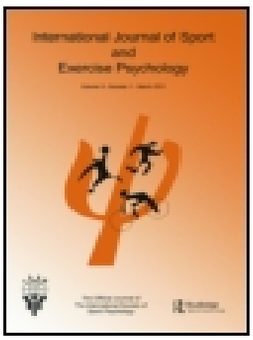

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REVIEW

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Factors contributing to the quality of the junior-to-senior transition in Greek athletes

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ABSTRACT

The aim of this study was to investigate which factors contribute to the quality of the junior-to-senior transition (JST) which includes adjustment to senior level, sport and life satisfaction in Greek athletes. The sample consisted of 177 aspiring young Greek athletes who were in the process of JST. Participants completed a Greek version of the Transition Monitoring Survey (TMS) developed by Stambulova et al. (Stambulova, N., Franck, A., & Weibull, F. (2012). Assessment of the transition from junior-to-senior sports in Swedish athletes. *International Journal of Sport and Exercise Psychology*, *10*(2), 79–95). Multiple regressions were used to assess how key factors related to the JST contribute to the adjustment of athletes to senior level in sport, to their sport and life satisfaction. Results showed that personal resources ($p < .0001$), environmental support ($p = .008$) and transition demands ($p = .02$) were the strongest predictors of adjustment to senior level in sport. To facilitate the JST process, special attention needs to be given to the development of personal resources prior to the JST. Given the significant role demands play in adjustment, an environment which adopts an approach of "supported challenge" can help athletes be better prepared for the JST and facilitate progression towards senior level.

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Career transitions; Transition Monitoring Survey; talent development

Introduction

There has been a significant research interest in the journey that athletes take to reach elite status. This has led to the development of stage models, which describe the developmental phases that athletes' progress through to reach elite level (e.g., Bloom, 1985). Interestingly, while recent evidence suggests a more individualised approach to the development pathway (Collins & MacNamara, 2012), it appears that transition periods are critical in influencing the subsequent direction of athlete progression and growth (e.g., accelerated, stalled or dropped out). This appears to be particularly true for the

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Junior-to-Senior Transition (JST), where the biggest proportion of athletes remain stagnant or drop out (e.g., Johnson et al., 2008; Vanden Auweele et al., 2004).

The JST usually takes place during adolescence; however, it is difficult to specify the exact period due to individual, gender and sport differences (Stambulova, 2009; Stambulova & Ryba, 2014). JST has also been linked with the transition from development to mastery stage (Wylleman, 2019) or from specialisation to investment years (Côté et al., 2007). Athletes competing in individual sports initiate the JST process when they start or are about to start participating in senior competitions, while team sports athletes start the process of JST when they begin or are about to begin practising and playing with a senior team (Stambulova, 2009). Throughout this period, it is important to recognise that athletes face a variety of demands and challenges across their sporting, psychological, psychosocial and academic/vocational development (Franck et al., 2018; Stambulova et al., 2020; Wylleman et al., 2013; Wylleman, 2019).

While a review of the athletic career research to date is beyond the scope of this paper, Stambulova et al. (2020) have recently provided a detailed overview of the evolution of this body of research incorporating the major conceptualisations established within career transitions including the JST. This work highlighted a framework (Franck et al., 2018) that integrates the holistic athletic career model (Wylleman et al., 2013), the athletic career transition model (Stambulova, 2003) and the ecological perspective (Henriksen et al., 2010). The review also outlines specific phases that are important within the process of the JST: orientation, adaptation and stabilisation (Stambulova et al., 2017). The nature of the JST in athlete career development is crucial because this is often a decisive transition for aspiring athletes to reach elite level (Stambulova, 2009). For example, research has shown that many athletes do not cope well with the transition, either staying static, moving to recreational sport, or dropping out, while a smaller proportion of athletes are able to cope well and successfully continue to the higher levels of competition (Stambulova et al., 2009). Concerning the nature and outcome of the JST, the context in which the JST takes place also plays an important role as it may vary depending on the purpose, structure and culture where the transition takes place (Henriksen et al., 2018).

The JST in the Greek context

The majority of research examining the JST utilising the Transition Monitoring Survey (TMS) has been carried out in Scandinavian countries. Given the need to understand the JST across a variety of contexts, particularly those that are culturally different to Scandinavian settings, this study focuses on the sport context within Greece, specifically Athens. Nearly 50% of the population of Greece lives in the metropolitan area of Athens (Hellenic Statistical Authority, n.d.). As such, this particular environment is highly competitive and has limited spaces at elite senior level, making the JST especially difficult. A common pathway for the development of young talent is to start competing at senior level in the regional leagues within the metropolitan area of Athens. This enables promising athletes to "test the water" and develop in a competitive adult environment before transitioning to elite level. For instance, it is common for a young talented athlete (e.g., 16–17 years old) to be part of the senior team competing in a regional or semi-professional league in Athens. In this situation, for example, the athlete would have to cope with the demands of balancing school and sport while competing

against experienced opponents. This competitive environment is often seen as an "incubator" for talented athletes enabling them to be better prepared for competing at elite (senior) level. As outlined in the career transition model, these types of demands can lead to different outcomes (e.g., successful transition or crisis transition) depending on the personal resources of the athletes, environmental support and nature of the barriers that exist (Stambulova, 2009).

The most popular example of this unconventional route to elite senior level is Giannis Antetokounmpo, a basketball player who made the transition from a semi-professional league in Greece directly to the NBA. More specifically, at the ages of 16–17, he competed in the semi-professional Greek B Basket League (third division) during the 2011–2012 season and in the 2012–2013 season in the Greek A2 League, Greece's second division. After the completion of the league, he officially made himself eligible for the 2013 National Basketball Association (NBA) draft, the highest standard of elite basketball in the world. In the 2013 draft, he was the 15th overall pick allowing him to make the transition to elite senior level and in 2019 and 2020, he was awarded NBA "most valuable player" and "defensive player of the year" in 2020.

This unconventional route is common in the Greek context, especially in the area of Athens due to the highly competitive nature of the regional and semi-professional adult leagues. Those leagues consist of a mixture of talented and experienced athletes with previous elite successes creating an environment which has been shown to prepare young athletes for higher levels of competition in Greece as well as the transition to elite level. This suggests that in a Greek context, there may be unique and heightened importance of regional level competition structures for supporting the JST and elite athlete development.

Theoretical frameworks

This study is based on two theoretical frameworks that have guided the "within career transitions in sport" research. First, the athletic career transition model (Stambulova, 2003, 2009) describes and explains the transition process, factors involved within the process, and its outcomes. In addition, the athletic career transition model was the basis for the development of the TMS (Stambulova et al., 2012). Second, the holistic athletic career model (Wylleman et al., 2013) provides an insight into the athletes' development, describing the "whole-person" approach.

Stambulova's (2003, 2009) athletic career transition model describes this transition process, outlining the need for athletes to cope with a set of transition demands. The nature of coping strategies employed, and the balance between resources and barriers predict the transition outcomes. Resources that facilitate a successful transition can be both internal (e.g., personal characteristics) and external (e.g., social support). Barriers include the internal (e.g., low confidence) or external (e.g., lack of financial support) factors that hinder the transition process. Managing to cope effectively leads to a successful transition, while on the other hand not managing to cope effectively through low resources or substantial barriers can lead to a crisis transition. The potential outcomes of a crisis transition are either a delayed successful transition (under the condition of an effective intervention) or an unsuccessful transition followed by negative consequences of ineffective coping (e.g., premature dropout or compromised mental health).

The complex and multi-faceted nature of the challenges faced by athletes during the JST is highlighted by the holistic athletic career model (Wylleman, 2019; Wylleman et al., 2013). The holistic athletic career model suggests that the nature of the athletic development is multidimensional and is influenced by other factors in athletes' lives: psychological, psychosocial, academic–vocational, financial and legal. Those different factors interweave and as such, changes in one can cause subsequent changes in others. Given the multifactorial nature of potential demands, it is crucial that athletes have effective coping mechanisms to be successful. It has been identified in the literature that both personal resources (e.g., psychological skills and attributes) and external resources (Hayman et al., 2014; MacNamara & Collins, 2010; Stambulova et al., 2012) are among the key factors that can facilitate a successful JST.

Factors contributing to the JST quality

Research to date has shown that in general athletes' experience multiple mental and physical challenges during the JST such as higher standards in training and competition and social adjustment (e.g., Stambulova et al., 2017) and often find it difficult to balance academic and sport demands (e.g., Wylleman & Reints, 2010). As such, internal and external resources are required to help them cope with the JST successfully (Baron-Thiene & Alfermann, 2015). To facilitate a successful transition, psychological skills and attitudes (e.g., problem-solving, self-control, acceptance of responsibility, self-reflection, determination, commitment, motivation) have been suggested to help athletes effectively cope with the demands and barriers of the JST (Finn & McKenna, 2010; Hollings et al., 2014; MacNamara & Collins, 2010). More specifically, personal resources were strongly associated with perceived degree of adjustment to senior level and with sport satisfaction (Stambulova et al., 2012). Recent studies showed that high levels of motivation contribute to the adjustment of athletes during the JST (Franck et al., 2018; Morris et al., 2017). Additionally, athletic identity has been suggested to be strongly linked with the outcome of the JST by encouraging athletes to prioritise sport and devote their time and efforts on sport development (Franck et al., 2018; Stambulova et al., 2015). Pummell and Lavallee (2019) evaluated how an intervention programme consisted of informational support and use of role models could be used to aid towards the preparation for the JST.

In relation to external resources, it has been highlighted that individualised social support from coaches and family can facilitate a successful transition (Hayman et al., 2014; Pummell et al., 2008). However, the nature of this support is crucial because it can also create stress in some cases (Morris et al., 2017). Moreover, external barriers such as unstable financial support, inadequate support and overly high expectations of others may become apparent during the JST. Therefore, athletes need to use coping strategies to overcome the challenges of the JST. For example, self-control, problem-solving and/or adopting a hard work ethic focusing on achieving goals (Finn & McKenna, 2010).

Summary and objective

There have been calls for further research to focus on increasing our understanding across different cultural contexts (e.g., Franck et al., 2018; Ryba et al., 2013; Stambulova et al.,

2012). More specifically, existing research has enhanced our understanding regarding within career transitions (e.g., Ryba & Stambulova, 2013; Stambulova & Ryba, 2013); however, it is difficult to be analogous with the ever-changing world of sport. Recent work so far that has investigated the experiences of larger cohorts of Swedish athletes during the JST has utilised the TMS which has been recommended for use more broadly (e.g., Franck et al., 2016, 2018; Stambulova et al., 2012). Franck et al. (2016, 2018) endorse further work to strengthen our understanding across different contexts (e.g., national culture, sport culture, education systems) using quantitative methodology. Therefore, following the existing calls and suggestions from researchers, this study focused on investigating the JST in Greek sport, specifically the highly competitive regional sport structure of Athens. As such, the aim of the study was to investigate which factors contribute to the quality of the JST in Greek athletes, as measured by their perceived degree of adjustment to the senior level and their sport and life satisfaction.

Methodology

Design

The study has a quantitative cross-sectional design and used the TMS (Greek version) as the main instrument. The design made it possible to examine JST experiences of talented athletes residing in Athens (Greece).

Participants

One hundred and seventy-seven athletes aged between 16 and 22 years old ($M = 17.89$, $SD = 2.04$) participated in this study. Of those, 110 were male and 67 were female. Participants were recruited from different sport clubs or sport schools in Athens (Greece). All athletes fulfilled criteria to be considered within the JST by attending training sessions and/or taking part in matches or competitions at senior level (Stambulova, 2009). When completing the TMS, participants were in the process of the JST. All participants were considered to be "talented" or aspiring to elite level and selected onto a recognised "pathway trajectory" from which elite status can be reached. All participants were recruited from clubs recommended by regional sport confederations, and/or attended elite sport schools. Forty-five competed in an individual sport while 132 competed in a team sport. Sports included in the study were the following: football (64), athletics (8), basketball (28), volleyball (22), handball (18), martial arts (12), gymnastics (12), tennis (6) and swimming (7).

Instrument and translation

The TMS was developed by Stambulova et al. (2012) and was based on career development/transition frameworks (Wylleman & Lavallee, 2004; Wylleman et al., 2013; Stambulova, 2003, 2009) and previous Swedish qualitative research on the JST (e.g., Alge, 2008; Franck, 2009). The first part of the survey included a set of questions about the personal and athletic background (e.g., age, gender, type of sport, motivation etc.). Additionally,

participants selected their level of competition between regional, national or international level. Athletes specified when they started to take part in senior level and identified the number of training hours per week.

The second part included questions about the participants' current situation in sport and life and examined the athletes' perception of different spheres of sport and life in divided into two double scales. The first one included athletes' spheres of life such as sport, studies, work, family, friends, romantic interests. Participants assessed both the current importance of those aspects and their current satisfaction. In the second double scale, participants assessed the importance of various aspects of their sport (practice, competitions/games, recovery, relationships) and their satisfaction with these aspects within sport. Both subscales were 10-point ranging from 1, very low, to 10, very high.

The third part, the transition process, contained seven subscales exploring the transition process (demands, coping strategies, support, pressure, personal resources, stress, need for additional help and adjustment to the senior level). The demands' subscale included 17 items related to sport practice (e.g., tactical skills, competitions/games, recovery, relationships/communication and lifestyle). Participants evaluated how much they need to improve in these areas to adjust to senior level in a 10-point scale ranging from 1, no need, to 10, very strong need. The subscale on coping strategies included 21 coping strategies such as "I try to think positive in any situation", "I plan my development in sport". Participants assessed how much they are currently utilising coping strategies in a 10-point scale from 1, not at all, to 10, use it very much. The subscale of environmental support included the degree of potential sources of support or pressure (e.g., coaches, teammates) and conditions for practice and team climate in a 10-point scale where 1, very little or poor, to 10, very much or good. Personal resources' subscale included, for example, "self-expectations", "technical skills", "physical condition" in a 10-point scale ranging from 1, very low or poor, to 10, very high or good. Perceived stress and perceived need for additional support were also evaluated by the participants for the following areas: practice, competitions and games, recovery, rehabilitation, relationships and combining sport with other activities in a 10-point scale (0 = very low, 10 = very high). Finally, participants were asked to identify their perceived degree of adjustment using a scale from 0 to 100%, where 0, not at all adjusted, and 100% completely adjusted.

The TMS has been used in previous research (Stambulova et al., 2012) and Cronbach's alphas for the TMS subscales ranged from 0.57 to 0.91; with 8 of the 11 alpha values over 0.70. The alpha values for three subscales in the Current Situation in Sport and Life part were lower than satisfactory; however, in the Transition Process section, all alpha values were satisfactory. In the current study, the Cronbach's alphas were more than 0.76 which is considered satisfactory for all categories of TMS.

For the purpose of this study, the TMS was translated into Greek following the guidelines for culturally competent research in sport psychology (Ryba et al., 2013) and the appropriate translation methodology (Ægisdóttir et al., 2008). Initially, the independent translation was completed by two researchers who were native speakers of the Greek language, born and raised in Greece. First, the researchers documented the comparisons of the translations and agreed on the best translation and rewrote the items according to the grammatical rules and structure of the Greek language. The TMS was then back-

translated independently into English then compared to the original English version and the back-translated version. Finally, necessary changes were made until a satisfactory version was produced.

Procedure

The first author received ethical approval from the University's Research Ethics and Governance Committee. A recruitment e-mail accompanied with an information sheet about the study was sent to sport clubs (recommended by the regional confederations) and sport schools. After obtaining permission from the sport clubs and sport schools the potential participants were provided with an information sheet. The participants were informed that it is voluntary to take part in the study, were also informed about confidentiality and data protection. Consent and/or parental consent when necessary was gained from every participant agreed to take part in the study. The TMS was administrated in quiet places (e.g., training facilities of schools or clubs). Staff members of the organisations assisted the first author with the data collection and clarification was provided to ensure that all the questions were understood. Participants were encouraged to complete the questionnaire with honesty, and it was highlighted that all their answers would remain anonymous.

Data analysis

The data were inputted and analysed via IBM SPSS Statistics 23. First, descriptive statistics were provided to give an overview of the athletes' perceptions regarding the JST in sport for the demographics of the participants and for each TMS item. More specifically, descriptive statistics were conducted for each of the TMS subscales and Cronbach's alpha values were calculated. Individual items within each factor were calculated to provide a more in-depth representation of athletes' perceptions (identifying the highest and lowest mean scores), a method that has been recommended in previous literature (Martindale et al., 2010; Thomas et al., 2020). Independent *t*-tests were also conducted to identify any potential differences between individual and team sport athletes in relation to the main subscales of the TMS. Subsequently, in line with the methods used by Stambulova et al. (2012) to identify the factors that contribute to the adjustment of athletes to senior level in sport, to their sport and life satisfaction three sets of multiple regressions were used.

Prior to interpreting the results of the multiple regression analysis, several assumptions were evaluated. According to the literature, if the sample is bigger than $104 + 8\,m$ (where m = number of the predictors used for the hierarchical regressions); the sample is considered to be satisfactory (Green, 1991). Researchers have also suggested that a ratio of 10–1 is essential when more than six predictors are used in a multiple regression model (Miller & Kunce, 1973). Therefore, data collected from 177 participants were considered appropriate to conduct hierarchical multiple regressions.

Similar to Stambulova et al. (2012), three multiple regressions were used to assess the quality of the JST in Greek athletes as it has been suggested that adjustment, sport and life satisfaction are all interrelated and contribute towards a successful JST. As such, it was deemed necessary to choose these three criterion variables to assess the quality of the

JST. The rationale for this decision was also based on recent findings from the literature showing that a sport/life balance is a key factor (Franck & Stambulova, 2019) and that a whole-person approach is necessary as multiple transitions occur simultaneously at different levels during the period of the JST (Wylleman, 2019; Wylleman et al., 2013). In the first multiple regression, the perceived degree of adjustment to the senior level in sport was the criterion variable and transition demands, coping strategies, environmental support, personal resources, perceived stress, perceived need for additional help/support were the predictor variables. In the second multiple regression, sport satisfaction was the criterion variable and coping strategies, environmental support, personal resources, perceived stress, perceived need for additional help/support, perceived degree of adjustment to the senior level were entered in the model as predictor variables. In the last multiple regression analysis, the variables used to predict life satisfaction were importance of different aspects of sport, sport satisfaction, perceived stress, perceived degree of adjustment to the senior level in sport.

Results

Researchers checked the necessary assumptions prior to conducting the multiple regressions researchers as recommended in the literature (Osborne & Waters, 2002). Visual inspection of histograms, the normal probability plot of standardised residuals indicated that each variable used in all the three regression models was normally distributed and free from univariate outliers. As such, the assumptions of normality, linearity and homoscedasticity of residuals were met. It has been suggested that multicollinearity is severe only when the variance inflation factors (VIF) are more than 10 (Neter et al., 1996). In the data of the current study, VIFs below 2 indicated that multicollinearity would not interfere with the interpretation of the outcome of the multiple regression analysis.

Table 1 gives a summary of the means, standard deviation and Cronbach alpha for the subscales of the data. As seen in Table 1, all Cronbach's alphas for the TMS subscales were over 0.7 indicating a high internal consistency (Santos, 1999). The scale (1–10) was divided into the following four categories "below 2.5 = very low, 2.5–4.9 = low, 5–7.5 = moderate,

Table 1. Means (*M*), standard deviations (SD) and Cronbach's alpha for the variables of TMS.

Variables	*M*	SD	*α*
Transition process			
Transition demands	6.3	2.1	0.8
Coping strategies	7.2	1	0.76
Environmental support	7.5	1.3	0.77
Environmental pressure	5.9	1.8	0.76
Personal resources	7.7	1	0.76
Perceived degree of adjustment	7.7	1.2	0.77
Perceived stress	5.6	1.9	0.77
Perceived need for additional help	5.7	2	0.79
Current situation in sport and life			
Importance of different spheres of life	8	1.2	0.78
Satisfaction with different spheres of life	7.8	1.1	0.77
Importance of different aspects of sport	8	1.5	0.77
Satisfaction with different aspects of sport	7.7	1.5	0.76

above 7.5 = high" to facilitate the interpretation of the findings and allow the reader to have a more contextualised understanding of the mean scores.

The biggest demands of the participants included the "preparation for a competition/game" ($M = 7.5$, SD = 2.4), "combining sport with school/work" ($M = 7.5$, SD = 2.1), and "relationship/communication with the coach" ($M = 7.5$, SD = 2.5). The athletes reported that they mostly used the following coping strategies to deal with the demands and the challenges of the JST: "I have clear goals in sport life" ($M = 8.2$, SD = 1.9), "I try to think positive in any situation" ($M = 8.1$, SD = 1.5), "I try to give 100% in each training and competition" ($M = 8.1$, SD = 1.7). On the other hand, athletes stated that they used the following coping strategies less in comparison to other strategies: "being in a difficulty I search for help of other people" ($M = 5.6$, SD = 2.4), "I try to learn from others" ($M = 6.3$, SD = 2.6) and "being in a stressful situation I express my negative feelings" ($M = 6.5$, SD = 2).

The participants were highly motivated ($M = 8$, SD = 1.4) to make a successful transition to elite senior level in their respective sport. The most common personal resources amongst the athletes were "physical condition" ($M = 8.4$, SD = 1.3), "self-expectations" ($M = 8.3$, SD = 1.5), and "mental skills" ($M = 8.3$, SD = 1.5). In addition, athletes reported that they receive high levels of support from their teammates ($M = 8.2$, SD = 1.6) and family ($M = 8.1$, SD = 2). Notably, they reported that they receive less support from their club/federation ($M = 6.8$, SD = 2) compared to the support they receive from their close environment.

To compare the experiences between individual and team sport athletes, independent *t*-tests were conducted. Comparisons revealed statistically significant differences in only two subscales of the TMS: demands and perceived stress. More specifically, athletes competing in team sports perceived higher demands ($M = 6.5$, SD = 2) compared to individual sport athletes ($M = 5.7$, SD = 2.3), $t(175) = -1.96$, $p = .05$; team sport athletes perceived higher levels of stress ($M = 5.8$, SD = 2) in comparison to individual sport athletes ($M = 5.2$, SD = 1.3), $t(109.234) = -2.187$, $p = .03$.

Predictors of adjustment to senior level in sport

The regression model revealed a significant relationship between "perceived degree of adjustment to the senior level in sport" and the predictors $R^2 = 0.55$, $F(6, 170) = 35.7$, $p < .0001$. "Personal resources" was the strongest predictor of perceived degree of adjustment to senior level ($\beta = 0.68$, $p < .0001$). "Environmental support" ($\beta = 2.6$, $p = .008$) and "transition demands" ($\beta = .13$, $p = .02$) were also positive predictors of adjustment to senior level in sport. In addition, "perceived need for additional help/support" ($\beta = -0.19$, $p = .004$) was a negative predictor of adjustment. This set of predictors accounted for 54.2% of the athletes' perceived degree of adjustment to the senior level (Table 2).

Predictors of sport satisfaction

In the second multiple regression, the model showed a significant relationship between sport satisfaction and the predictors $R^2 = 0.35$, $F(6, 170) = 15.7$, $p < .0001$. "Environmental support" ($\beta = 0.29$, $p < .0001$) was a strong positive predictor of sport satisfaction. "Coping strategies" ($\beta = 0.23$, $p = .005$) and "perceived degree of adjustment to senior level in

Table 2. Multiple regressions for contribution of the transition variables to athletes' perceived degree of adjustment to senior level.

Predictors of adjustment to senior level in sport	β	t	p
Transition demands	0.13	0.618	.02
Coping strategies	−0.11	0.073	.09
Environmental support	0.17	2.05	.008
Personal resources	0.68	8.92	<.0001
Perceived stress	0.07	1.05	.24
Perceived need for additional help/support	−0.19	−1.52	.004

Note. R^2 adjusted = 54.2%

sport" ($\beta = 0.18$, $p = .05$) were also positive predictors of satisfaction in sport. This set of predictors accounted for 33.4% of the athletes' satisfaction with different aspects of sport (Table 3).

Predictors of life satisfaction

In the last set of the multiple regressions, a significant relationship between the criterion variable life satisfaction and the predictors was found ($R^2 = 0.27$, $F(4, 170) = 16.1$, $p < .0001$). "Satisfaction with different aspects of sport" ($\beta = 0.31$, $p < .001$) was a strong positive predictor of life satisfaction. Additionally, "importance of different aspects of sport" ($\beta = 0.17$, $p = 0.05$) was a positive predictor of life satisfaction. This set of predictors accounted for 25.8% of athletes' satisfaction with different spheres of life (Table 4).

Discussion

The aim of this study was to investigate which factors contribute to the quality of the JST in Greek athletes, as measured by their perceived degree of adjustment to the senior level and their sport and life satisfaction. The athletes who participated in this study perceived their sport as very important and they were highly motivated to make a successful transition to senior level in their respective sport. The descriptive statistics revealed the key demands (preparation, dual career and communication with the coach), personal resources (physical and mental skills), environmental support (teammates and family) and coping strategies (active and solution-focused) interplayed in the participants' JST process. The multiple regressions showed that personal resources, environmental support and demands were associated with adjustment to senior level; environment support, coping strategies and perceived degree of adjustment to senior level in sport

Table 3. Multiple regressions for contribution of the transition variables to athletes' sport satisfaction.

Predictors of sport Satisfaction	β	t	P
Coping strategies	0.23	2.8	.005
Environmental support	0.29	3.7	<.0001
Personal resources	−0.01	−0.15	.88
Perceived stress	0.13	1.6	.1
Perceived need for additional help/support	−0.04	−0.6	.54
Perceived degree of adjustment	0.18	1.9	.05

Note. R^2 adjusted = 33.4%.

Table 4. Multiple regressions for contribution of the transition variables to athletes' life satisfaction.

Predictors of life satisfaction	β	t	p
Importance of different aspects of sport	0.17	1.9	.05
Satisfaction with different aspects of sport	0.31	3.3	.001
Perceived stress	0.001	0.007	.99
Perceived degree of adjustment	0.12	1.7	.08

Note. R^2 adjusted = 25.8%.

were linked with sport satisfaction; and importance of different aspects of sport and sport satisfaction were associated with life satisfaction.

The differences between individual and team sport athletes in relation to their perceived demands and stress are of interest as they may be related to further disparities between sports. Current findings showed that athletes participants in team sports perceived higher levels of demands and stress. As such, the nature of the environment is important because in football, for example, players are expected to move from a caring and nurturing environment to a more harsh and outcome-oriented environment at the senior level (Richardson et al., 2012). This reality coupled with the lack of exposure to elite senior environments (as junior athletes) may cause difficulties to their adjustment at this level (Bruner et al., 2008). Considering that there are higher demands within such an environment, more resources and support would be necessary for the athletes. Therefore, gradually introducing players to the senior squad and educating them regarding the difficulties of the transition would help them build personal resources and mental skills to manage demands and seek support from others (Morris et al., 2015, 2017).

Empirical findings in relation to theoretical frameworks

The athletic career transition model (Stambulova, 2003, 2009) states that the outcome of the transition (i.e., positive or crisis transition) is determined by the coping strategies used by the athletes and the dynamic balance between the barriers and the resources. The findings of the current study reinforce this model as personal resources, environmental support and demands were predictive of adjustment to senior level while coping strategies and environmental support were predictive of sport satisfaction. These findings highlight the importance of this fine balance between those key factors and emphasises that quality preparation needs to be in place to facilitate progression during the JST.

Demands

The most novel result to emerge from the data was that demands were significantly associated with adjustment to senior level adding to our existing knowledge in the literature examining the JST. It has been identified that transitions include a number of demands that athletes need to cope with in order to adjust to the next phase of their career, in our case senior level (Alfermann & Stambulova, 2007). Those demands may include goals or external requirements that the athlete wants to achieve during that phase. For example, balancing sport goals with other life goals and reorganising their lifestyle; searching for their individual pathway in sport; coping with pressure of selection or de-selection; winning prestige among peers and coping with potential relationship problems (Stambulova, 2009). To our knowledge, the current study is the first to provide

quantitative data supporting the beneficial role of demands in relation to adjustment. This may have important implications for the way in which coaches and sport organisations perceive and manage demands and challenges through the developmental process (Collins & MacNamara, 2012).

Demands are often also appraised by the athletes as challenges depending on the level of available resources; however, they may be perceived either as excessive or as too easy (i.e., not challenges). Therefore, ensuring that athletes are faced with structured balanced challenges appears to be necessary as part of their development process (Collins & MacNamara, 2012; Collins et al., 2016; Savage et al., 2017). Challenges can facilitate the development of personal resources and coping strategies which have been identified to be very important for the quality of the JST (e.g., Stambulova, 2003, 2009; Stambulova et al., 2012). As such, specific focus on preparing for the transition, both physically and mentally, well in advance seems sensible (Finn & McKenna, 2010; Morris et al., 2017; Pummell & Lavallee, 2019).

The results revealed that the highest demands during JST were "preparation", "balancing a dual career" and "communication with the coach". As such, it may be important to create an environment that supports athletes and enables them to develop the necessary skills and resource to deal with those demands. For instance, adopting a "supported challenge" approach could improve the quality of preparation prior to JST (Collins et al., 2016). In addition, holistic environment promoting effective communication and coherency could also help athletes to settle in the new environment, balance their dual careers and build relationships with their coach/teammates (Henriksen, 2010; Martindale et al., 2007).

Personal resources

The results revealed personal resources were a stronger predictor of adjustment than environmental support. As such, fostering the internal resources of athletes at early stages may be key. The personal resources that were rated highest in this study were physical, mental skills and self-expectations. The critical role of "personal resources" or "internal resources" in relation to adjustment during the JST has been demonstrated in the literature (Franck et al., 2018). However, a variety of personal resources (e.g., motivation, athletic identify) have been identified by researchers (Franck et al., 2016, 2018; Morris et al., 2017) which highlights the need for physical and mental preparation in advance of the JST. This preparation will allow athletes to develop a wide-ranging holistic toolbox of personal recourses to deal with the upcoming demands and challenges of the JST. As such, it appears to be of crucial importance for practitioners and talent development environments to facilitate the development of those resources. A number of approaches could be implemented for this reason such as mental skill training (e.g., Macnamara & Collins, 2013; Henriksen et al., 2011) or an intervention programme (Pummell & Lavallee, 2019). The preparation of athletes for the JST can also be facilitated by the environment in which they are developing since personal resources may be interlinked with the available external resources.

Environmental support

The importance of environmental support during the JST has been identified highlighting the necessity of this type of support (Franck et al., 2018). The findings in this study

supported this as a key factor contributing to the quality of both adjustment to senior level and also sport satisfaction. In the current study, support from teammates and family was the highest rated type of environmental support. This reinforces previous literature that recognises the crucial role of holistic support networks from peers and parents for the successful progression of athletes (Henriksen, 2010; Martindale et al., 2007; Mills et al., 2012). While support from coaches has been identified previously as an essential external resource during the JST (e.g., Bruner et al., 2008), interestingly it was not rated as highly as parents and teammates. In addition, support from club/organisation was only rated as moderate.

Leading on from this, previous literature has shown that parents can play a significant role in talent development. Positively, families can contribute to the development of key characteristics such as coping skills, independent thinking, taking ownership of their own learning (Olszewski-Kubilius, 2018), as well as providing important emotional and tangible support. Furthermore, role models particularly at the beginning of the JST can be a highly beneficial external resource for the young athletes. For example, more experienced peers can encourage them and help them to better understand of what is required at senior level (Stambulova, 2017). This valuable support from more senior athletes enables young athletes to better integrate in the environment and the lifestyle demands of competing at senior level (Pehrson et al., 2017; Pummell et al., 2008). The idea of role models has been identified in successful sport environments in Scandinavia (Henriksen, 2010) and recent findings suggest that role models can aid to the preparation for the JST facilitating a successful transition (Pummell & Lavallee, 2019). While the benefits of role modelling appear clear, it is important to recognise that related interventions may be challenging, either due to limited access (Hall et al., 2019) or the time-consuming nature of the task (Larsen et al., 2014).

Furthermore, "satisfaction with sport" and "importance of sport" were associated with "life satisfaction" highlighting the integrated nature of those factors in this population. Those findings may indicate that there is a strong athletic identity, and that life satisfaction could be over-reliant on sport satisfaction. This highlights the need to take a holistic "whole-person" approach (Wylleman, 2019; Wylleman et al., 2013). Interestingly, "combining sport with school/work" was a top demand in this study, potentially highlighting it as a positive factor for adjustment. Previous research has shown that dual-career demands can be positive for sport development and performance, as well as preparation for the future if handled supportively and with care (Pink et al., 2015). Consequently, even athletes who do not "make it" to elite level will have the opportunity to fail in a healthy way and be better equipped for transitions in other domains of their lives.

Limitations and future research

This study adopted a quantitative approach to identify the factors contributing to the quality of the JST in Greek athletes using the TMS; however, the current study has some limitations. Firstly, inclusion criteria were carefully chosen to enable us to recruit talented participants on the trajectory towards elite level. Young aspiring athletes competing at senior regional level is common in Greek context and likely to lead to senior elite level. However, since this pathway is not guaranteed, a longitudinal approach would have allowed us to follow the progression of the participants and compare

those who "made it" to elite level and those remained stagnant or dropped out. Even though the use of a heterogeneous sample is common in the area of sport psychology (e.g., Samuel & Tenenbaum, 2011), the lack of balance of representation of both genders and types of sport (individual and team sport) needs to be acknowledged. Due to potential individual differences between sports in relation to the nature of the JST even within the same country, findings need to be interpreted with caution. Nonetheless, the data of the current study provided useful information regarding the JST in Greek athletes expanding our current knowledge. However, due to the low/moderate predictive variance of the current study, further research in more cultures and environments examining the JST is still warranted.

Future studies should focus on establishing criterion-related validity of the TMS not only in the Greek language but also other languages to allow researchers to investigate the JST in different cultures. Moreover, according to the cultural praxis of athletes' careers (Stambulova & Ryba, 2013), researchers would usefully adopt an approach which places specific attention to understanding diversity within career trajectories. Cultural praxis projects will allow researchers to undertake culturally competent sport and exercise psychology research in the future (Ryba et al., 2013). Additionally, future studies need to examine more in depth any potential differences between team and individual sports. Considering the different nature of sports and their environments disparities in relation to the key characteristics of JST may exist as well. In addition, studies adopting a longitudinal methodology or evaluating the effectiveness of interventions during the JST (e.g., Pummell & Lavallee, 2019) would add significantly to our current understanding.

Conclusion

The current study investigated how key factors of the JST contribute to the athletes' quality of the transition. Personal resources, environmental support and demands were significant predictors of adjustment at senior elite level. The outcome of the JST process is influenced by experiences prior to the transition and therefore quality preparation (including clear expectations, mental skills training, challenge and physical preparation) could be used to enable athletes to be well prepared both physically and mentally. Building on previous research, the current study identified demands as a significant predictor of adjustment, and as such may potentially be a "developing" mechanism during the JST. However, careful consideration is needed, where, for example, a developmental "supported challenge" approach (e.g., gradual exposure to senior level) may facilitate the growth of useful personal resources and readiness. Environmental support was also a significant predictor of adjustment, with teammates and family rated as the strongest support in this context. As such, the availability of these types of support and improved use of role models may be beneficial. The data also highlighted the importance of taking a holistic approach in the development of athletes in this context, encouraging the development of interpersonal skills and support for dual-career engagement.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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