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ASSESSING ADOLESCENTS' APPRAISAL OF SIGNIFICANT ADULTS' GOAL-INVOLVING CRITERIA FOR JUDGING THEIR SUCCESS IN PHYSICAL EDUCATION AND SPORT SETTINGS: A MISSING LINK IN THE SOCIALIZATION PROCESS

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ABSTRACT

This study examined psychometric properties of a measure of adolescents' appraisal of criteria used for judging their sport and physical education success by their significant adults (PACEDOS). To facilitate coherent comparisons among significant adults in achievement settings, the same measure was used for the four of them (mother, father, and coach or PE teacher). Participants were 505 Spanish adolescents (M=13.85 years of age, SD = .76). Support for two dimensions, namely a task-involving criteria and ego-involving criteria, emerged across the four administrations via CFA, as well as evidence for internal consistency. Predictive validity findings suggested that the PACEDOS was distinct from perceptions of the motivational climate. Results revealed differences in gender, between athletes/non-athletes, and among the adolescents' appraisals of the four social agents' ego and task-involving criteria. Particularly, parents played a gendered role and sport leaders (coach/PE teacher) played a performative/educational role in adolescents' appraisal of the criteria used for judging their success in sport and PE contexts. The PACEDOS appeared to be a valid and reliable instrument, which allows coherent comparisons among different significant adults and it may help for understanding adolescents' sport and PE socialization.

Key Words: goal-involving criteria, adolescents, significant adults, physical education/sport, achievement motivation

RESUMEN

Este estudio analizó las propiedades psicométricas de un instrumento (PACEDOS) que mide la percepción de los adolescentes de los criterios utilizados por sus adultos significativos a la hora de juzgar el éxito de los adolescentes en el deporte y en la educación física (EF). Para facilitar comparaciones coherentes entre los adultos significativos en contextos de logro, se utilizó la misma medida para los cuatro de ellos (madre, padre y entrenador/profesorado de EF). Los participantes fueron 505 adolescentes españoles (M = 13.85 años de edad, SD = 0.76). Dos dimensiones (criterios que implican a la tarea y al ego) se confirmaron vía AFC y una consistencia interna de las cuatro medidas. Los resultados de validez predictiva sugieren que PACEDOS es distinto de la percepción del clima motivacional. Los resultados revelaron que los padres juegan un papel relativo al género y los líderes deportivos un papel performativo/educativo en la percepción de los adolescentes de los criterios utilizados por los adultos significativos para juzgar su éxito en contextos deportivos y de EF. PACEDOS es un instrumento válido y fiable que permite comparaciones coherentes entre los adultos significativos que puede ayudar a comprender la socialización de los adolescentes en el deporte y la EF.

Palabras clave: criterios de implicación de meta, adolescentes, adultos significativos, educación física/deporte, motivación de logro

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INTRODUCTION

Achievement goal theory has been extensively applied to the study of achievement motivation in the academic and athletic domains (see Duda & Whitehead, 1998; Roberts, 2001 for reviews of this literature). This theoretical model suggests that people's behaviour and cognitive and affective responses in achievement contexts are logically connected to their goal perspectives, named task and ego involvement, which relate to how people define success and judge their competence (Nicholls, 1984, 1989). From a theoretical perspective, it is suggested that the adoption of a certain goal perspective depends on individual differences in dispositional goal orientations and situational factors such as the prevailing goal structure operating in a particular setting (Ames, 1992a, 1992b; Duda, 1992; Nicholls, 1989; Roberts, 1992). Individuals' perceptions of the latter variable are referred to as the perceived motivational climate. Considerable work has been done on the motivation-related correlates of perceptions of the motivational climate and, especially goal orientations, as manifested in the physical domain. Few studies, however, have focused on the role of environmental or social factors in terms of whether individuals become more or less task- and/or ego-oriented. That is, our information is limited regarding socialization influences by which agents, who are significant in adolescents' lives, impact on the prediction of personal goal pronenesses or tendencies. Concerning these significant others, some studies have analyzed the implications of parents' personal perspectives of success and/or perceived motivational climate created by parents (e.g. Dempsey, Kimiecik, & Horn, 1993; Duda & Hom, 1993; Kimiecik, Horn, & Shurin, 1996; Roberts, Treasure, & Hall, 1994; White, Duda, & Hart, 1992; White, Kavussanu & Guest, 1998; White, Kavussanu, Tank & Wingate, 2003), while others have focused on the coach (e.g. Balaguer, Duda, Atienza & Mayo, 2002; Ntoumanis & Biddle, 1998a, 1998b; Seifriz, Duda, & Chi, 1992) or the physical education teacher (Carr & Weigand, 2002; Flores, Salguero & Marquez, 2008; Morgan & Carpenter, 2002; Papaioannou, 1994; Parish & Treasure, 2003; Todorovich & Curtner-Smith, 2002; Treasure & Roberts, 2001; Xiang & Lee, 2002).

Consistent with the work on coaching behaviours (Smith & Smoll, 1996), and the importance of perception and interpretation of reality in determining psychological and behavioural outcomes (Ames, 1992; Eccles-Parsons, 1983), the literature to date suggests that students'/athletes' personal goal orientations are more aligned with their perceptions of the achievement goal emphasis held by significant social agents than the significant others' actual goal-related behaviours or beliefs (Duda & Hom, 1993; Eccles & Harold, 1991; White et al., 2003)

The socialization process affecting boys and girls in physical activity settings is multi-faceted and dependent on the influence of a number of socializing agents (Brustad, 1992). A first attempt to simultaneously ascertain the relationship of perceptions of achievement goal emphasis held by more than one significant other to young soccer players' goal orientations was conducted by Ebbeck and Becker (1994). They found the players' degree of ego orientation to be associated with their perceptions of their parents' task and ego orientation. Players' task orientation was linked to perceived parent's task orientation, perceptions of the task-involving and ego-involving features of the climate operating on their team (as created by the coach). Ebbeck and Becker (1994, p. 360) concluded that, although "the perceived motivational climate was influential in predicting the task orientation of the players," the "perceived parent's goal orientations appear to be the dominant predictor of player's orientations." It is not possible to discern from the Ebbeck and Becker's findings, however, whether such differential predictive utility emerged due to differences in the variable being assessed (i.e., the perceived climate or situationally-emphasized goal structure versus the goal perspective deemed held by one's significant other for oneself); the significant other(s) being targeted in the two assessments (i.e., the parents or coach); and/or psychometric variability between the two questionnaires (i.e. the PMCSQ or the modified TEOSQ).

Even if we restricted our discussion to the perceived situational goal structure functioning in sport, two major problems arise. In assessing potential socialization influences, many diverse measures of perceptions of the motivational atmosphere in physical activity settings have been employed and this plethora of assessments make comparisons across significant others and achievement settings difficult (see Duda, 2001b; Duda & Whitehead, 1998). Due to the lack of a standard assessment, if differences emerge across studies, we cannot assure they are a function of the specific situation, (e.g., sport versus physical education) significant other and/or sample selected or the instrumentation utilized (Duda & Whitehead, 1998). As highlighted by Duda (2001b), another potential limitation is the employment of modified versions of goal orientation assessments to measure the sport perceived motivational climate. Instead, those versions may be assessing another construct in the physical domain different from the perceived motivational climate and become "...another piece of the puzzle in the determination of the goals operating in the social milieu" (Duda, 2001b: 146).

To date, measures found in the literature have addressed to both significant others' dispositional goal orientation (task and ego) and adolescents' perceptions of their significant others' dispositional goal orientation (task and

ego). Notwithstanding, studies have failed to examine adolescents' perceptions of the success criteria utilized by significant adults when judging their son/daughter's, athlete's, student's sport experiences (task-involving or ego-involving). These criteria are likely to permeate the different exercise settings when these agents make decisions, express intentions or behave on adolescents' actions and may affect adolescents' perception of how to define success as well as the socialization process of their goal orientations.

In this sense, the development of valid and reliable measures of such perceptions in the physical domain is important as they are assumed a part of the socialization process influencing young people's goal orientations in the sport realm. The major purpose of the present study was to examine predictors of goal orientations by a) developing a new measure (named PACEDOS) that would target toward each of the significant adults in adolescents' sport life in an attempt to assess their potential socialization influence via the same measure, and b) examining its validity and reliability. This will contribute to draw a more precise scenario of the socialization of goal orientations.

In particular, this measure analyses adolescents' perceptions of the achievement goal emphasis held by their significant social agents, specifically their perceptions of the success criteria utilized by their mother, father, coach, and physical education teacher when judging their son/daughter's, athlete's, student's sport experiences. Furthermore, in order to establish predictive validity, simple correlations are calculated to demonstrate athletes' perceptions of their coaches' success criteria is not equivalent to their perceptions of the motivational climate created by the coach. Finally, literature on goal perspectives has shown differences on dispositional goal orientations by gender and social agents' influence, thus this study also explores whether adolescents' perceptions of the success criteria by each of their significant adults differed as a function of gender, the significant other in question and sport participation (athlete/non athlete).

METHOD

Participants and procedure

Participants in this study were 505 adolescents from a Mediterranean area in Spain (n=268 females; n=237 males). 277 adolescents belonged to organized sport programs and were, at least for one year, participating in sport competitions. These participants were considered 'athletes' in the present study. In the case of the other 228 adolescents, sport participation was limited to games, the sport curriculum content in PE lessons, and/or out of school non-competitive physical and sport activity. These adolescents were classified as

'non-athletes'. The mean age of the subjects was 13.85 years ($SD = .76$) and the range was between 13 and 15 years of age.

Procedure

After receiving permission from their parents, the PE teacher of each class (in the case of non-athletes) and the coach of each team (only when considering the athletes' sample), questionnaires were administered to the adolescents in a group setting. Participants provided information on a voluntary basis and were informed that privacy was guaranteed. The first author was present when the subjects responded to the questionnaires and encouraged them to answer honestly and ask questions if they were confused with any of the items or the directions.

Measures

Perceived significant adults' criteria for judging adolescents' success in sport (PACEDOS)

Adolescents' perceptions of the criteria underlying subjective success their significant adults use concerning adolescents' involvement in sport settings were tapped via four versions of the same inventory. An 18-item questionnaire was developed by selecting items from existing personal goal orientation measures (Duda & Hom, 1993; Roberts, Treasure & Balagué, 1997). Each version of the instrument consisted of two scales measuring ego-involving (9 items) and task-involving (9 items) success criteria, with the only distinctive part of each version being the initial stem. The stem was adapted accordingly to the four significant adult's perceptions required to be measured. In the case of the athletes, three significant adults were considered ("My mother/My father/My coach thinks I am successful in sport when..."). For the non-athlete group, the significant adults were their mother, their father and their PE teacher ("My mother/My father/My PE teacher thinks I am successful in sport when..."). Responses to the items were indicated on a 5 point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Examples of the items are seen in Table 2. The questionnaire was translated into Spanish with back translation employed to check the meaning of the items.

In providing greater information regarding the validity (concurrent validity) of the PACEDOS, the 13-item version of the Task and ego orientation in sport questionnaire (TEOSQ) in Spanish was employed to examine relationships between each of the four PACEDOS measures and personal goal orientations of the four groups of adolescents (female and male athletes, and female and male non-athletes). When completing the TEOSQ, adolescents were asked to think about when they felt most successful in sport and responded to six questions

relating to ego orientation and seven to task orientation. Each item was preceded by the stem "I feel really successful in sport when..." and rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Previous research involving subjects from different cultures (Balaguer, Castillo & Tomás, 1996; Duda & Nicholls, 1992; Duda, Fox, Biddle y Armstrong, 1992; Guivernau & Duda, 1994; Li, Harmer, Chi & Vongjaturapat, 1996; Papaioannou & Duda, 1992; Rethorst & Duda, 1992) found the TEOSQ to be both valid and internally reliable.

Finally, since findings demonstrated that athletes' perceptions of their coaches' success criteria were not equivalent to their perceptions of the climate created by the coach (Ebbeck and Becker, 1994), the Spanish version of the 29-item Perceived motivational climate in sport questionnaire (PMCSQ-2) was used to establish predictive validity (Balaguer, Guivernau, Duda & Crespo, 1997). This sport specific measure is a hierarchically structured self-report tool designed to assess the perceived motivacional climate in terms of two higher order dimensions, labeled perceived task involving climate and perceived ego involving climate, and six lower order factors. Only the higher order scales were analyzed in this study since predictions stemming from goal perspective theory and the matching hypothesis are based on the task-involving and ego-involving components of the motivational climate.

The athletes responded to the stem "On this team..." and responses to the items were indicated on a 5 point scale ranging from 1 (strongly disagree) to 5 (strongly agree). An example item from the task-involving scale is "On this team, the coach believes that all of us are crucial to the success of the team". An ego-involving scale example item is "On this team, players are encouraged to outplay teammates".

In previous sport studies, the PMCSQ-2 has shown to have adequate internal reliability and factorial validity (Balaguer, Guivernau, Duda & Crespo, 1997; Newton, Duda, & Yin, 2000).

Data analyses

Factorial validity was examined by conducting Confirmatory Factor Analyses (CFA) of the four-Perceived significant adults' criteria for judging adolescents' success in sport scales because an a priori model existed. A measure of internal consistency (Cronbach's alpha coefficients) was calculated and descriptive statistics (means and standard deviations) computed for all measures assessed. Multivariate analysis of variance (MANOVA) and univariate analysis of variance (ANOVA) were performed on the measured Perceived significant adults' criteria for judging adolescents' success in sport variables to assess the statistical significance of the effect of gender, group (athletes/non

athletes and significant others (mother, father and PEteacher or coach) on the dependent variables. Simple correlations between each Perceived significant adults' criteria for judging adolescents' success in sport measure and the adolescents' personal goal orientations were calculated in order to establish concurrent validity of the instruments. Finally, predictive validity was established by simple correlations between Perceived coach's criteria for judging athletes' success in sport and their perceptions of the climate created by the coach to demonstrate that the athletes' perceptions of their coaches' success criteria is not equivalent to their perceptions of the climate created by the coach.

The stability of the underlying factor structure proposed was examined via confirmatory factor analyses using the EQS software-version 5.1 (Bentler, 1995). Maximum likelihood (ML) estimation procedure was employed to analyze the data. Although data were not multivariate normal and distribution free methods of estimation were employed, only the ML results are presented. Because methods of estimation gave the same general results, and given the sample size, ML estimation may be more accurate (Jöreskog and Sörbom, 1984).

A critical issue in any confirmatory factor analysis is the assessment of model fit that gives the technique its confirmatory function. The chi-square statistic, standardized root mean-square residual (SRMR), goodness-of-fit index (GFI), and adjusted goodness-of-fit index (AGFI), regarding absolute fit indices, are reported. The SRMR should approximate or be less than .08 to be indicative of adequate fit of the model to the data. GFI and AGFI with values of about .90 are considered adequate. GFI and AGFI with values of about .90 are considered adequate. From the range of incremental fit indices, the comparative fit index (CFI) has been used, with minimum value of .90 proposed for model acceptance. The Root Mean Square Error of Approximation represents closeness of fit and values approximating .06 and zero demonstrate close and exact fit of the model to the data. A value up to .08 indicates a reasonable error of approximation. In addition, the normed chi-square has also been reported in order to detect over-fitted models with values less than 1 (Schumacker & Lomax, 1996), and also considering ratio values of 3 or less as usual cut off criteria of model adequacy (Bollen, 1989). Descriptive statistics, MANOVA, ANOVA and correlation analyses were calculated with SPSS version 19.

RESULTS

Factor analyses of the 'Perceived significant adults' criteria for judging adolescents' success in sport' (PACEDOS)

Since the underlying structure of the ego and task dimensions of goal orientation scales (TEOSQ and POSQ) has been well supported in the sport and

exercise psychology literature, the use of confirmatory factor analytic techniques was deemed appropriate for the present instrument. The hypothesized measurement model consisted of two latent variables, one named ego-involving criteria and the second task-involving criteria. Each scale was defined by nine indicators.

Overall fit measures for the hypothesized 2-factor model for the four *Perceived significant other's criteria for judging adolescents' success in sport scales* are shown in Table 1. Despite the chi square value provided a poor fitting solution, as it can be expected with this sample size, the other goodness-of-fit indexes revealed an adequate fit of the model to the data for the *Perceived mother's criteria for judging adolescents' success in sport*, the *Perceived father's criteria for judging adolescents' success in sport*, and the *Perceived PE teacher's criteria for judging adolescents' success in sport*. The 2-factor model for the *Perceived coach's criteria for judging adolescents' success in sport*, though showed lower values in CFI and AGFI and higher in the RMSEA than the other three scales, can also be considered a reasonable model for the data. No changes or modifications between factors were considered statistically important and/or theoretically relevant.

TABLE 1
Goodness-of-fit indices for the hypothesized model

| Model | χ^2 | d.f. | <i>p</i> | CFI | GFI | AGFI | RMSEA | SRMR |
|-----------------------|----------|------|----------|-----|-----|------|-------|------|
| Mother's criteria | 627.78 | 134 | <.001 | .97 | .87 | .83 | .08 | .056 |
| Father's criteria | 621.60 | 134 | <.001 | .93 | .87 | .83 | .08 | .043 |
| PE teacher's criteria | 327.68 | 134 | <.001 | .93 | .86 | .82 | .08 | .047 |
| Coach's criteria | 522.27 | 134 | <.001 | .88 | .81 | .76 | .10 | .061 |

Factor loadings for each item on the appropriate factor for the four scales of the *Perceived significant adults' criteria for judging adolescents' success in sport* are shown in Table 2. Results indicated that the factor loadings of all the items were large and statistically significant ($p < .001$), supporting the convergent validity of the four measures items on their respective subscales.

On a closer examination of the factor loadings in the ego-involving scale, items reflecting significant adults' perceived criteria of success in sport focused on the adolescent being better than or superior to others loaded on this first factor. Specifically, items number 16, 17 and 18 showed the highest loadings for all the significant others' (mother, father, PE teacher and coach) measures.

The second factor, called task-involving criteria, captured those items indicating significant adults' definitions of sport success focused on the adolescent doing her/his best, trying hard, and overcoming difficulties. In terms

of the loadings of the task-involving scale, items number 9, 11 and 13 presented the highest loadings for the mother, items 4, 11 and 13 the highest for the father, items 3, 6 and 11 for the PE teacher and items number 3, 4, 6 and 11 had the highest factor loadings for the coach (see Table 2).

It can be noted that there was a low but significant correlation between the ego-involving and the task involving dimensions in the case of the mother and the PE teacher ($r = .16^*$ and $.18^*$, $p < .05$, respectively). Nevertheless, there was a relatively high and significant correlation between the ego and the task dimensions in the case of the father and the coach (father = $.44^*$ and coach = $.46^*$, $p < .05$)

Therefore, this hypothesized model was used as the basis for the description of the significant others' criteria perceived by the adolescent when they judge his/her success in sport in this study.

TABLE 2
Standardized factor loadings for the two-factor model,
reliabilities and descriptive statistics (means and standard deviations)

| Items | MOTHER | | Items | FATHER | | Items | PE TEACHER | | Items | COACH | |
|--|------------------------|-------------------------|-------|------------------------|-------------------------|-------|------------------------|-------------------------|-------|------------------------|-------------------------|
| | Ego-involving criteria | Task-involving criteria | | Ego-involving criteria | Task-involving criteria | | Ego-involving criteria | Task-involving criteria | | Ego-involving criteria | Task-involving criteria |
| 16 I am clearly superior | .84 | | 16 | .84 | | 16 | .85 | | 16 | .84 | |
| | .84 | | 17 | .83 | | 17 | .85 | | 17 | .84 | |
| 17 I show others I'm the best | .81 | | 18 | .82 | | 18 | .85 | | 18 | .80 | |
| 18 I score the most points or am the first | .78 | | 2 | .77 | | 8 | .80 | | 8 | .78 | |
| | .77 | | 1 | .75 | | 1 | .77 | | 2 | .70 | |
| 1 I'm the best | .73 | | 8 | .75 | | 2 | .77 | | 1 | .67 | |
| 2 I beat others | .70 | | 7 | .73 | | 7 | .77 | | 5 | .66 | |
| 8 I can do better than my teammates | .66 | | 5 | .71 | | 5 | .72 | | 7 | .66 | |
| | .56 | | 12 | .67 | | 12 | .72 | | 12 | .63 | |
| 7 I outperform opponents | | .73 | 11 | | .86 | 3 | | .83 | 6 | | .81 |
| | | .72 | 4 | | .82 | 11 | | .83 | 3 | | .78 |
| 5 I win | | .71 | 9 | | .81 | 6 | | .82 | 4 | | .76 |
| 12 The others can't do as well as me | | .68 | 13 | | .81 | 13 | | .81 | 11 | | .76 |
| | | .68 | 3 | | .80 | 9 | | .79 | 13 | | .76 |
| 13 I do something I couldn't do before | | .66 | 6 | | .80 | 4 | | .75 | 15 | | .74 |

| | | | | | | | | | | | |
|---|------------|-----------|----|------------|------------|----|-----------|------------|----|------------|-----------|
| 11 I achieve things I couldn't do before | | .65 | 15 | | .79 | 15 | | .74 | 9 | | .73 |
| 9 I overcome problems | | .64 | 10 | | .78 | 10 | | .67 | 10 | | .72 |
| 4 I work really hard | | .62 | 14 | | .76 | 14 | | .64 | 14 | | .71 |
| 6 I improve my skills | | | | | | | | | | | |
| 15 I do my very best | | | | | | | | | | | |
| 3 I 'm proficient in something I couldn't do before | | | | | | | | | | | |
| 10 I achieve personal goals | | | | | | | | | | | |
| 14 I reach a goal | | | | | | | | | | | |
| Alpha Coefficients | .91 | .85 | | .90 | .85 | | .93 | .90 | | .90 | .87 |
| Means (SD) | 2.83 (.92) | 4.16(.59) | | 2.83 (.88) | 4.14 (.58) | | 2.73(.93) | 4.15 (.66) | | 3.06 (.84) | 4.08(.64) |

Descriptive statistics and internal reliability of the measures

Descriptive statistics and Alphas are listed in Table 2. The ego and task-involving subscales for each of the significant adult (mother, father, PE/teacher and coach) versions of the adapted goal perspective assessment demonstrated acceptably high internal consistency across the four administrations (coefficients ranging from .85 to .93) The exclusion of none of the items resulted in an improvement in the observed alpha coefficients. Further, all the items were positively correlated with the appropriate total scale scores with a minimum correlation of $r = .62$ of the item 12 ("...the others can't do as well as me") in the case of the ego-involving scale (coaches' criteria) and $r = .62$ for the item 3 ("...I'm proficient in something I wouldn't do before") in the task-involving scale (fathers' criteria). The maximum correlation was $r = .85$ for item 18 ("...I score the most points or am the first") in the ego-involving scale (PE teachers' criteria). Means and standard deviations were calculated for each perceived significant other goal orientation measure. As seen in Table 2, the adolescents in the present sample perceived that their significant adults defined sport success for them more in terms of task versus ego-involving criteria.

The ego and task orientation scales demonstrated acceptable internal consistency. Alpha Coefficients were .82 for ego-involving criteria and .75 for task-involving criteria. In the case of the two subscales assessing the perception of the motivational climate created by the coach in the team, coefficients for the ego-involving climate ($\alpha = .86$) and the task-involving climate ($\alpha = .83$) reflected acceptable internal reliability. An examination of the means and standard deviations showed that adolescents had a high perception of task-involving climate ($M=4.06$; .51) and a high task orientation ($M= 4.16$; .59), and a moderate to high perception of ego-involving climate ($M=2.72$; .75) and ego orientation ($M=2.42$; .84).

Differences by gender, participants group and significant other

Once the measurement model had been properly established, further comparisons between groups were considered. A 2 (gender) x 2 (participants group) x 3 (significant adult) MANOVA was conducted with repeated measures in the last factor (mother, father and PE teacher for educational context; mother, father and coach for sport context). Main effects tested whether mean differences in the *Perceived significant adults' criteria for judging adolescents' success in sport* (measured by the ego and task-involving criteria factors) were associated to differences a) between subjects in terms of gender and participants group (athletes/non-athletes) and b) within subjects in terms of the significant adult (mother, father, PE teacher and/or coach). In other words,

whether independently of the participants group (athletes or non-athletes), gender affected the perceived ego and task-criteria, or independently of gender, to be involved in competitive sport or not affected the perceived ego and task-criteria. Also, Within-Subjects Effects examined whether being the mother, the father or the PE teacher/coach would affect the adolescents' perception of the ego and task-involving criteria.

On the other hand, the *interaction* tested whether a) the participants' group effect in the perceived ego and task-involving criteria was different as a function of gender or the significant adult, and b) the gender effect in the perceived ego and task-involving criteria was different as a function of group or the significant adult. Finally, the interaction also tested whether the significant adult effect in the perceived ego and task-involving criteria was different as a function of gender and being athlete or non-athlete.

The 2 x 2 x 3 MANOVA revealed a non-significant main effect for the significant other (mother, father and PE teacher/coach) independent variable, but there was a significant main effect for gender (Wilk's lambda = .94, $F[2.473] = 15.599$, $p < .001$, $\eta^2 = .062$) and a marginally significant main effect for participants group (Wilk's lambda = .98, $F[2.473] = 2.924$, $p = .055$, $\eta^2 = .012$). The MANOVA showed no multivariate interaction between gender and participants group, however a significant multivariate interaction between participants group and the significant adult in question was found (Wilk's lambda = .96, $F[4.471] = 5.413$, $p < .001$, $\eta^2 = .044$).

Follow-up 2 (gender) x 2 (participants group) x 3 (significant adult) univariate ANOVA on the perceived ego-involving criteria revealed a significant main effect for gender, ($F[1.474] = 30.488$, $p < .001$, $\eta^2 = .060$), participants group, ($F[1.474] = 5.749$, $p = .017$, $\eta^2 = .012$) and significant other, ($F[2.948] = 4.897$, $p = .008$, $\eta^2 = .010$). More specifically, as can be seen in Table 3, males were significantly higher in the perceived ego-involving criteria than females, and athletes were significantly higher in perceiving a more ego-involving criteria than non-athletes. In the case of significant other, Bonferroni tests showed that adolescents perceived their sport leader (PE teacher or coach) to define success more with respect to an ego-involving criteria than their mothers and fathers. There was a significant difference between sport leader and mother.

TABLE 3
Perceived goal-involving criteria mean values for gender, participants group and significant other (univariate analyses)

| Dependent variables | Gender | | Participants group | | Significant other | | |
|-----------------------|---------|-------|--------------------|--------------|-------------------|--------|--------------|
| | Females | Males | Athletes | Non-athletes | Mother | Father | Sport leader |
| <i>Ego-involving</i> | 2.67 | 3.07* | 2.95* | 2.78 | 2.83 | 2.85 | 2.92* |
| <i>Task-involving</i> | 4.13 | 4.12 | 4.14 | 4.11 | 4.14 | 4.13 | 4.10 |

The subsequent univariate analyses also revealed, for the perceived ego-involving criteria, no significant interactions between gender and participants group. However, significant interactions were found between significant other and gender ($F[2.948] = 3.397$, $p = .034$, $\eta^2 = .007$) and significant other and participants group ($F[2.948] = 7.382$, $p < .001$, $\eta^2 = .015$). Mean values can be seen in Table 4. Particularly, figure 1 shows that females, but especially, males' perception of the sport leaders' ego-involving criteria for judging their success in sport scored higher than mothers or fathers' criteria. In contrast with females, males perceived all their significant others to emphasize a more ego-involving criteria. Athletes' perception of coaches' criteria for judging their success in sport reported higher scores in ego-involving criteria than mothers or fathers. In the case of non-athletes, there was a tendency of perceiving their fathers to use a more ego-involving criterion than mothers and PE teachers. No significant interactions were found among significant other, gender and participants group for the ego-involving criteria.

TABLE 4
Perceived goal-involving criteria mean values for significant other, gender and participants group (univariate analyses)

| Dependent variables | SIGNIFICANT OTHER * GENDER | | | | | |
|-----------------------|----------------------------|--------|------------|--------|--------|-----------|
| | Female | | | Male | | |
| | Mother | Father | Sport.lead | Mother | Father | Sp.leader |
| <i>Ego-involving</i> | 2.67 | 2.66 | 2.68 | 2.99 | 3.04 | 3.17* |
| <i>Task-involving</i> | 4.15 | 4.12 | 4.10 | 4.13 | 4.13 | 4.10 |

TABLE 4 (Cont.)

| Dependent variables | SIGNIFICANT OTHER * GROUP | | | | | |
|-----------------------|---------------------------|--------|-------|--------------|--------|-----------|
| | Athletes | | | Non-athletes | | |
| | Mother | Father | Coach | Mother | Father | PEteacher |
| <i>Ego-involving</i> | 2.89 | 2.89 | 3.08 | 2.76 | 2.81 | 2.77* |
| <i>Task-involving</i> | 4.20* | 4.15 | 4.07 | 4.08 | 4.10 | 4.14* |

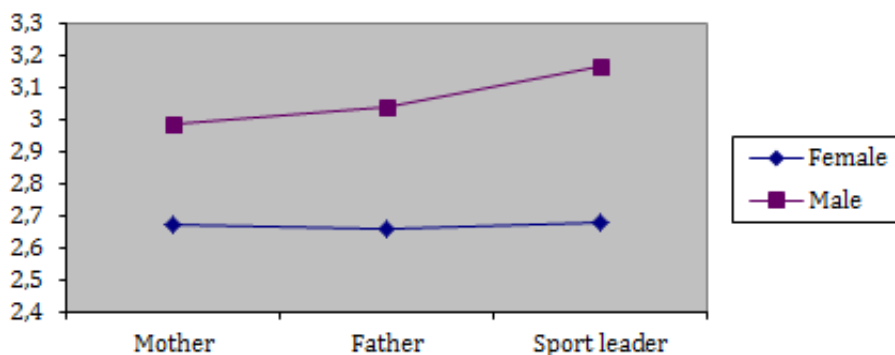


FIGURE 1: Interactions between gender and significant other on perceived ego-involving criteria

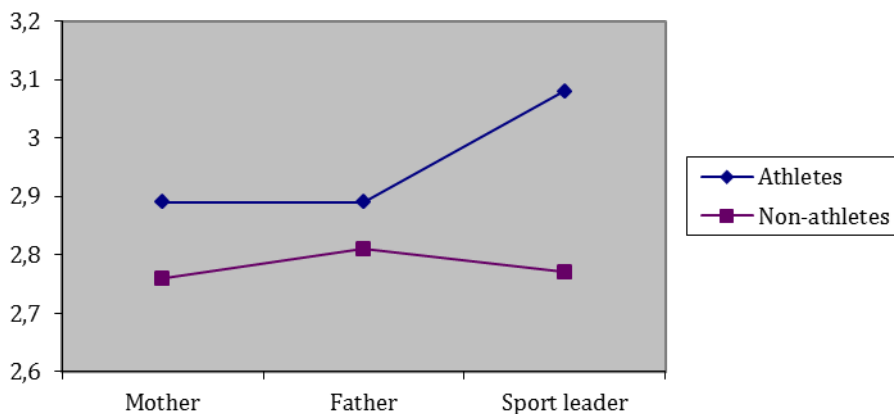


FIGURE 2: Interactions between participants group and significant other on perceived ego-involving criteria

A second 2 x 2 x 3 ANOVA was performed on the task-involving scores. The analyses showed a non-significant main effect for gender, participants group and significant other. Moreover, no significant interactions were found between

gender and participants group, significant other and gender, and among significant other, gender and participants group. However, there was a significant interaction between significant other and participants group ($F[2.948] = 7.727, p < .001, \eta^2 = .016$). Specifically, athletes' perception of mothers' task-involving criteria for judging their success in sport scored higher than fathers or coaches' criteria. Mean values for the interaction are shown in Table 4. In contrast with athletes, as can be seen in figure 3, there was an inverse tendency of non-athletes' perception of their sport leader's (the PE teachers) task-involving criteria scoring higher than their mothers and fathers, and their mothers' task-involving criteria scoring lower than the other two significant others.

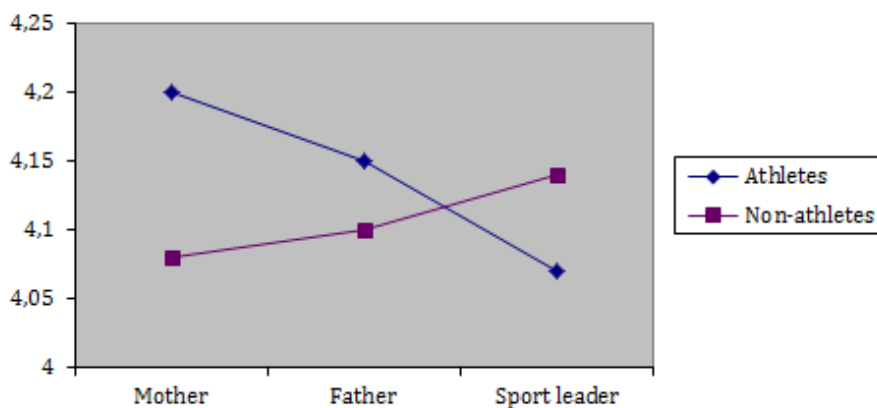


FIGURE 3: Interactions between participants group and significant other on perceived task-involving criteria

Relationship between perceptions of significant adults' criteria for judging adolescents' success in sport and goal orientations

Since significant gender and participants group differences were identified, subsequent analyses examined both variables separately (female athletes/male athletes/female non-athletes/male non-athletes). Pearson-product correlations were computed between perceived significant others' criteria for judging adolescent's success in sport and adolescents' goal orientations (Table 5).

TABLE 5
Pearson correlations between perceptions of significant adults' criteria for judging adolescents' success in sport and goal orientations

| Variable | Ego orientation | Task orientation |
|--------------------------------------|-----------------|------------------|
| Female Athletes | | |
| Mother's ego-involving criteria | .62*** | .13 |
| Father's ego-involving criteria | .70*** | .16 |
| Coach's ego-involving criteria | .45*** | .23** |
| Mother's task-involving criteria | .23** | .49*** |
| Father's task-involving criteria | .16 | .42*** |
| Coach's task-involving criteria | .25** | .26** |
| Male Athletes | | |
| Mother's ego-involving criteria | .50*** | -.004 |
| Father's ego-involving criteria | .52*** | -.01 |
| Coach's ego-involving criteria | .49*** | .03 |
| Mother's task-involving criteria | .01 | .54** |
| Father's task-involving criteria | .03 | .51*** |
| Coach's task-involving criteria | .01 | .60*** |
| Female Non-Athletes | | |
| Mother's ego-involving criteria | .65*** | -.21* |
| Father's ego-involving criteria | .63*** | -.35*** |
| PE teacher's ego-involving criteria | .56*** | -.25** |
| Mother's task-involving criteria | -.20* | .51*** |
| Father's task-involving criteria | -.19 | .48*** |
| PE teacher's task-involving criteria | -.06 | .43*** |
| Male Non-Athletes | | |
| Mother's ego-involving criteria | .71*** | .07 |
| Father's ego-involving criteria | .65*** | .08 |
| PE teacher's ego-involving criteria | .57*** | .17 |
| Mother's task-involving criteria | .06 | .66*** |
| Father's task-involving criteria | .04 | .55*** |
| PE teacher's task-involving criteria | .16 | .51*** |

* $p < .05$; ** $p < .01$; *** $p < .001$

Female and Male athletes

A positive and significant correlation emerged between female athletes' ego orientation and their perceptions of their significant others' ego-involving criteria (mother, father and coach). Ego orientation was also low but positively and significantly associated to a perception of mother's and coach's task-involving criteria. Correlational analysis also revealed that female athletes who were task-oriented were likely to believe that their mother, father and coach used a task-involving criteria for judging females' success in sport. It was also found a low but significant relationship between perceptions of coach's ego-involving criteria and female athletes' task orientation.

Perceptions of an ego-involving criteria used by the mother, the father and the coach were positively related to male athletes' ego orientation. In addition,

perceptions of a task-involving criteria used by the mother, the father and the coach were positively related to male athletes' task orientation.

Female and Male non-athletes

In the case of female non-athletes, a positive and significant correlation emerged between their ego orientation and their perceptions of significant others' ego-involving criteria. Ego orientation was also low but inversely related to a perception of mother's task-involving criteria. Correlational analysis also revealed that female non-athletes who were task-oriented were likely to believe that their mother, father and PE teacher used a task-involving criterion for judging females' success in sport. It was also found a negative and significant relationship between mother, father and PE teacher's ego-involving criteria and female non-athletes' task orientation.

Finally, perceptions of an ego-involving criteria used by the mother, the father and the PE teacher were positively related to male non-athletes' ego orientation. In addition, perceptions of a task-involving criteria used by the mother, the father and the PE teacher were positively related to male non-athletes' task orientation.

Relationship between perceptions of coach's criteria for judging athletes' success in sport and perceived motivational climate

Pearson product-moment correlations revealed that Female Athlete's perception of a task-involving climate was positively related to a perception of their coach's task-involving and ego-involving criteria used when judging female athletes' success in sport ($r = .32$, $p < .001$, and $r = .27$, $p < .01$, respectively).

In the case of Male Athletes, a positive and significant correlation emerged between the perception of an ego-involving climate and and their perceptions of coach's ego-involving criteria ($r = .41$, $p < .001$). Also, perceptions of a task-involving climate was positively associated to the perception of a task-involving criteria used by the coach when judging male athletes' success in sport ($r = .47$, $p < .001$).

DISCUSSION

The main purpose of this study was to establish the validity and reliability of the four-Perceived significant adults' criteria for judging adolescents' success in sport (PACEDOS) scales. In terms of the factorial validity, the findings revealed that the two-factor models could be safely maintained in the four significant adults groups. There are three main reasons to keep the structure. First, in general the fit indices were adequate. These indices did not present a

perfect fit, but the model proposed here is extremely parsimonious because it comprises 18 observed variables in two factors. Second, the model was completely a priori, thus not capitalising on chance. Third, the factor loadings offered information on the reliability of the items to measure the factors, labelled ego-involving and task-involving criteria, also indicating a good analytic fit of the model. In other words, all factor loadings were statistically significant ($p < .001$), showing that items were highly related to the factors. In general, items were good indicators of the latent variable for all the variables. The factorial validity of the model in the coach's group was slightly worse than that in the other three models. However, attending to the good factor loadings, the coherence with the other models and the fact that modifications proposed by the different statistical tests used were unimportant; the simple structure was kept as an adequate representation of the data. Alfa coefficients indicated an acceptable internal consistency of both subscales.

In an attempt to obtain preliminary information on the discriminant validity of the PACEDOS, the current findings suggest that both athletes and non-athletes and boys and girls vary in their perceptions of how much particular significant others stress ego and task-involving criteria in their definitions of success for these adolescents. Because the organized sport context was expected to be the most competitive, the fact that athletes viewed the coach as emphasizing ego-involving criteria more than their mothers and fathers was logical. In the same vein, it makes sense that the athletes perceived their coach to use a more ego-involving criteria to judge their personal success than the non-athletes' perceptions of the physical education teacher. Interestingly, in the non-athletes group, students reported to perceive their fathers as the most important significant adult using an ego-involving criteria, and their PE teachers as the most relevant adult showing a task-involving criteria. This fact suggests that, particularly, the PE teacher, as the main agent of an expected non-competitive exercise context, is less likely to influence adolescents' perceptions of performance-focused and competitive criteria when judging adolescents' sport experiences. Conversely, she/he is able to appropriately use and transmit to their students those criteria that reinforce the process of learning, and personal progress and improvement, more in line with the purposes of the school PE milieu (Alexander & Luckman, 2001; Duda, 2001a; Wallhead & Ntoumanis, 2004).

In terms of potential gender differences in the sport and exercise domains, there is a tendency in the international literature for males to be more ego-oriented than females (see Duda & Whitehead, 1998). Results in this study showed that boys perceived all their significant others to emphasize a more ego-involving criteria on them, compared to girls' perceptions. Additionally,

fathers were the most significant adult reinforcing an ego-involving criteria as perceived by non-athletes adolescents, while an inverse tendency of athletes' perceptions of a task-involving criteria occurred, being the mother the most outstanding adult using these criteria. Therefore, we might assume that the social environments (created by socializing agents) surrounding adolescent males would be deemed more ego-involving than in the case of females. The present findings also provide some evidence to suggest the gendered role that parents may play in socializing their sons and daughters to adopt certain achievement goals, with fathers emphasizing a more ego-involving criterion, while mothers seem to strengthen a more task-involving criterion.

In providing greater information regarding the validity of the PACEDOS, relationships between each of the four PACEDOS measures and personal goal orientations of the four groups of adolescents (female and male athletes, and female and male non-athletes) were examined. Ego orientation was positively associated to a perception of the three socializing agents' ego-involving criteria throughout the four groups. The same pattern occurred in the four groups when referring to relationships between a task orientation and a perception of the three socializing agents' task-involving criteria. Furthermore, findings revealed that female non-athletes' task orientation was negatively related to their perception of the three significant adults' ego-involving criteria. These findings support the concurrent validity of the present measure.

Finally, predictive validity was established since findings demonstrated that athletes' perceptions of their coaches' success criteria were not equivalent to their perceptions of the climate created by the coach. All these support Duda's (2001b) claim that it would be wrong, empirically and conceptually, to equate assessments on perceptions of the goal perspectives emphasized by significant others to measures of the perceived motivational climate. It seems, therefore, that the PACEDOS may be regarded as one of the missing pieces, which can help to understand the entangling socialization process of adolescents' motivational goals determination.

Consistent with previous Spanish research (Balaguer, et al., 2002; Castillo, Balaguer, Duda & García-Merita, 2004; Cervelló & Santos Rosa, 2000; Escartí, et al., 1996; Guivernau & Duda, 1994; Peiró, 1999), the present findings provide additional support for the relevance of achievement goals in the contexts of Spanish sport and physical education and suggest that the task and ego dimensions are also applicable to ways in which significant others are held to define success for Spanish adolescents.

In general, the results of this study "set the stage" for the future examination of possible differential relationships between the perceived criteria for one's sport success held by one's significant others and young

people's dispositional goal orientations. That is, utilizing a parallel set of items targeting relevant significant others in the lives of boys and girls (such as their parents, PE teachers, and coaches), we can more appropriately discern which significant other(s) might be more salient to individual differences in children's or adolescents' goal perspectives. As the current instrumentation tapping perceptions of the motivational climate created by coaches, parents, and physical education teachers entails a variety of assessment tools, we cannot so readily ascertain which perceived environment is most predictive of goal orientations based on those assessment tools. Of course, regardless of the measures employed, the impact of such socializing agents on the development of young people's proneness for emphasizing task and ego goals in sport can best be determined via longitudinal designs rather than cross-sectional investigations.

It would be intriguing to examine the associations between individuals' views about how important people in their world define success for these individuals and perceptions of the motivational climate. For instance, the degree to which the perceived situational structures characterizing the social environment in question are more or less task- and/or ego-involving. We do not think these constructs would be redundant. It might be the case that the latter variable is predictive of the former. That is, it seems reasonable that it is our perceptions of the situational goal structures (i.e., situational characteristics), which inform us about how those, who create those climates, define success for us.

In summary, this study provides initial psychometric support for the PACEDOS. It can be considered a good representation of the data in the four scales (mother, father, coach/PE teacher) with the two factors solution (ego-involving and task-involving criteria) representing a good model fit. Additionally, scores on the goal-involving criteria measures did discriminate between males and females, and athletes and non-athletes, while scores on the task-involving criteria measures discriminated between the three significant adults and adolescents being athletes or non-athletes. Finally, results in this study suggest the adequacy of proceeding, in future research, with the examination of the potential relationships among the perceived criteria for one's success evoked by significant others, perceptions of motivational climates created by significant others, dispositional goal orientations, and the motivational correlates of these variables, at least in the case of the Spanish adolescent sport culture. The present research needs to be replicated among adolescents from other cultural backgrounds and the psychometric features of the current modified goal orientation measure examined among different racial/ethnic groups. Concerning subsequent work on the present

instrumentation among Spanish youth, more stringent and comprehensive examinations of its validity and reliability are warranted. This measure may be considered, therefore, another piece in the determination of adolescents' goals in the entangling domain of motivation in sport and physical education.

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