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## Preparing UK tennis academy players for the junior-to-senior transition: development, implementation, and evaluation of an intervention program

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**Preparing UK tennis academy players for the junior-to-senior transition: Development,  
implementation, and evaluation of an intervention program**  
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## 1 Abstract

2 **Objectives**

3 The current case study aimed to develop, implement and evaluate an intervention program to  
4 aid preparation for the junior-to-senior transition (JST) in sport, which provides a novel  
5 contribution to the existing professional practice literature. The program, based upon existing  
6 theory, focused on developing resources, knowledge and readiness to cope with the  
7 transition. The authors were particularly interested in exploring the participants' evaluations.

8 **Design/Method**

9 A symbolic modeling approach was adopted, in which 5 senior tennis players were recorded  
10 on video discussing the demands of and coping strategies for the JST. The videos were used  
11 to support the intervention and delivered over 11 weeks to 7 junior tennis players from an  
12 elite training program in the U.K. ( $M = 15.1$  years,  $SD = 1.24$ ). To evaluate the  
13 intervention, a mixed methods single-subject design was used, with readiness to cope,  
14 knowledge and athletic identity assessed at three time points, along with social validation.

15 **Results**

16 Social-validation data indicated that the participants placed value on the intervention as a  
17 means to prepare for transition, citing increases in knowledge, coping, confidence and  
18 transition related skills. Quantitative data demonstrated an increase in readiness to cope with,  
19 and an increase knowledge of the JST. Athletic identity showed a small decrease.

20 **Conclusions**

21 The current study supports existing research upon the value of preparation for transition in  
22 sport, with this the first transition preparation program for the JST well received by athletes.  
23 Further research is required to explore longitudinally how such interventions contribute to a  
24 successful JST.

25 *Keywords:* within career-transition; athlete development; tennis; applied case intervention.



1 organizational structure of transition support for the JST in British football clubs, junior  
2 athletes benefitted from insight concerning the demands of professional football, with this  
3 ideally being delivered by staff with relevant specialist knowledge, such as sport scientists. A  
4 realistic picture of the significant challenge ahead was welcomed by players. Sources of  
5 support were also identified as vital, thereby echoing Stambulova's (2003) emphasis upon  
6 achieving a proper balance between demands and resources. Research in tennis endorses this  
7 perspective, with the appropriate organizational support being fundamental to successful  
8 progression to the top of the rankings (Matthews, Farrow, MacMahon & Weissensteiner,  
9 2012).

10 Exposure to senior/elite sport and to role models in the form of senior peers can also  
11 contribute towards a successful transition (Bruner, Munroe-Chandler & Spink, 2008). This  
12 not only instils readiness to cope with transition (Bruner et al., 2008), but alongside education  
13 enhances athletes' comprehension of the transition process, of the expected physical and  
14 mental demands, and of the personal characteristics required. These are factors demonstrated  
15 to encourage successful adaptation (Morris et al., 2016). Furthermore, Stambulova and  
16 colleagues recently examined the phases of transition in Swedish ice hockey players, finding  
17 that role models were especially important in the early stages of transition, when young  
18 athletes look to their senior peers for encouragement and to help understand what to do and  
19 how to behave at senior level (Stambulova et al., 2017). This kind of informational support  
20 from more senior athletes is a valuable resource, allowing young athletes to gain knowledge  
21 of norms of the senior environment, including the performance and lifestyle demands  
22 inherent in participation at senior level, together with the opportunity to model the behavior  
23 of more experienced peers (Pummell, Harwood & Lavalley, 2008; Pehrson, Stambulova &  
24 Olsson, 2017). Even at retirement, Grove et al. (1998) identified that the sharing of transition

1 experiences by senior role models can not only prove therapeutic, but also prompts current  
2 athletes to begin to prepare for their own transition.

3         The athletic career transition model (Stambulova, 2003) proposes that successful  
4 transition is determined by the navigation of specific transition demands (e.g., a higher  
5 playing level), for which the athlete needs coping resources such as knowledge, skills,  
6 motivation, social, informational and financial support. The demands to which athletes are  
7 exposed are also affected qualitatively, by interactions between athletic, psychological,  
8 psychosocial, academic/vocational and financial levels of development. According to the  
9 holistic athletic career model (Wylleman, Reints, & De Knop, 2013), those supporting an  
10 athlete's development should take a whole-person approach, being mindful of the progression  
11 at these different levels, with concurrent transitions probable. Indeed, the model anticipates  
12 that the JST is likely to coincide with a transition into higher education or to becoming a  
13 (semi-) professional athlete, with an associated broadening of one's social network and with  
14 the need to become more financially independent and/or to seek support from sponsors or the  
15 governing body. Thus, there are several transitional challenges in a relatively short time,  
16 making this period of an athlete's life a particularly exacting one and subsequently requiring  
17 more support. However, whilst the existing literature endorses the value of preparation to  
18 bolster resources and to overcome barriers (e.g. Morris, Tod & Oliver, 2016), interventions  
19 designed to provide such preparation are scarce.

20         In response, the authors of this current study aim to develop, implement and evaluate  
21 an intervention to prepare athletes in an international high-performance tennis center in the  
22 United Kingdom for the JST. Whilst junior success can be an indicator of later professional  
23 success in tennis, the majority of variance in professional rankings remains unexplained  
24 (Bane, Elliott & Reid, 2016). The professional tennis circuit is a particularly challenging  
25 environment for aspiring players, lasting 11 months of the year and taking elite junior players

1 from the relative comfort of the top level junior tournaments, to low level senior tournaments  
2 with limited prize money, difficult playing conditions and often reduced support due to a lack  
3 of funding, lack of availability of appropriate role models, and extensive travel (Pummell &  
4 Lavallee, 2009). This background creates an appropriate context for intervention, offering  
5 coaches, sport scientists and organizations the opportunity to support junior athletes in their  
6 preparation for, and in the navigation of the transition.

7         The specific aims of the current study are therefore to: i) develop an intervention  
8 program to aid preparation for the JST, based upon existing literature, which provides a novel  
9 contribution to the professional practice literature; and ii) to implement the program, evaluate  
10 the effects, and evaluate the program itself. There are calls for sporting organizations to  
11 establish better links between their junior and senior departments, including through the creation  
12 of opportunities for role models to assist with preparation for transition (Stambulova et al., 2017),  
13 and the methodology of this study, which draws upon senior role models, is consistent with that  
14 goal.

15         The design of the current study is comprised in two phases, with the first constituting  
16 the development of the intervention, and the program which resulted and the second covering  
17 the implementation and participants' evaluations. The intervention took place at a non-  
18 residential high-performance tennis center in the United Kingdom, with players registered on  
19 the elite training program. These athletes benefitted from access to highly trained coaches, as  
20 well as specialized sport science support, and received their education as part of the academy  
21 set up.

## 22                                 **Phase 1: Development of the Intervention Program**

### 23 **Phase 1 Method**

24                 **Research-Informed Intervention.** The intervention content was designed to help the  
25 participants understand the demands associated with the JST and to build the resources

1 required for successful transition. The structure and content were inspired by established  
2 frameworks emphasizing the importance of a balance between demands and resources in  
3 order to sustain optimal adjustment (Schlossberg, 1981; (Stambulova, 2003; Wylleman et al.,  
4 2013). Interviews with athletes and with stakeholders have demonstrated that knowledge of  
5 the transition process and realistic expectations about life as a senior athlete are important for  
6 readiness for the transition (Bruner et al., 2008; Morris et al., 2016), and therefore the authors  
7 aimed to develop an intervention program which supported athletes' adjustment by providing  
8 them with such informational support. More specifically, a 'whole-person' focus to the  
9 content was sought, derived from the five levels of the holistic athletic career model  
10 (Wylleman et al., 2013), and related research (e.g., Rosier, Wylleman, De Bosscher & Van  
11 Hoecke, 2015). At the athletic level, the program emphasized the higher performance  
12 standards expected and the difference in both the nature and intensity of lifestyle demands of  
13 senior level tennis. These factors encompass, for example, what to expect from the senior  
14 tour at the psychological level, the increased responsibility, independence and discipline  
15 required (Pummell & Lavalley, 2009; Rosier et al., 2015; Stambulova et al., 2017), as well as  
16 developmental responsibilities critical to the status of a successful senior athlete, such as a  
17 healthy diet (Stambulova, Alfermann, Statler & Côté, 2009). Psychosocially, the participants  
18 were educated about changes in their support structures and where to seek support (Pummell  
19 & Lavalley, 2009; Rosier et al., 2015; Morris et al., 2016). Academic development was  
20 discussed, alongside skills such as time management (Stambulova et al., 2009), and the  
21 financial demands of the transition were explored, together with strategies for managing  
22 greater financial independence and seeking financial support (Stambulova, 2003).

23         When considering the optimal sources of informational support for the JST, research  
24 has demonstrated the importance, not only of specialist sport scientists, but also of role  
25 models, it being recommend that junior players receive regular opportunities to observe and

1 interact with senior players (e.g. Morris et al., 2015; Stambulova et al., 2017). However,  
2 given the demanding travelling schedules of elite senior tennis players, they are only  
3 infrequently available to interact with aspiring juniors. In addition, at lower level senior  
4 tournaments, where juniors often get their first taste of senior competition, there is a potential  
5 for inappropriate role models to be identified; those who do not demonstrate the types of  
6 professional behaviors and attitudes conducive to progress, and who are themselves unlikely  
7 to progress (Pummell & Lavalley, 2009). It is therefore important, not only that there are  
8 opportunities for role modeling, but that the role models available are appropriate. The  
9 solution adopted in the current investigation, was to provide informational support from role  
10 models via video. According to social cognitive theory (Bandura, 1989), symbolic (video)  
11 modeling can significantly impact learning. It is also a means through which an individual,  
12 highly relevant model can provide opportunities for learning to a greater number of  
13 participants than would otherwise be possible.

14       **Role models.** The role models, in this intervention, were five current senior tennis  
15 players who were contacted via the first author's contacts with the national association. A  
16 semi-structured interview guide was developed, based upon the demands of transition  
17 identified in theory and research (e.g. Schlossberg, 1981; Stambulova, 2003, Wylleman et al.,  
18 2013), with each role model being interviewed, and video-recorded, with consent to discuss  
19 their experiences on the tour and their own JST. The role models were chosen to be credible  
20 and relevant due to their similar characteristics (both male and female role models) and  
21 backgrounds (i.e., developing through the same national governing body structure) to the  
22 prospective participants. They had made the transition to senior level at least one year prior,  
23 with the most experienced player having transitioned to senior level 14 years prior. Role  
24 models had rankings ranging from 500 up to the top 100 in either singles or doubles. Of those  
25 players currently playing only doubles tennis, all had originally embarked on a singles career,

1 reflecting the typical pathway in professional doubles tennis. Across the role models, there  
2 was therefore considerable experience and knowledge of the senior tennis tour.

### 3 **Phase 1 Results**

4         The video interviews were edited into clips and organized into 10 topics relevant to  
5 the transition in tennis, detailed in Table 1. Titles and a narrative were added to the videos in  
6 order to add context to the content, and discussions and activities supplemented the video  
7 content and encouraged the participants to apply content to their own transition. For example,  
8 week 1 comprised an introduction to the JST, with senior role models discussing their  
9 experiences of making the step up from junior to senior tournaments. Supporting information  
10 from men's and women's tennis was used to educate participants about the types of  
11 tournaments at senior level, and how ranking points are collected. In week 2, videos with  
12 senior role models included the differences between playing tennis at junior versus senior  
13 level both on-court and off-court, including fitness and performance demands, as well as the  
14 lifestyle of a senior player. The participants subsequently identified differences between the  
15 performance and lifestyle demands as an elite junior, and those of a senior player, and set  
16 realistic goals to begin to address some of these differences. Weeks 3, 4 and 5 focused on  
17 psychological demands, mental skills and professional behaviors at senior level. Profiles of  
18 current top players were used as examples to illustrate the typical (non-linear) progress of a  
19 tennis player, and participants identified areas in which they could take on greater personal  
20 responsibility and demonstrate more professional behaviors (such as match preparation)  
21 ahead of transition. The second half of the program included a focus on scheduling of  
22 tournaments and discussion of the additional demands imposed by this over and above the  
23 participants' current tournament schedule (week 6). There was identification of opportunities  
24 for support (week 8) and how to maximise the support and knowledge currently available at  
25 the academy. Players were also asked to review and update their goals in week 7 and again in

1 week 10 following information from senior role models about preparation for the JST and  
2 phases of the transition in tennis.

### 3 **Phase 2: Implementation and Evaluation of the Intervention Program**

#### 4 **Phase 2 Method**

5 A single-subject mixed methods design was employed, with data collected at baseline, at the  
6 mid-point of the intervention and at its conclusion. Given the exploratory nature of the  
7 research, the participants' evaluation of the intervention at its termination was collected  
8 through social validation.

9 **Participants.** Following institutional ethical approval, a letter, along with a consent  
10 form was sent to all 12 players (and their parents), aged between 13 and 16 years, who were  
11 registered on the elite training program at a high-performance tennis center in the United  
12 Kingdom. This age group is considered appropriate given calls to support the development of  
13 appropriate knowledge, skills, motivation, and coping mechanisms for transition once young  
14 athletes enter a professional environment (Morris et al., 2016). Whilst the younger players on  
15 the elite training program had a number of years still remaining in junior tennis, ethically it  
16 was judged appropriate, to maximize benefit by offering the intervention to all (British  
17 Psychological Society, 2014). Potential participants were offered a place on a sport  
18 psychology program on the topic of the junior-senior transition. Of the twelve players  
19 contacted, eight returned their consent forms, and seven players (three females, four males)  
20 completed the program ( $M = 15.1$  years,  $SD = 1.24$ ). All the tennis players who took part  
21 were competing at national and/or international junior tournaments. The national rankings of  
22 the seven participants were obtained at the beginning of study; with three ranked within the  
23 top 20 players of their age group, and a further two in the top 50. The remaining two  
24 participants were ranked between 70-80 and 110-120.

1           **Intervention.** The intervention program, took place in weekly 1.5-hour sessions over  
2 11 weeks, to fit in with the schedule of the tennis academy, which followed the academic  
3 calendar in the U.K. Weeks one to 10 consisted of delivery of the intervention content, as  
4 detailed in Phase 1. Data were collected at three time points (week 1, week 6 and week 10),  
5 with week 11 consisting of social validation. Repeated measures were taken under the same  
6 conditions, i.e., with the location, time of day, and instructions given standardized for each  
7 data collection point.

8           Steps were taken to maximize learning through the symbolic modeling intervention,  
9 in accordance with Rosenthal and Bandura (1978) and not to overload the participants. The  
10 videos were therefore of no more than 20 minutes duration before a break for discussion with  
11 and between the participants. At the end of each session a 'reflection sheet' was presented to  
12 each participant, requiring them to identify the three elements from each session judged to be  
13 of most personal significance, in the context of their own JST (Rosenthal & Bandura, 1978).  
14 This also provided a means for the researcher to check comprehension of the material, in  
15 order that omissions or misconceptions could be corrected by additional discussion or  
16 explanation (Bandura, 1989).

17           To enhance the participants' preparation for transition further and to consolidate their  
18 learning, a diary for recording personal reflections between every session was developed.  
19 This was designed to encourage them to revisit and to apply the knowledge and strategies  
20 which the role models had shared. Time was scheduled at the beginning of each session to  
21 discuss reflections from the previous week. Research suggests this is important for young  
22 athletes preparing for the JST (Morris et al., 2016) and participants were encouraged to share  
23 the thoughts and feelings which emerged as a consequence with senior players (who whilst  
24 not permanent fixtures at the academy, sometimes visited for short training blocks) and with  
25 former senior players (now coaches) in the academy. The final element of behavioral

1 reinforcement (important in sustaining the enactment of learned behaviors; Bandura, 1989)  
2 was the involvement of the academy coaches, who were recruited to support the  
3 intervention's aims. Provided with a written overview of the week's intervention topic, the  
4 coaches were asked to acknowledge and positively to reinforce the display of transition  
5 appropriate behaviors which had been covered in the program. This strategy was adopted to  
6 build the participants' efficacy in their ability to perform the transition-related behavior  
7 which they had learnt to be important, and to provide additional social support in this process.  
8 With social support considered the most critical external resource at the JST (Stambulova,  
9 Franck & Weibull, 2012), and verbal persuasion and successful performance of skills being  
10 two predictors of self-efficacy beliefs (Bandura, 1989), this was an important element of the  
11 intervention. To motivate the coaches to reinforce behaviors, they were asked to record the  
12 number of relevant interactions with the participants.

13         **Assessment.** On the basis of the research reviewed previously, the authors  
14 hypothesized that the symbolic modeling intervention described here would improve  
15 knowledge of the JST transition demands and readiness to cope with the transition amongst a  
16 group of junior tennis players. Given Schlossberg's (1981) definition of transition, which  
17 suggests that there is a change in how the individual views him/herself at transition, and  
18 research in sport has supported this, highlighting significant identity development through  
19 career transition (e.g., Brewer, Van Raalte, & Linder, 1993; Stambulova, 2009), we were also  
20 interested to examine the effect of the intervention on athletic identity. In fact, a high level of  
21 athletic identity has been shown to be facilitative of within-career transition (e.g.  
22 Poczwardowski, Diehl, O'Neil, Cote, & Haberl, 2013; Franck, Stambulova & Weibull,  
23 2016), because it usually manifests as a strong commitment to the sport which is beneficial  
24 when attempting to break into the senior ranks. However, in view of research indicating that  
25 athletic identity is already high amongst adolescent elite athletes and remains high (Houle et

1 al., 2010), we predicted that the participants would already demonstrate high athletic identity  
2 and that the intervention would not significantly increase this.

3 Measurement of the dependent variables was via questionnaire and perceptions of  
4 the program were assessed via social-validation. Athletic identity was assessed using the  
5 Athletic Identity Measurement Scale (AIMS; Brewer et al., 1993; Brewer & Cornelius,  
6 2001), and readiness to cope with transition by a modified version of the Transition Coping  
7 Questionnaire (TCQ; Schlossberg, 1993). Knowledge of transition demands was assessed via  
8 a self-report measure designed for this study.

9 ***Athletic identity.*** The seven-item AIMS (Brewer & Cornelius, 2001), assesses the  
10 strength and exclusivity of identification with the athletic role. Participants respond to the  
11 items on a scale from 1 (strongly disagree) to 7 (strongly agree). In the present study, internal  
12 consistency of the scale was  $\alpha=.73$  (pre-intervention),  $\alpha=.67$  (at mid-point assessment), and  
13  $\alpha=.77$  (post intervention), suggesting adequate reliability.

14 ***Readiness to cope with the transition.*** A modified version of the TCQ (Schlossberg,  
15 1993) was used to assess perceptions of readiness to cope with the future transition. The  
16 original TCQ contains 45 questions that ask respondents to rate themselves in four areas: i)  
17 their Situation (i.e., how they see the transition that they are facing), ii) the Self (i.e., personal  
18 characteristics that they bring to the transition), iii) the Supports they have (i.e., what help  
19 they have from others), and iv) their coping Strategies (i.e., the skills they possess to cope  
20 with the transition). This questionnaire has previously been used with sport populations in  
21 relation to career termination (Lavalley, 2005) and research has demonstrated strong validity  
22 and reliability (Schlossberg, Waters & Goodman, 1995). However, some of the items in the  
23 original questionnaire were deemed inappropriate for the specific transition under  
24 investigation and for junior athletes, being focused on life transitions for adults. These were  
25 either removed or the wording modified for the specific transition context, i.e. the JST. The

1 four areas of the TCQ were retained, and each participant's perception of their coping ability  
2 was assessed using 22 items on a seven-point Likert-type scale from 1 (not at all true) to 7  
3 (completely true). Items included: 'If I was to make the transition to senior level right now, it  
4 would cause stress in my life' (Situation), 'Right now, I have a clear idea about how to make  
5 it to senior level' (Self), 'Right now, I receive support from my coach for the transition to  
6 senior level' (Supports), and 'Right now, I have specific goals which I've set to prepare  
7 myself for the transition from junior-to-senior level' (Strategies). The Cronbach's alpha  
8 coefficients for this study across the four subscales and three time-points were acceptably in  
9 the range  $\alpha=.67$  to  $\alpha=.92$ , with the exception of the *Situation* subscale when administered pre-  
10 intervention, which yielded a co-efficient of  $\alpha=.40$ . The relevant results should therefore be  
11 interpreted with caution.

12         **Knowledge.** In order to assess knowledge, given the lack of an existing tool, a pool of  
13 items relevant to the junior-senior transition was developed based on theory and the demands  
14 of the JST identified in the literature (including Pummell & Lavalley, 2009; Stambulova,  
15 2003, 2009). Items were checked for face validity by two experts in the area of within-career  
16 transition, and the measure was pre-tested with four junior tennis players. Participants rated  
17 their current knowledge using a visual-analogue scale, as well as identifying a knowledge  
18 goal to empower and motivate them to direct their preparation (Danish et al., 1995).  
19 Participant responses were determined by measuring from the left-hand side of the scale to  
20 the marked response, with anchors of 'No knowledge', 'Some knowledge', and 'Great  
21 knowledge', and a maximum scale score of 150. Questions asked participants to give their  
22 perspective on their current level of knowledge about various aspects of the transition,  
23 including the differences between the tennis played at junior and senior level, what senior  
24 players have done on and off the court to prepare themselves to make the JST, and the type  
25 and amount of training required at senior level.

1           The final stage of the intervention in week 11 involved a qualitative examination of  
2 the participants' perceptions of the program. Social-validation is often used after the  
3 conclusion of an intervention to assess: the extent to which the target skill is important to the  
4 target population, if the procedures are effective and acceptable, and if the participants are  
5 satisfied with the results (Hrycaiko & Martin, 1996). As such, participants were posed a  
6 series of questions which asked them to reflect on the program, alongside survey style  
7 questions to rate the intervention's impact upon their preparation, readiness to cope, and  
8 knowledge of the JST (on a seven-point Likert-type scale from 'not at all' to 'very much so').  
9 These questions included: 'To what extent do you feel more confident in your ability to make  
10 the transition from junior to senior level than you did before the program?', 'To what extent  
11 do you feel that you have developed skills which will be useful to you for making the  
12 transition?'. Based on the responses given, participants were then asked to elaborate on their  
13 response in a qualitative manner with follow-up questions such as 'In what ways do you feel  
14 more confident for the transition?', or 'What skills have you developed?' These follow up  
15 questions were designed to elicit greater depth, giving insight into the idiosyncrasies of that  
16 participant's experiences.

17           **Data analysis.** Data were inputted into Microsoft Excel, and graphically illustrated to  
18 visually examine the effect of the intervention on the dependent variables. This is a process  
19 deemed acceptable in single case design where the examination of practical significance is  
20 appropriate. Hrycaiko and Martin (1996) state that the following principles can be used to  
21 guide the visual analysis: i) baseline assessments are stable or in the opposite direction to that  
22 expected due to the intervention; ii) any effect during intervention is replicated both within  
23 and across participants; iii) few overlapping data points exist between the baseline and  
24 intervention assessments; iv) that an effect occurs soon after introduction of the intervention;  
25 (v) a large effect is demonstrated; and (vi) the results are consistent with relevant theory

1 (Hrycaiko & Martin, 1996). Conditions ii-vi are relevant to the design of the current study.  
2 Hrycaiko and Martin also propose that to assess the practical significance, one must examine  
3 the social validity of the change, and therefore responses to the qualitative social-validation  
4 questions were transcribed and are reported verbatim alongside the relevant quantitative  
5 results. Deductive content analysis was used to organize the quotes into themes according to  
6 the topics of the quantitative social validation questions. Quantitative data from the social  
7 validation questions was analyzed descriptively in order to report mean values for each  
8 question.

### 9 **Phase 2 Results**

10 Seven junior tennis players completed the intervention program, with one male player  
11 dropping out due to competing time demands. Descriptive statistics are presented in Table 2.  
12 Verbatim quotes from the interviews are presented in the text, with relevant comments  
13 highlighting the participant's perceptions relating to knowledge, readiness to cope, and  
14 athletic identity, and their ratings of change in these domains. Following this, quotes relating  
15 to the participants' general perceptions of and reflections on the program are included.

16 **Knowledge.** The data in Table 2 indicate that the participants demonstrated an  
17 increase in transition-related knowledge during the intervention. There was a greater increase  
18 for all participants in knowledge from Time 1 to Time 2 than Time 2 to Time 3. All  
19 participants demonstrated this profile, with the exception of participant 4, who had the  
20 greatest increase from Time 2 to Time 3.

21 With the exception of participant 3, who rated their increase in knowledge as a result  
22 of taking part in the program at 4 (on a scale of 1-7), all participants rated this at 6 or 7 during  
23 the social-validation phase ( $M = 6.28$ ;  $SD = 1.11$ ). Participant 5 confirmed the discrepancy  
24 between their transition-related knowledge pre- and post-intervention:

1 I really didn't have a clue what the senior tour was like at all before I did the program.  
2 I didn't know like any of the tournaments, any of the lifestyle. I didn't know anything.  
3 And now I'm informed and I know how to do it and how people have done it....At the  
4 start because I didn't know much about senior tour, I was just thinking 'oh, I know I  
5 know everything I need to know, this is going to be a waste of time', and then when  
6 we went in there and we watched the videos and we watched the players talking, it  
7 was like there's so much more to it and you don't even realize it.

8 Coaches also related aspects of training sessions to the senior level and encouraged  
9 participants to think about their preparation:

10 It's again, like enforcing the fact that senior players and [the] senior tours are a lot  
11 different from the juniors and that we have to be ready for it - and that if we're going  
12 to make it we have to do certain things to make it (P4).

13 **Readiness to Cope with the Transition.** As shown in Table 2, the overall readiness  
14 of the group increased from Time 1 to Time 3, with a mean increase of 13.43 ( $SD = 15.51$ ),  
15 and there was an increase from pre- to post-intervention on all four of the TCQ subscales.  
16 The mean increase for the *Situation* subscale was 5.0 ( $SD = 5.30$ ), for *Self*, the mean increase  
17 was 3.71 ( $SD = 3.40$ ), for *Supports* the mean increase was 0.43 ( $SD = 2.57$ ) and for  
18 *Strategies*, 4.29 ( $SD = 8.10$ ). The group showed a mean increase from Time 1 to Time 2 and  
19 Time 2 to Time 3 on all of the subscales with the exception of *Supports* which showed a  
20 mean decrease from Time 1 to Time 2 ( $M = -1.71$ ,  $SD = 2.06$ ), before then increasing above  
21 the initial level at Time 1.

22 In the social-validation phase, participants felt that taking part in the intervention had  
23 left them more prepared to cope with the transition, with a mean rating of 6.14 ( $SD = 0.69$ ).  
24 Each participant rated the improvement in their feelings of coping at six or seven on the  
25 seven-point Likert-type scale. Participant 4 commented:

1 I feel like more, more prepared as in I just know more about things, like the  
2 tournaments and the, like the scheduling plans and things like that. I just feel like I  
3 know like how to get myself ready [for the transition].

4 During the program, participants perceived that they had developed skills which would help  
5 them to cope with the JST (with a mean rating of 5.43,  $SD = 0.79$ ). These skills were varied  
6 and included: organization skills, tournament planning and scheduling, the ability to deal with  
7 setbacks, match preparation, and independence:

8 I'm a bit more like independent in choosing the stuff I want to do. Because like if  
9 you're going to be a senior player you can't really rely on, too much on, loads of other  
10 people. So I'm taking things like into my own account, and doing, trying to do more  
11 stuff on my own, instead of asking people to do it (P2).

12 However, participant 6 thought that the skills learned would be useful later: "I think as I get  
13 older then I think it will have more of an effect because it will, you will have to realize the  
14 realities of it, I'll use those things, definitely".

15 The social-validation data also suggested that efficacy in one's ability to make the  
16 transition was increased by participation in the program (with a mean rating of 5.71;  $SD =$   
17 0.95). Participant 4 suggested that confidence for the transition came from realizing how to  
18 deal with setbacks, and this also fostered a commitment to keep trying:

19 It just like makes you think that you can deal with things rather than 'what would I do  
20 then?' And makes you feel more confident if that happened. So, like you'd be more  
21 committed to do it because you wouldn't be so scared of things like that happening. I  
22 feel more confident now like about what's going to happen.

23 The development of specific skills and confidence in one's ability to cope with the demands  
24 associated with senior tennis were also important: "I know that I could plan my tournaments

1 by myself, I know that I'll be able to also like sort out where I'll be staying and everything"  
2 (participant 7).

3 **Athletic Identity.** Athletic identity showed little change for any of the participants  
4 (the group as a whole showed a marginal decrease of 0.14 ( $SD = 3.24$ ) from Time 1 to Time  
5 3. Only one participant (participant 4) showed more than a two-point change on the scale  
6 from pre- to post-intervention. Despite these results suggesting little change in commitment  
7 to the athlete role (i.e., athletic identity), during the social validation stage, all participants  
8 reported increases in commitment to making the transition to senior level and therefore  
9 pursuing life as a professional tennis player ( $M = 5.07$ ,  $SD = 1.17$ ). Participant 5, who rated  
10 their increase in commitment to the transition at 6 on the 7-point scale, commented that:

11 Because of the information we were finding out, and as the tour seemed to get more  
12 and more complicated we were paying more and more attention so, and when we  
13 found out how hard it is we were more committed. We were thinking 'God, if we  
14 don't get, if we don't buck up our ideas we're not going to do very well are we?' So  
15 now we're more committed to doing the correct things.

16 **Participants' General Perceptions of the Program.** As a group, the participants  
17 rated the information included in the intervention as very useful ( $M = 6.29$ ,  $SD = 0.76$ ). The  
18 participants especially appreciated the opportunity to hear first hand experiences from senior  
19 players, for example, participant 3 commented:

20 It wasn't just like saying, 'oh well, this person did that', it's rather they're actually  
21 telling you that they did it, so it's like you getting it first-hand....They were talking  
22 like in real life, so you saw the people saying it themselves, so you're probably more  
23 inclined to believe it because they're saying it.

24 Opinions on the most valuable part of the intervention varied between participants,  
25 but knowledge of, and a heightened commitment to the transition demands was apparent,

1 with participant 5 reporting a greater understanding of the need to prepare for the transition,  
2 rather than waiting for it to happen:

3 Before going to this program I was quite naïve about the transition. I was thinking,  
4 ‘yeah, it’s three years away, who cares, you know, when actually I need to be starting  
5 to prepare for the transition now, like in my responsibility, my commitment, my  
6 preparation; all these things.

### 7 **Discussion**

8 The current study aimed to provide a novel approach to the preparation of athletes for the  
9 JST. Specifically, the aims were to: i) develop an intervention program to aid preparation for  
10 the JST, based upon existing literature, which provides a novel contribution to the  
11 professional practice literature; and ii) to implement the program, evaluate the effects, and  
12 evaluate the program itself. Previous research has demonstrated the key role of preparation  
13 for this transition (e.g., Morris et al., 2016), but none has so far implemented intervention  
14 based on this understanding. The current study therefore represents a valuable first  
15 contribution to an area in which intervention has so far been neglected. The results suggest  
16 that using role models via symbolic modeling to provide informational support can provide  
17 junior athletes with knowledge of senior sport and is perceived as valuable preparation by  
18 junior tennis players.

19 Danish and colleagues (1995) propose that intervention should aim to prepare athletes  
20 for an upcoming transition through the teaching of relevant skills, the imparting of  
21 appropriate knowledge and establishment of self-efficacy for the transition. In terms of the  
22 JST, this empowerment process requires a comprehensive familiarization of the athletes with  
23 the senior tennis tour, based around a plan for transition, and including goal setting targeted  
24 on relevant behaviors and skills. The current study reflected these goals and the quantitative  
25 and social-validation data imply that the participants indeed felt more confident, prepared for

1 and knowledgeable about the transition as a consequence. Beyond the specific dependent  
2 variables, there was also a perception by the participants that it had been useful to them, and  
3 that they had developed skills which they could utilize in the future, with high ratings for  
4 perceived increase in knowledge and coping.

5         Commitment to making the transition was the factor upon which participants rated  
6 themselves lowest post-intervention, although they still reported an increase. This lower  
7 rating was perhaps affected by the realization that the transition would be more difficult than  
8 some of the participants had initially expected. Upon making this discovery during the  
9 program, it is possible that the participants concerned may have begun to (re)consider their  
10 chosen career path. However, given that many athletes prematurely commit to a career in  
11 their sport without considering other options (Brewer, Van Raalte & Petitpas, 2000), a  
12 program such as this, which seeks to reflect the reality of life as a senior athlete, might help to  
13 prevent or reduce the likelihood of such a foreclosed identity. Given the evidence (e.g.,  
14 Brewer, 1993, Mussweiler, Gabriel, & Bodenhausen, 2000) that a foreclosed identity may be  
15 negative for adjustment to setbacks and the inevitable social comparison in sport, this is an  
16 important consideration, worthy of further research. The qualitative results in relation to  
17 commitment were reflected in the quantitative results, with minimal change in athletic  
18 identity. Although an increased identification with the role of athlete would be anticipated at  
19 the JST (on the basis of existing literature, e.g., Brewer et al., 2000), the participants in the  
20 current intervention program were not actually undergoing the transition at the time of the  
21 intervention, but were merely preparing for it. If the program prompted the athletes to re-  
22 evaluate their commitment to a career in the sport, it was perhaps too early in the transition  
23 process to discern any significant shift in athletic identity related to the forthcoming move to  
24 senior level. Indeed, theory and research suggest that a modification in the identity hierarchy,  
25 i.e., an identity becoming more or less salient, is likely to occur when there is an alteration in

1 the circumstances which relate to that identity, such as a modification in relevant  
2 relationships and behavior (Cassidy & Trew, 2004; Schlossberg, 1981). However, during a  
3 preparatory transition program, relationships are likely to have remained stable (given the  
4 lack of real-life contact with senior athletes), and the athletes were not yet required to (and  
5 were only just learning of the need to) adapt their behavior. Whilst the effect on athletic  
6 identity of a transition preparation program has not previously been explored, it may  
7 therefore have been premature to expect any change in the salience of athletic identity at this  
8 stage.

9         Whilst the social validation data are considered key in this study, the quantitative data  
10 are also worthy of further discussion, although when interpreting this data, readers should be  
11 mindful of limitations in the current research. The results have been derived from a small  
12 sample, with a single-case design, in which multiple-baseline assessments were not possible  
13 due to the time constraints of the tennis academy adhering to the academic term in the United  
14 Kingdom and to players' travelling schedules either side of this. Nevertheless, there were  
15 consistent patterns across the group, with all participants reporting an increase in knowledge  
16 of transition demands. The data adhered to the relevant principles set out by Hrycaiko and  
17 Martin (1996) for visual inspection, i.e. that the increase was seen both within and across  
18 participants, there were no overlapping data points, a large effect is seen at the beginning of  
19 the intervention, and the results were as expected in relation to previous research highlighting  
20 a need for informational support at the transition (Stambulova, 2003). The effect of the  
21 intervention on readiness to cope with the transition reveals an increase throughout the  
22 intervention for four of the participants, with three demonstrating a small decrease, either  
23 from time 1 to 2, before increasing to time 3, or from pre to post intervention. Athletic  
24 identity demonstrated little change for six of the participants. The largest change is evident in  
25 participant 4, who was also the only participant to show no increase in readiness to cope with

1 the transition at time point 2 or 3. Although a large change was not expected for athletic  
2 identity, as already discussed, the results for readiness to cope with the transition warrant  
3 further examination, particularly with a larger sample.

4         Whilst the change in readiness to cope with the transition was less consistent than the  
5 increase in knowledge, across the participants there was good evidence for an increase in  
6 perceived coping readiness having occurred over the duration of the program, based on the  
7 results from the modified TCQ (Schlossberg, 1993), with increases on all of the four  
8 subscales (Situation, Self, Supports and Strategies). However, as reported, scores on the  
9 Supports subscale decreased from pre- to mid-intervention, before returning to and then  
10 exceeding the pre-intervention score at conclusion of the program. It is unclear why this  
11 pattern of results emerged. Questions in this subscale relate to support from peers and  
12 particularly from coaches, for the transition. It is possible that whilst they were receiving  
13 information about the senior tour from their coaches, the participants discerned an accusatory  
14 tone. Coaches were asked only to reinforce the messages from the current week's  
15 intervention session, but the participants reported that coaches pointed out the differences  
16 between the behavior or skills which they, as junior players, had demonstrated, and those of  
17 the players on the senior tour (i.e., this is how you are, and this is how you should be).  
18 According to discrepancy theory (Higgins, 1987), the expectations one perceives significant  
19 others have of the self can result in psychologically distressing emotions when it is apparent  
20 that this 'ought' self is not met. Consequently, the participants may have perceived the  
21 coaches to be critical rather than autonomy-supportive (Mageau & Vallerand, 2003).  
22 Alternatively, it may be that, with the increase in knowledge of the demands of the transition  
23 (which was most marked from Time 1 to Time 2, when there was a concurrent decrease on  
24 the Supports subscale), the participants felt overwhelmed by the complexities of what they  
25 might face and perceived that there was not enough support available to help them to make

1 the transition successfully. Although this aspect requires further investigation, the latter  
2 explanation seems less probable since there was no concomitant decrease in the other areas of  
3 coping (e.g., perception of the situation), which one might expect if the participants felt  
4 overwhelmed by the forthcoming transition; rather there was an increase. Thus, it seems that  
5 the combination of informational support via role models and the teaching and practicing of  
6 transition-related skills was effective in bringing about an increase in perceived coping skills  
7 in these participants, but that care must be taken regarding the nature of delivery of  
8 information.

9         It should also be noted by practitioners and coaches that those approaching transition  
10 are not necessarily minded, or individually able, to prepare for the transition through seeking  
11 understanding and knowledge. Indeed, the logistics of many elite sports, including tennis,  
12 means that contact with senior athletes is difficult. Due to senior tour in tennis spanning 11  
13 months of the year, and with tournaments across the globe, role models may often be remote  
14 figures and prove to be inaccessible. Perhaps even more tellingly, one of the participants  
15 intimated that they may not have looked for such information even if it was readily available,  
16 because there was a misconception that the participants knew everything that there was to  
17 know. This can be likened to a phenomenon known as the ‘Illusion of Explanatory Depth’, in  
18 which people believe that they understand the world in detail, but in reality their  
19 understanding is superficial (Rozenblit & Keil, 2002). Such an illusion of understanding may  
20 be brought about because individuals will mistake familiarity with a situation for an  
21 understanding of how it works (Stafford, 2007). It was apparent that the junior tennis players’  
22 awareness of their own knowledge was influenced by this illusion, with the players’  
23 familiarity with the tennis world (from the media and their identity as junior tennis players at  
24 a high-performance center) leading them to believe that they already possessed an in-depth  
25 knowledge of what it was like to compete on the senior tour and to make the JST.

1           The provision of information and insight into a new sporting environment, in  
2 combination with a sense of readiness to cope with it, was reported to boost the participants'  
3 self-efficacy in the manner predicted by Bandura and colleagues. More specifically,  
4 observational learning (seeing how someone else had gone through the transition), gave the  
5 participants confidence that it was an achievable target, and that they could also manage the  
6 process (Bandura 1965, 1997; Rosenthal & Bandura, 1978). Finally, consistent with the  
7 athletic career transition model (Stambulova, 2003) this study demonstrates that providing  
8 young athletes with coping resources such as knowledge, skills, and informational support as  
9 part of a transition preparation program facilitates their perception of readiness to cope with  
10 transition. Whilst it is not possible from the current study to examine the effect of the  
11 intervention on success at transition, these athletes should be equipped with resources to  
12 enable them to feel more confident in their ability to manage the transition demands, and  
13 thereby avoid a crisis transition. Furthermore, it has been suggested that the higher the  
14 individual's perceived efficacy to fulfill occupational roles, the better they prepare  
15 themselves for their career and the greater their staying power in challenging career pursuits  
16 (Bandura, Barbarabelli, Caprara, & Pastorelli, 2001), with clear parallels with the situation  
17 under investigation here.

18           In the light of the current research findings, the provision of transition intervention  
19 programs is important, not just for the transition out of sport, but also for optimizing the  
20 within-career transition process up to senior level. In professional and Olympic sports,  
21 preparation for life after sport has historically not been considered a good use of scarce  
22 resources (Anderson & Morris, 2000). This study builds upon existing evidence (e.g., Morris  
23 et al., 2015; 2016) suggesting that time spent during junior participation to take a whole  
24 person approach to young athletes' development can add considerable value (Wylleman et

1 al., 2013). Awareness of the practical benefit is increasing and should continue to be  
2 promoted by both governing bodies and individual academies.

### 3 **Limitations, Reflections, and Future Research**

4         One limitation of the current study is its lack of assessment of residual effects. It is  
5 therefore not certain that the positive gains in terms of knowledge and readiness to cope with  
6 the transition would translate into an adaptation of behavior, or an increased chance of  
7 successful navigation of the transition to senior level. Consequently, there is a need for  
8 research to examine whether the benefits suggested in this study are sustained, once an  
9 athlete reaches the junior-senior transition. Some of the participants in the current study are a  
10 few years away from actually making the transition. However, the timing of this kind of  
11 education is important, given that many young tennis players begin playing senior  
12 tournaments many years before they can no longer play junior events.

13         Secondly, whilst this is a valuable first contribution to the literature, as already  
14 highlighted, further research should draw upon a more rigorous experimental design. The low  
15 Cronbach's alpha coefficient for the Supports subscale of the TCQ administered pre-  
16 intervention, the design limitations and the small number of participants here, mean the  
17 quantitative results should be interpreted with some caution. The authors have placed  
18 emphasis on the perceived value of the intervention, as determined by the participants  
19 (Hrycaiko & Martin, 1996), and whilst social validation is important in this context, there is  
20 also the possibility that the results and responses were due to other variables, as opposed to  
21 the administration of the intervention. Finally, the dual-role of the primary researcher and  
22 program leader should be noted, given her position as the sport psychologist for the tennis  
23 academy at which the intervention took place. As a result, the participants were familiar (and  
24 therefore comfortable) with the presence of the first author, and there was no additional sport

1 psychology support during the intervention. The fact that she delivered the intervention and  
2 collected the data may be considered a limitation due to potential social desirability effects.

3 In the applied context, the implementation of an intervention program of this kind  
4 presents both challenges and opportunities. More specifically, the investment of time and  
5 resources required by the first author to develop the program in question was significant and  
6 it would therefore be expensive to replicate. Equally, there is the potential for significant  
7 beneficial impact because preparation can be enhanced beyond what is likely to be available  
8 at academies.

9 National governing bodies should therefore be encouraged to provide the content of  
10 this study to centers who work with athletes approaching the JST. In this context, it is  
11 noteworthy that the participating athletes particularly enjoyed the opportunity to hear directly  
12 from those they look up to in their sport and that they were motivated to listen. However,  
13 their feedback underlined that the delivery of a such program should be supported by suitably  
14 qualified sport scientists who are able to help young athletes interpret the information  
15 provided and to develop the appropriate coping skills. Indeed, the authors feel that athletes  
16 would also benefit from one-to-one support during the intervention, such that coping can be  
17 supported at an individual level. Suitable participants should also be carefully selected: the  
18 athletes participating here were part of an elite training program and therefore were already  
19 immersed in their sport at a high level, with significant support available. Those with less  
20 expert support may easily feel overwhelmed. Finally, the current study highlights that  
21 sporting organizations should seek to foster better relationships between junior and senior  
22 athletes, providing clear pathways for junior athletes which enable them to model appropriate  
23 professional behaviors, to become gradually exposed to the demands of senior sport and to  
24 learn from observing and interacting with senior peers.

25 **Conclusion**



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1 Table 1.

2 *Content of the within-career transition intervention program*

<b>Week number</b>	<b>Topic</b>	<b>Content of session</b>
<b>1</b>	Baseline assessment and introduction to the junior-to-senior transition	<ul style="list-style-type: none"> <li>• Exploring the path of current senior players through the rankings from junior to senior.</li> <li>• Video: Role models discuss their transition from junior to senior.</li> <li>• How the senior tour works, what tournaments there are, ranking points.</li> <li>• Identify questions for senior players/ former players (now coaches) about the transition.</li> </ul>
<b>2</b>	Performance and lifestyle adjustments	<ul style="list-style-type: none"> <li>• Videos: Lifestyle of senior player, travelling, diet, financial considerations, performance differences between junior and senior level.</li> <li>• Participants complete performance profile of lifestyle and performance adjustments.</li> <li>• Goal-setting.</li> </ul>
<b>3</b>	Mental skills	<ul style="list-style-type: none"> <li>• Videos: Mental skills at senior level.</li> <li>• Discussion: Progress of current senior players' careers, mental skills, and adjustment to the demands of senior tennis.</li> </ul>
<b>4</b>	Professional behaviors	<ul style="list-style-type: none"> <li>• Videos: Professional behaviors, match preparation, match reflection.</li> <li>• Discussion and planning of match preparation.</li> </ul>
<b>5</b>	Independence/responsibility	<ul style="list-style-type: none"> <li>• Videos: Independence on tour, responsibility.</li> <li>• Discussion: Identifying opportunities to show greater independence.</li> </ul>
<b>6</b>	Scheduling of tournaments	<ul style="list-style-type: none"> <li>• Videos: Scheduling tournaments and scheduling tips, tournament planning and training blocks.</li> </ul>
<b>7</b>	Transition preparation	<ul style="list-style-type: none"> <li>• Videos: Transition preparation experiences and tips.</li> <li>• Discussion: What can I do to prepare now?</li> <li>• Goal setting.</li> </ul>
<b>8</b>	Setbacks	<ul style="list-style-type: none"> <li>• Videos: Setbacks on tour, coping strategies.</li> <li>• Discussion: Coping with setbacks, support structures.</li> </ul>
<b>9</b>	Commitment and lifestyle balancing	<ul style="list-style-type: none"> <li>• Videos: Lifestyle, sacrifices.</li> <li>• Discuss commitment, balancing academic, athletic and social development.</li> </ul>
<b>10</b>	Stages of the transition	<ul style="list-style-type: none"> <li>• Videos: Experience of the phases of the JST, life of a player ranked 300.</li> <li>• Discuss transition progress.</li> <li>• Goal setting.</li> </ul>

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 4 *Note.* Each session concluded with participant reflections on the material covered. Week  
 5 numbers two to 10 began with a review and discussion of participant reflections, participants'  
 6 diary reflections and any discussions or interactions they had had with current and former  
 7 senior players since the previous session.

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1 Table 2

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3 *Mean athletic identity, knowledge for the transition, and readiness to cope with transition*  
 4 *across the three assessment points (n=7).*

	Time 1 (SD)	Time 2 (SD)	Time 3 (SD)	
Athletic identity	38.57 (4.24)	38.43 (4.28)	38.43 (5.13)	6
Knowledge	72.96 (17.15)	113.84 (24.06)	122.34 (20.47)	7
Readiness: Total	106.57 (17.14)	108.43 (20.38)	120 (21.94)	
Readiness: Situation	22.71 (3.15)	24.14 (4.98)	27.71 (5.15)	8
Readiness: Self	29.0 (7.66)	29.57 (6.70)	32.71 (6.82)	9
Readiness: Supports	22.57 (3.69)	20.86 (3.08)	23.0 (3.32)	10
Readiness: Strategies	32.29 (6.16)	33.86 (7.80)	36.58 (8.16)	11

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