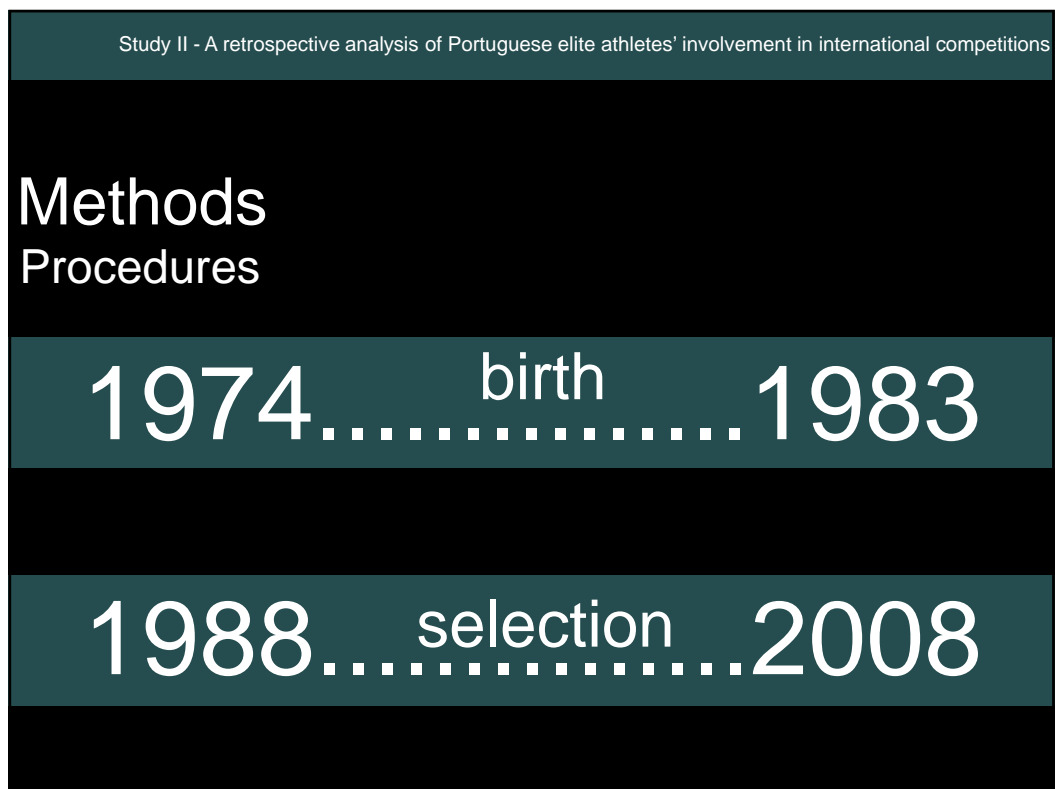
Study II - A retrospective analysis of Portuguese elite athletes' involvement in international competitions

# Methods

Sample .....534

Soccer (262 M)    Volleyball (45 M | 37F)    Swimming (54 M | 35 F)    Judo (75 M | 24 F)





Study II - A retrospective analysis of Portuguese elite athletes' involvement in international competitions								
International competition during youth								
Males	n	Age of debut	None		Pre-junior		Junior	
			n	%	n	%	n	%
<b>Soccer</b>	262	17.5 (3.5)	109	42	100	38	146	56
Major events	37	16.7 (3.5)	10	27	20	54	27	73
Minor events	225	17.6 (3.5)	99	44	80	36	119	53
<b>Volleyball</b>	45	18.4 (3.5)	10	22	19	42	34	76
Major events	20	17.8 (3.1)	3	15	10	50	16	80
Minor events	25	18.9 (3.8)	7	28	9	36	18	72
<b>Swimming</b>	54	16.0 (2.2)	7	13	28	52	46	85
Major events	23	15.1 (1.4)	-	-	17	74	23	100
Minor events	31	16.6 (2.5)	7	23	11	36	25	74
<b>Judo</b>	75	18.8 (2.8)	24	32	18	24	50	67
Major events	16	17.3 (1.8)	1	6	8	50	15	94
Minor events	59	19.2 (2.9)	23	39	10	17	35	59

Study II - A retrospective analysis of Portuguese elite athletes' involvement in international competitions								
International competition during youth								
Females	n	Age of debut	None		Pre-junior		Junior	
			n	%	n	%	n	%
<b>Volleyball</b>	37	18.4 (3.1)	16	43	11	30	21	57
Major events	-	-	-	-	-	-	-	-
Minor events	37	18.4 (3.1)	16	43	11	30	21	57
<b>Swimming</b>	35	14.4 (1.8)	3	9	23	66	30	86
Major events	10	13.7 (1.1)	-	-	8	80	10	100
Minor events	25	14.6 (2.0)	3	12	15	60	20	80
<b>Judo</b>	24	18.4 (3.3)	6	25	10	42	18	75
Major events	7	16.7 (1.1)	-	-	4	57	7	100
Minor events	17	19.1 (3.7)	6	35	6	35	11	65

Study II - A retrospective analysis of Portuguese elite athletes' involvement in international competitions

## Conclusions

An important proportion of the elite athletes did not start their international involvement at the pre-junior age

Replacement by others who started their international involvement only at a junior or senior level

Different patterns between team and individual sports  
High performance levels without previous selection are more likely to be attained in soccer and volleyball

Study III - Training and psychosocial patterns during the early development of national team athletes

## Purpose

Compare patterns of development between expert athletes and less successful athletes, in regard of their involvement in extra-curricular activities, training patterns, and their psychosocial influences

Study III - Training and psychosocial patterns during the early development of national team athletes

## Methods

### Sample

Experts.....42.....Non-Experts

Senior national squads, OG, WC, EC  
24 to 39 years old (M= 30.2, SD = 4.9)

Youth national squads, at least in EC  
24 to 36 years old (M= 29.1, SD = 3.8)

9M

Soccer  
Volleyball  
Handball

9M

6M + 6F      Swimming  
Judo  
Rowing      6M + 6F

Study III - Training and psychosocial patterns during the early development of national team athletes

## Methods

### Interview protocol

Interview guide develop by Côté, Ericsson and Law (2005) and Fraser-Thomas, Côté and Deakin (2008)

Closed-ended questions to collect quantitative data in regard of: 1) activity, training and competition involvement, 2) psychosocial influences... **until age 18**

Interviews lasted between 50 minutes and 90 minutes

## Study III - Training and psychosocial patterns during the early development of national team athletes

## Results

Training patterns milestones	Experts	Non-experts	
First supervised training	9.5 (2.9)	9.1 (3.1)	---
First organized competition	10.4 (.5)	10.4 (.4)	---
First non-specific training	14.1 (.5)	13.4 (.3)	---
Recognized top 5 regional level	14.1 (.4)	13.4 (.4)	---
Recognized top 5 national level	15.8 (.5)	14.3 (.4)	---
First international level involvement	15.9 (.4)	14.8 (.2)	$U = 128, p = .016$
When had idea to become elite athlete	16.0 (2.9)	14.1 (1.8)	$t = 2.183, p = .037, d = .77$
When made decision to become elite athlete	16.9 (2.9)	14.7 (2.1)	$t = 2.169, p = .038, d = .79$

Note. mean and SD in years of age

## Study III - Training and psychosocial patterns during the early development of national team athletes

## Results

	Experts			Non-experts		
	Stage 1 (6-12)	Stage 2 (13-15)	Stage 3 (16-18)	Stage 1 (6-12)	Stage 2 (13-15)	Stage 3 (16-18)
Extra-curricular activities <sup>1</sup>	4.5 (2.4)	2.9 (2.2)	1.2 (1.5)	3.5 (2.0)	2.0 (1.7)	1.3 (1.5)
Structured sports <sup>1</sup>	1.8 (1.3)	.7 (1.0)	.1 (.4)	1.2 (1.3)	.3 (.6)	.1 (.4)
Unstructured sports <sup>1</sup>	2.2 (1.6)	1.9 (1.7)	1.0 (1.4)	1.5 (.9)	1.3 (1.4)	.9 (1.4)
Competition <sup>1</sup>	15.9 (13.1)	30.4 (16.9)	37.6 (20.1)	10.7 (9.1)	26.8 (18.8)	31.6 (19.0)
Sport-specific play <sup>1</sup>	60.9 (111.2)	51.1 (112.2)	42.9 (92.8)	95.4 (190.7)	60.5 (129.7)	25.0 (42.8)
Sport-specific practice <sup>2</sup>	91.3 (63.7)	292.0 (159.8)	472.1 (153.1)	83.7 (68.1)	353.5 (197.7)	451.2 (160.8)
Non-specific practice <sup>2</sup>	6.1 (11.8)	45.5 (60.4)	163.8 (85.6)	8.0 (12.1)	62.9 (39.7)	122.6 (70.9)
Self-initiated practice <sup>2</sup>	2.9 (8.3)	16.5 (24.1)	47.9 (51.0)	2.7 (7.9)	23.9 (54.2)	32.8 (65.9)

Note. <sup>1</sup> number per year; <sup>2</sup> hours per year

$U = 302, p = .039$

## Study III - Training and psychosocial patterns during the early development of national team athletes

## Results

Psychosocial milestones	Experts	Non-experts	
Fathers involvement in sport (yes/no)	12/9	12/9	---
Mothers involvement in sport (yes/no)	2/19	1/20	---
Parents' type of sport involvement (same/other)	4/10	7/6	---
Parents level of involvement (national/international)	2/12	5/8	---
Training with older peers (yes/no)	20/1	20/1	---
Best friends (sport/other)	16/6	18/4	---
Close relationship with a coach <sup>1</sup>	13.5 (.8)	11.8 (.6)	$U = 122, p = .034$

Note. <sup>1</sup> mean and SD in years of age

## Study III - Training and psychosocial patterns during the early development of national team athletes

## Results

	Experts			Non-experts		
	Stage 1 (6-12)	Stage 2 (13-15)	Stage 3 (16-18)	Stage 1 (6-12)	Stage 2 (13-15)	Stage 3 (16-18)
Parent support <sup>1</sup>	78.8 (36.4)	84.0 (30.9)	88.7 (24.7)	85.8 (19.5)	89.0 (17.9)	91.9 (15.8)
Parent pressure <sup>1</sup>	1.5 (6.1)	1.6 (5.1)	3.1 (8.1)	9.5 (21.3)	15.7 (29.4)	19.4 (31.2)
Sibling influence <sup>2</sup>	2.5 (1.8)	2.5 (1.6)	3.1 (1.6)	2.1 (1.6)	2.1 (1.6)	2.4 (1.6)
Coach support <sup>1</sup>	82.4 (14.5)	81.7 (13.8)	76.0 (22.8)	72.1 (25.4)	80.9 (20.7)	83.2 (16.5)
One-on-one coaching <sup>3</sup>	.2 (.7)	17.7 (34.5)	62.1 (78.1)	2.3 (6.6)	17.3 (23.6)	36.1 (44.3)
Sport peer influence <sup>2</sup>	3.7 (1.4)	3.9 (1.2)	4.1 (1.4)	3.9 (1.3)	4.4 (.8)	4.5 (.8)

$U = 288, p = .023$

$U = 289.5, p = .029$

Note. <sup>1</sup> percentage; <sup>2</sup> 5-point Likert scale, <sup>3</sup> hours per year



Study III - Training and psychosocial patterns during the early development of national team athletes

## Conclusions

Both groups had similar patterns of development

Results support the relevance of diversification during early development  
as opposed to focusing on a single sport

Study III - Training and psychosocial patterns during the early development of national team athletes

## Conclusions

An early decision to pursue an athletic career may not be determinant  
in achieving expertise

Previous research (e.g., Gould et al., 2002) showed that one characteristic  
of the early development of world-class athletes is that  
they keep their sports involvement in perspective...

...while an earlier focus on success often leads to burnout and dropping out  
(Fraser-Thomas et al., 2008; Gould, et al., 1996)

Study III - Training and psychosocial patterns during the early development of national team athletes

## Conclusions

In general both groups had similar psychosocial patterns  
high levels of parent, coach and peer support, but...

Non-experts revealed more parental pressure and less individualized instruction  
in later stages of development

Important limitation: tracking development only until age 18

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Purpose

Detail the development of athletes that achieved an international status as adults and athletes that competed in their national squads only until junior ages, in particular the interplay between training patterns, training resources, significant others' influences and commitment

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Methods

### Sample

Experts.....22.....Non-Experts

Senior national squads, OG, WC, EC  
24 to 39 years old (M= 30.2, SD = 4.9)

Youth national squads, at least in EC  
24 to 36 years old (M= 29.1, SD = 3.8)

5M

Soccer  
Volleyball  
Handball

5M

3M + 3F

Swimming  
Judo  
Rowing

3M + 3F

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Methods

### Interview protocol

Interview guide similar to Fraser-Thomas, Côté & Deakin (2008)

Charts from study 3 interviews were showed to direct questions and stimulate recall

Seven main groups of questions and categories: 1) training patterns, 2) parent influence, 3) sibling influence, 4) coach influence, 5) peer influence, 6) training resources, and 7) commitment

Interviews lasted between 40 minutes and two hours

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Results

Experts		Non-experts
<b>Training patterns</b>		
11	Structured and unstructured activities involvement	11
8	Early play and low-intensity practice	9
7	Successful transition to older peer group	5
3	Lack of training group in critical periods	2
6	Valuing self-initiated training	3
	Difficulties in transition from junior to senior	11

"I played the qualifying to the World junior championship, but then I was moved away. Until today I wasn't told why. [...] We knew thru the newspaper. [...] And it makes all the difference. One thing is an 18 year athlete [...] that goes to a World junior championship and enjoys of some recognition, another thing is a kid that arrived close and disappeared."

Non-expert handball player

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Results

Experts		Non-experts
<b>Parent influence</b>		
5	Positive influence of parents' sport practice	2
10	Parents' supportive behaviors	11
5	Balance sport and school	6
8	Promote autonomy	6
9	Concerns about well-being without pressure toward a sport career	9
11	Moderate involvement in training/competition	7
	Under or over involvement	4

"My parents never [...] went to competitions. [...] Judo was not something with a central importance to them."

Non-expert female judo athlete

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Results

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<b>Parent influence</b>		
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9	Concerns about well-being without pressure toward a sport career	9
11	Moderate involvement in training/competition	7
	Under or over involvement	4
	Parents' pressure toward results	2

"Since the beginning the important thing was for me to be first. [...] If I wasn't he would get upset."

Non-expert male rower

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Results

Experts		Non-experts
<b>Parent influence</b>		
5	Positive influence of parents' sport practice	2
10	Parents' supportive behaviors	11
5	Balance sport and school	6
8	Promote autonomy	6
9	Concerns about well-being without pressure toward a sport career	9
11	Moderate involvement in training/competition	7
	Under or over involvement	4
	Parents' pressure toward results	2
1	Positive influence of parent-coach	Negative influence of parent-coach 1

"... when he started to be my coach, house and father were mixed with the coach [...] it was from when I woke up until I went to bed... training, training, training. "You have to do this, you didn't that." [...] he ended up being very hard and I had a coach all year round."

Non-expert female swimmer

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Results

Experts		Non-experts
<b>Sibling influence</b>		
4	Influence to start or continue sport practice	1
10	Support and encouragement	6
4	Role model to sibling or siblings as role models	4
	Lack of support	1

“... she hated that I knew judo [...] never showing any enthusiasm.”

Non-expert female judo athlete

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Results

Experts		Non-experts
<b>Coach influence</b>		
8	Focus on long-term and personal development	5
2	Early focus on results	5
2	Increased coaching competency	4
3	Lack of support during investment	2
	Intense pressure in late adolescence	6

“[Coach] “You have to train, injuries are not relevant.” [...] “It hurts my back, I can’t move.” [Coach] “That’s nothing.” So, I had to train, to compete and to have results. It was irrelevant if I was feeling good or bad. Psychologically, his pressure was very high.”

Non-expert female judo athlete

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Results

Experts		Non-experts
<b>Peer influence</b>		
3	Influence to start sport practice	3
9	Influence to maintain sport involvement and enhance commitment	8
6	Supportive behaviors regarding training and competition	6
5	Peers as role models and sources of informational support	3
4	Peers as listeners and confidants	2
3	Autonomy toward peers	

“... if I had let myself be influenced by my friends, and although I'm not saying they were bad influences, I wouldn't have done half of what I did [...] my friendships derived from handball [...] but if I stayed at training doing sit-ups [...] or training shots I stayed alone. [...] If it was by their influence, I wouldn't have done anything.”

Expert handball player

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Results

Experts		Non-experts
<b>Training resources</b>		
8	Scarce but sufficient early resources	9
4	Increased quality at club and with selection to national teams	5
4	Seek for better resources during investment	

“...the resources that I was needing and those that I had increased a lot. But I had them because I look for them. If I had stayed without doing something, nothing would have happened [...] I had to search for them”

Expert male judo athlete

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Results

Experts		Non-experts
Training resources		
8	Scarce but sufficient early resources	9
4	Increased quality at club and with selection to national teams	5
4	Seek for better resources during investment	Lack of resources to balance sport and education 6

"It would be enough if there was financial support, or athletes were supported by, for instance, training centers with faculties at the next door [...] where teachers are sensitive to sports practice and to the training hours demanded."

Non-expert male swimmer

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

## Results

Experts		Non-experts
Commitment		
8	Enjoyment and social interaction as key elements of early commitment	6
3	Early commitment to achieve high competitive levels	4
8	Skill development, success and opportunities increase commitment	7
11	Continued commitment after junior	1
	Decreased commitment after junior	10

"The only possible perspective was if I had entered the Olympic project. I was a high level athlete but not yet at the Olympic project. By that time I was still two years away from the next Olympic Games and I figured that it wasn't worth it to lose two years of my life to continue committing to swimming to accomplish a goal that would have a decisive impact on my professional career."

Non-expert male swimmer



Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

# Conclusions

Several positive developmental experiences, similar between groups  
however..

Non-experts highlighted how parents and coaches are also  
sources of negative influences to non-experts

Study IV - To be(come) or not to be(come) an expert: a qualitative study of athlete development in sport

# Conclusions

National organizations should work closer with parents of talent young athletes and better  
prepare coaches to deal properly with athletes' psychological dimension

National organizations still need to enhance the balance between  
college education and sport training

Promising young athletes need a better psychological assistance in particular to deal with  
sources of stress and to face the transition from junior to senior



Thank you...

