10-2020

Psychosocial Climates Differentially Predict 12- to 14-Year-Old Competitive Soccer Players' Goal Orientations

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Recommended Citation

Moore, E. W. G., & Weiller-Abels, K. (2020). Psychosocial climates differentially predict 12- to 14-year-old competitive soccer players' goal orientations. *Women in Sport and Physical Activity Journal, 28*(2), 111-118. doi:

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Abstract

Youth's likelihood of participating in sport increases when they maintain a focus on enjoyment, learning, and effort (i.e., task goal orientation) rather than how they compare to others and norms (i.e., ego goal orientation). Achievement goal theory research consistently illustrates the significant influence of leader-created motivational climates on their participants' goal orientation adoption (Fry & Moore, 2019). However, the influence of caring climate perceptions by highly competitive adolescent athletes on their goal orientation adoption has yet to be examined. Thus, this study assessed how competitive, adolescent soccer players' perceptions of the climate as caring, task-, and ego-involving predicted their adoption of task and ego goal orientations. Players (N = 152, 62% female, 12-14 years of age) in the Olympic Development Program completed a survey that included measures of the caring climate, task-involving and ego-involving motivational climates, and task and ego goal orientations in soccer. Path analyses revealed males' task goal orientation was significantly predicted by caring and task-involving climate perceptions. Females' task goal orientation was significantly predicted by their task-involving climate perceptions. Ego goal orientation was significantly predicted by all athletes' ego-involving climate perceptions. This is the first study to support the importance of fostering a high caring, as well as high task-involving, and low ego-involving climate when working with highly competitive adolescent athletes to keep their task goal orientation high. Research replicating this study is warranted to provide further support for these relationships longitudinally and across ages and sexes.

Psychosocial Climates Differentially Predict 12 – 14-Year-Old Competitive Soccer Players' Goal Orientations

The rate of dropout from one season to the next among competitive adolescent soccer players is up to 60% (Temple & Crane, 2016). A study with US youth sport participants linked the rate of attrition to what coaches emphasize during practices and competitions (Barnett, Smoll, & Smith, 1992). Often parents and coaches attempt to apply a highly competitive, structured, performance-oriented approach to sport participation (Christakis and Christakis, 2010; Hyman, 2012), which lean youth toward adult controlled expectations, high level competition, and may lean away from enjoyment (Chudacoff, 2007; Elkind, 2007). As a result, Temple and Crane (2016) called for research "examining interactions between the individual and the environment" (p. 856). Researchers in sport psychology have utilized the two motivational climates of achievement goal theory (Ames, 1992; Nicholls, 1989) to examine the effects of emphasizing effort, improvement, and cooperative learning (i.e., task-involving climate) or intra-group rivalry, punishment of mistakes, and favoritism (i.e., ego-involving climate) to understand the effect of the coach created climate on athletes' motivation (Fry & Moore, 2019; Harwood, Keegan, Smith & Raine, 2015). These climates have been associated with opposite relationships to multiple behaviors, affects, and cognitions over the last 30 years of research (Fry & Moore, 2019). Recently, the caring climate has started to also be studied in sport contexts to better understand socio-emotional responses to sport participation (Fry & Gano-Overway, 2010; Gano-Overway, Newton, Magyar, Fry, Kim, & Guivernau, 2009). Thus, the intent of this investigation was to begin addressing the need highlighted by Temple and Crane (2016) by examining the possible effect of coach-fostered caring, task-, and ego-involving climates on athletes' definitions of success in sport.

Theoretical & Research Background

An important contribution to achievement goal theory by Nicholls was delineating the cognitive development that occurs between ages 11 and 14 in the academic setting (Nicholls, 1989). Prior to this age range children's cognitive inability to distinguish between task difficulty, ability, luck, and effort has been illustrated by all students ranking themselves at the top of the class (see Nicholls, 1989 for detailed presentation of these important nuances); however, between the ages of 11 and 14 students express their capability to consistently distinguish between ability, luck, and effort by appropriately ranking (i.e., similar to the teacher's) their academic ability relative to their classmates. Fry's work in the physical activity setting (Fry, 2000a, 2000b; Fry & Duda, 1997 for detailed description) replicated Nicholls' cognitive development results. As youth develop the cognitive ability to distinguish between effort, ability, and luck, their perceptions of success and competence can shift from a solely self-referenced and learning focus (i.e., task goal orientation) to include an other-referenced and comparative focus (i.e., ego goal orientation). Thus, the cognitive development attained between ages 11 and 14 aligns with individuals' ability to adopt the ego goal orientation (i.e., other-referenced definition of success [Nicholls, 1989]) and parallels when there is a marked drop-off in sport participation (Temple & Crane, 2016).

Having a high ego orientation (i.e., other-referenced focus) can result in youth giving less effort, having less enjoyment, and ceasing to participate altogether (Fry & Moore, 2019; Nicholls, 1989). When individuals experience an ego-involving climate that emphasizes ability over effort, intra-group comparison, and punishment of mistakes, their ego goal orientation adoption increases (Fry & Moore, 2019; Nicholls, 1989). For example, adolescent high school varsity athletes' ego goal orientation was predicted by their perceptions of the ego-involving motivational climate fostered by their peers, parents, and coaches (Beck, Petrie, Harmison, & Moore, 2017; Boyce, Gano-Overway, & Campbell, 2009; Paiffy & Martin, 2008). Both field and intervention research in sport and physical education settings

have shown that motivational climates can result in significant changes in youths' and adolescents' goal orientations in relatively short time spans (Boyce, Gano-Overway, & Campbell, 2009; Todorovich, & Curtner-Smith, 2006; Weigand & Burton, 2002). Todorovich and Curtner-Smith's (2006) PE intervention significantly affected students' reported goal orientations after only 10, 30-minute PE sessions (300 minutes of PE instruction over two weeks). Youth athletes' autonomy, competence, relatedness, intrinsic motivation, and persistence to continue in sport have all been negatively related to their perceptions of an ego-involving motivational climate (Joesaar, Hein, & Hagger, 2011).

When individuals experience a task-involving climate that emphasizes individuals' effort, improvement, and cooperative learning, they are more likely to hold a high task goal orientation (Beck, et al., 2017; Smith, Cumming, & Smoll, 2008; Smith, Smoll, & Cumming, 2009; Smoll, Smith, & Cumming, 2007), as well as self-esteem and intrinsic motivation (Smith, Cumming, & Smoll, 2008). Further, receiving task-involving feedback promoted high school soccer players with low grit to perform better on their subsequent soccer skill assessment (Moles, Auerbach, & Petrie, 2017). When coaches provide activities that foster perceptions of mastery, their players are more motivated to persist and take on challenges. A recent review of research highlighted the overwhelming consistency of adaptive responses that occur when athletes experience a task-involving climate compared to the responses from experiencing an ego-involving climate (Fry & Moore, 2019).

In the last decade, the caring climate has been researched as an aspect of the psychosocial climate complementary to a task-involving motivational climate (Fry & Moore, 2019). Newton and colleagues (2007) developed the Caring Climate Scale for physical activity settings based upon the educational philosophical work on caring by Noddings (2005, 2013). The caring climate is defined as the extent to which individuals perceive a setting as safe, supportive and feel respected, welcomed, and valued (Newton et al., 2007). The caring

climate has been positively and moderately to strongly associated with experiencing a task-involving climate; whereas, moderately negative associations have been seen between caring climate and ego-involving climate perceptions (Moore & Fry, 2014; Newton et al., 2007). According to Dodd, Brown, and Fry (2009), in a study with adolescent soccer players, caring coaching behaviors include encouragement, praise, showing concern for injured/ill athletes, having fun and socializing with athletes, and genuinely caring about the athletes as people. When athletes perceive a caring climate, they report having higher commitment, more positive attitudes toward coaches and teammates, giving more effort, and being more caring toward their coaches and teammates (Fry & Gano-Overway, 2010). Based on the positive relationship of athletes' perceptions of the caring climate with effort and commitment, a positive relationship with task goal orientation is expected. The caring climate may also be negatively related to athletes' adoption of an ego orientation, because coaches emphasizing a caring climate welcome each athlete to the team, value each individual as a person, and do not judge athletes for making mistakes. Thus, the type of climate fostered by coaches affects athletes' overall experience and development.

Study Purpose

Given the outcomes related to athletes' goal orientations, including persistence to participate, effort, and enjoyment, how coaches influence athletes' goal orientations is important to understand. Research described above has established the relationships between the task- and ego-involving climates with individuals' goal orientations, however the influence of the caring climate on individuals' goal orientation adoption has not been examined previously. There is some evidence for sex differences in the adoption of these goal orientations (Lochbaum, Cetinkalp, Graham, Wright, & Zazo, 2016). Collegiate female athletes reported adopting a higher task goal orientation than males (McCarthy, 2011); whereas 9-13-year-old male athletes reported adopting a higher ego orientation than females

(Smith, Smoll, & Cumming, 2009). The current study examined how competitive 12-14-year-old soccer players' perceptions of the caring, task- and ego-involving climates related to their goal orientations and examine sex differences. Caring and task-involving climates were hypothesized to positively predict the athletes' task goal orientation, while the ego-involving climate would positively predict their ego goal orientation. Males were hypothesized to report a higher ego goal orientation. Since moderation of the relationships between the motivational climates and goal orientations has not always been tested, this study specifically tested these relationships for sex moderation.

Method

Participants

The sample for this study was from an Olympic Development Program (ODP) pool of soccer players, which is a US Soccer program to develop future Olympic and National team players. The ODP is focused on training those players "with superior skills" (US Youth Soccer, 2019), so the youth athletes who try-out for the ODP have typically had highly competitive soccer experiences. It is important that the coaches are achieving ODP's mission for this age youth group, which is to "create a positive, competitive, and inspiring learning environment that is unique and conducive to the enhanced development of players and coaches…." (US Youth Soccer, 2019). ODP coaches are selected from the coaches in the region who hold high level soccer coaching licensures (i.e., United States Soccer Federation National "A", "B", or "C" licenses), plus have years of coaching experience generally and specifically with the age/sex players they coach for ODP. Thus, these are highly qualified and capable coaches charged with fostering player development with this age group and not an emphasis on competition.

In the Spring of 2016, 169 (60% female) 12 to 14-year-old players of the local ODP district completed the researchers' survey. Players reported years playing soccer (M = 8.38,

SD = 1.63) and years playing at the competitive club/travel level (M = 4.46, SD = 1.71). See Table 1 for frequencies regarding the participants' soccer playing experience (years total, years in competitive/travel soccer, ODP try-outs and highest level reached) and if they participated in other sports. Specifically, the female players reported participating primarily in track and field (n = 40), basketball (n = 33), and volleyball (n = 25), with less than eight reporting participating in cheerleading, cross country, field hockey, futsal, gymnastics, softball, tennis, or wrestling. The male players reported participating primarily in basketball (n = 16) and track and field (n =12), with five or less reporting participating in baseball, boxing, cross country, football, golf, mixed martial arts, skiing, and swimming.

Measures

After completing the demographic questions measuring age, sex, pool affiliation (e.g., '02 boys, '03 girls) and playing experience, the following measures were presented.

Perceptions of Success Questionnaire

The Perceptions of Success Questionnaire (POSQ; Roberts, Treasure, & Balague, 1998) was used to measure the players' goal orientation when participating in soccer. The stem was "I feel most successful in soccer, when …" Players responded to six task and six ego goal orientation items on a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Example items are "… I succeed at something I couldn't do before" (task goal orientation) and "… I accomplish something others cannot do" (ego goal orientation). The POSQ has been used to reliably (α_{task} = .76 – .89, α_{ego} = .75 – .91) measure goal orientations among similar samples (Pensgaard & Roberts, 2003; Roberts et al., 1998).

Task- and Ego-involving Motivational Climates

The Motivational Climate in Youth Sport Scale (MCYSS; Smith, Cumming, & Smoll, 2008) was used to measure the players' task- and ego-involving climate perceptions. The scale is comprised of six task- and six ego-involving items. Players were instructed to

respond on a five-point Likert-type scale (1 = *not at all true* to 5 = *very true*) to the climate items based upon the coach they had the most interaction with during the ODP training sessions. Example items are "The coach made players feel good when they improved a skill" (task-involving) and "The coach spent less time with the players who weren't as good" (ego-involving). The MCYSS has been used to reliably ($\alpha_{\text{task-involving}}$ = .78 – .84, $\alpha_{\text{ego-involving}}$ = .74 – .75) measure team sport motivational climates among similar samples (Smith et al., 2008).

Caring Climate

The Caring Climate Scale (CCS; Newton et al., 2007) was used to measure the players' perception of the caring climate. Players responded to the 13 items on a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). The stem was "On this ODP team, …" and an example item is "… the coach listens to players." The CCS has been used to reliably (α = .91 – .92) measure the caring climate of sport and physical activity camps among similar samples (Fry & Gano-Overway, 2010; Newton et al., 2007).

Procedure

After obtaining Institutional Review Board approval from the researchers' institution, the researchers surveyed the 12 to 14-year-old pool players before one of their last Spring training sessions to ensure time for the psychosocial climate to develop. Two counterbalanced survey versions were used with the player and parent consent forms provided as a complete survey packet for players to share with their parents. The ODP staff emailed the pool players' parents regarding the researchers' presence prior to the upcoming training session, and asked them to arrive 20 minutes early. The coaches introduced the research team, who explained the purpose of the survey (including both consent forms) and study in general. Upon completion of the survey, players joined the training session warm-up.

Data Analysis

The data were checked for normality (i.e., skew and kurtosis less than 3.0) and

reliability (Cronbach's alpha coefficient of .70 or greater) of measurement (Tabachnick & Fidell, 2007) in SPSS 25 (IBM, 2017). Then, the mean, standard deviation, and correlation values were calculated in SPSS. This dataset was then used to conduct two-group (male and female) path analysis model in the R Package lavaan (Rosseel, 2012); the maximum likelihood (ML) estimator was used. The two-group path analysis allowed for the direct testing of moderation of all parameters (i.e., means, variances, correlations) by sex utilizing a nested chi-square difference test ($p \leq .05$). Finally, the hypothesized predictive paths from the caring, task-, and ego-involving climates to the task and ego goal orientations were tested with the nested chi-square difference test for significance.

Results

Data were found to meet normality and the variables were reliably measured (See Table 2 for correlations, means, standard deviations, and reliability values by sex). The psychosocial climates were correlated in the hypothesized directions. Based upon the nested model homogeneity tests, the mean (p = .66) and variance (p = .69) values were not moderated by sex (See Table 3). Overall, both the male and female athletes reported holding high task and moderately high ego goal orientations. They also reported a moderately high caring and task-involving climates, and low ego-involving climate. The homogeneity of covariances test did not pass (p = .004). Follow-up testing revealed eight of the ten covariances were not moderated by sex (p = .15). The first of the two relationships that were significantly moderated by sex was between the goal orientations (p = .004); the correlation between the goal orientations was significant for the male athletes (r = .45, p = .001) and non-significant for female athletes (r = .08, p = .76). The second was between the caring and ego-involving climate perceptions which was significant for the females (r = -.22, p = .03) and nonsignificant for the males (r = .10, p = .40).

The two-group path analysis model accounted for a significant amount of variance for

both of the goal orientations. Specifically, the boys' path analysis model (Figure 1b) accounted for 31% of the task goal orientation's variance, with both the caring climate (b = .21, $p < .001$) and the task-involving climate (b = .12, $p = .006$) being significant predictors. Whereas, the girls' model (Figure 1a) accounted for 11% of the task goal orientation's variance, with the task-involving climate as the only significant predictor (b = .16, $p = .007$). The boys' model also accounted for 16% of the ego goal orientation's variance, with the ego-involving climate being the only significant predictor (b = .34, $p < .001$). Whereas, the girls' model accounted for 19% of the ego goal orientation's variance, with the ego-involving motivational climate again being the only significant predictor (b = .42, $p < .001$).

Discussion

The current study is the first to examine the relationship of the caring climate to adolescents' goal orientation adoption. It was hypothesized that the perceptions of the caring climate would significantly predict the athletes' task goal orientation for both males and females. This hypothesized significant relationship was only found for the male athletes. As hypothesized, the task-involving climate of the ODP pool perceived by both the male and female adolescent athletes significantly predicted their task goal orientation. Also, as hypothesized, an ego-involving climate of the ODP pool perceived by both the male and female adolescent athletes significantly predicted their ego goal orientation. In addition, the hypothesis that the task goal orientation mean would not be significantly moderated by sex was supported; however males did not have a higher ego goal orientation, as hypothesized. The hypothesis that the variable relationships would not be moderated by sex was supported for eight of the ten possible relationships. Overall, these results support a high caring, task-involving, and low ego-involving climate can be perceived by highly competitive adolescent athletes to be created by their coaches. One benefit of this positive psychosocial climate is the promotion of both male and female athletes' task goal orientation.

Prior research has demonstrated that compared to an ego-involving climate, athletes' competence, enjoyment, and commitment to sport participation have been positively predicted by caring and task-involving climates (Boixadós, Cruz, Torregrosa, & Valiente, 2004; Fry & Gano-Overway, 2010; Newton et al., 2000). In addition, athletes' competence, intrinsic motivation, and commitment have also been positively predicted by their task goal orientation (Rottensteiner, Tolvanen, Laakso, & Konttinen, 2015). The current study extended prior research by showing the caring climate fostered male athletes' task goal orientation above and beyond the task-involving climate. It has been argued in the literature that both a caring and task-involving climate are important and may take on differing levels of predictive importance for different outcomes or groups of individuals (Iwasaki & Fry, 2016; Hogue, Fry, & Iwasaki, 2018).

This initial study seems to suggest that female adolescent athletes' task goal orientation is more strongly linked to the experience of a high task-involving climate and low ego-involving climate, so that the emphasis is on personal improvement, effort, and cooperative learning, rather than on intra-group competition, comparison to norms, and punishing mistakes. The importance of the high task-involving climate for the female athletes may be related to the high task-involving coach's encouragement to utilize mistakes as learning opportunities and not something to be afraid of. Female athletes have been found to be more highly influenced by teachers and coaches as their socializing agents than family and peers (Eccles, Freedman-Doan, Frome, Jacobs, & Yoon, 2000; Greendorfer, 2013). Compared to the male athletes (R^2 = 31%), the task goal orientation of the female athletes (R^2 = 11%) was less strongly predicted by the ODP experience, which may suggest the female athletes' regular, non-ODP soccer team climate has a greater influence on their goal orientations.

The above difference may be explained by the importance of the caring climate for

the males compared to females, which could be due to males perceiving caring coaching behaviors less regularly outside of the ODP experience compared to females. The philosophy of the ODP with these age groups is to emphasize development, and not competition. The ODP coaches were expressing their care for the players as individuals, not solely their soccer capabilities. Coaches are more likely to be intrinsically motivated to coach and support their athletes' basic psychological needs when they perceive support from their administration and other coaches (Rocchi & Pelletier, 2017). Coaches of competitive male athletes can experience a lack of administrative and parental support to create a caring climate (Claunch & Fry, 2016). The education coaches need about promoting caring climate characteristics (Claunch & Fry, 2016) is less likely to occur when there is not administrative support. The current study results provide evidence for the positive effect (i.e., increased task goal orientation) experiencing a caring climate can have on male athletes. Research may be warranted to examine the current climate of competitive club teams and support for coaches creating a caring climate from competitive club administration, parents, and fellow coaches. Education about the importance of creating a caring climate may be important for administrators and parents to ensure competitive club coaches feel supported creating a caring climate.

Educating coaches about how to promote a caring climate also aligns with recommendations for physical activity programs as contexts for youth social-emotional and life skill development by first providing youth with a safe space where they feel cared for (Hellison, 2011; Hellison & Cutforth, 1997). Although, primarily implemented to support development of youth in at risk areas, the current study adds to previous studies with youth highlighting the importance and benefit of experiencing a highly caring, task-involving, and low ego-involving climate (Fry & Gano-Overway, 2010; Gano-Overway, et al., 2009; Newton et al., 2000; Smith et al., 2009; Smoll et al., 2007). Soccer coaching licensure

primarily teaches coaches how to structure practices, teach skills progressively, and provide instructional feedback. While these behaviors align with aspects of creating a task-involving climate; behaviors that align with aspects of creating a caring climate are not necessarily included in licensure education. Despite the consistent research support for the benefits of fostering a highly caring, task-involving and low ego-involving climate, there is still more that needs to be done to disseminate this information and practical recommendations to coaches about behaviors and interaction practices (Larson & Silverman, 2005) that will effectively promote this climate.

The means for both male and female athletes in the current study suggested that the adolescents were holding a high task (M = 4.76-4.78) and moderately high ego goal orientation (M = 3.95-4.00). In a recent meta-analysis (Lochbaum, et al., 2016) researchers reported means for task (M = 4.35, 95% CI [4.27, 4.42]) and ego (M = 3.43, 95% CI [3.32, 3.54]) goal orientations measured with the POSQ. Comparing the current study means to the CIs for the means from this meta-analysis, the mean for both the males' and females' goal orientations in the current sample were significantly higher. Different from patterns found in this recent meta-analysis of goal orientations in sport, the mean values for both ego and task goal orientations were similar for males and females, with their ego values being closer to those reported by collegiate athletes than youth athletes in previous research. Holding goal orientations as youth similar to collegiate athletes may be a reflection of competing at highly competitive levels throughout the year that prepare them to qualify for their age group's ODP pool.

Although there was not a mean difference in the athletes' goal orientations based upon sex, there was a sex difference within this sample regarding how the goal orientations related to each other. Specifically, the males' goal orientations were correlated (sharing 1% of variance; see Figure 1). Similar magnitude correlations have been seen between these

theoretically orthogonal constructs among athlete samples (Lochbaum et al., 2016). In the current study, the most likely reason for this correlation is the age group surveyed, as it was selected specifically because individuals in this age group are developing a differentiated understanding of ability, luck, and effort; thus, enabling them to also hold an ego goal orientation. Therefore, this correlation is likely partially due to at least some of the boys not having fully differentiated these concepts. This would mean a reading of the item "I feel most successful in soccer when I am the best" may not seem that different from "I feel most successful in soccer when I do my very best" (Duda & Nicholls, 1992) Replications of Nicholls' (1989) and Fry's (2000a, 2000b) work in the academic and physical realms, respectively, could determine if today's youth are cognitively developing at different rates than in the 1980's and 1990's.

As with all studies this one has some limitations. The sample was intentionally targeting competitive athletes ages 12-14 to capture the age range when the cognitive development phases studied by Nicholls are being completed. Therefore, the study results do not necessarily generalize to non-competitive or recreational athletes of the same age range. As the effect of a caring climate on athletes' goal orientations had not been previously studied this was also a cross-sectional design. The results of this study partially supported the theoretically driven predictive relationships we had hypothesized and provide support for future research examining these relationships longitudinally. Such research would also benefit from collecting samples sizes large enough to examine differences or changes in goal orientations, their relationship with each other, as well as with the climate variables over time and age.

While there has been some research on what influences coaches' effectiveness (Horn, 2008; Jowett, 2017; Myers, Vargas-Tonsing, & Feltz, 2005), further research is needed to continue examining the characteristics of coaches and their teams that maximize the

opportunity for athletes to experience positive youth development (Newland, Newton, Moore, & Legg, 2019) through a high caring, task-involving, and low ego-involving climate. Follow-up qualitative and mixed method research would aid in illuminating why and how the caring climate positively influenced boys' adoption of a task goal orientation. Information from these methods could be applied by coaches of boys and girls, thus increasing players' motivation to improve both skills and relationships with peers. Finally, future evidence-based coaching interventions incorporating this information could increase the effectiveness of coaches' intentional positive youth development.

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Table 1.

Frequency of Participants' Soccer, Competitive Soccer, ODP, & Other Sport Experience

Player Characteristics by Team	'03 girls (*n* = 38)		'03 boys (*n* = 42)		'02 girls (*n* = 59)		'02 boys (*n* = 30)	
	n	%	*n*	%	*n*	%	*n*	%
Playing Other Sports								
Yes	25	66	21	50	40	68	15	50
No	13	34	21	50	19	32	15	50
Prior Try-Outs for ODP (years)								
0	11	39	21	50	15	25	17	57
1	26	68	17	41	33	56	10	33
2	1	3	3	7	6	10	3	10
3	—	—	—	—	4	7	—	—
4	—	—	—	—	1	2	—	—
Highest ODP Level Ever Reached								
State Pool	18	47	21	50	23	39	16	53
State Team	6	16	6	14	9	15	4	13
Regional Pool	12	32	8	19	18	31	5	17
Regional Team	—	—	1	2	7	12	3	10
National Pool	1	3	3	7	2	3	2	7
Years Playing Travel/Competitive Soccer								
0	1	3	—		1	2	1	3
1	—	—	2	5	1	2	1	3
2	5	13	6	14	2	3	1	3
3	9	24	9	21	6	10	4	13
4	5	13	8	19	14	24	7	23
5	8	21	8	19	13	22	8	27
6	7	18	5	12	16	27	5	17
7	3	8	3	7	5	9	1	3
8	—	—	1	2	1	2	—	—
9	—	—	—	—	—	—	2	7
Years Playing Soccer (Any Level)								
0	—	—	—	—	1	2	—	—
3	1	3	—	—	—	—	—	—
4	1	3	—	—	—	—	—	—
5	—	—	2	5	3	5	—	—
6	—	—	7	17	7	12	3	10
7	6	16	6	14	7	12	4	13
8	12	32	11	26	9	15	2	7
9	12	32	12	29	16	27	12	40
10	6	16	4	10	15	25	8	27
11	—	—	1	3	7	12	1	3

Table 2.

Variable Correlations, Means, Standard Deviations, and Cronbach's Alpha Values

	1	2	3	4	5	*M*	*SD*	Reliability
1. Ego-involving MC	—	-.02	**-.22**	**.44**	.05	2.34	1.06	.85
2. Task-involving MC	.05	—	**.57**	-.01	**.33**	4.26	.74	.78
3. Caring Climate	.10	**.50**	—	.01	**.22**	4.42	.55	.92
4. Ego GO	**.43**	.13	.25	—	.09	3.95	.91	.90
5. Task GO	.12	**.48**	**.57**	**.47**	—	4.76	.35	.83
M	2.12	4.34	4.43	4.00	4.78			
SD	.92	.65	.51	.91	.34			
Reliability	.85	.83	.92	.92	.82			

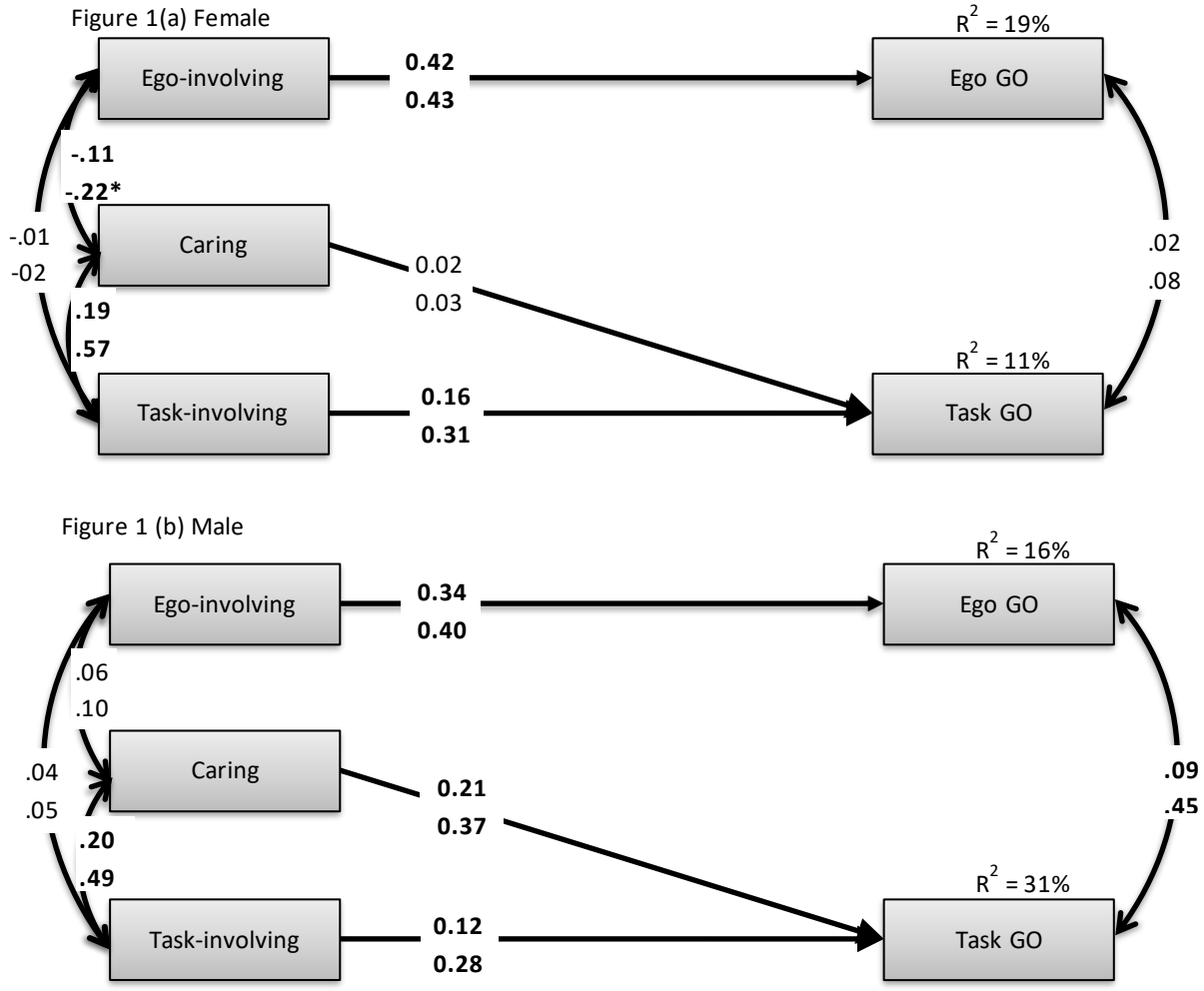
Note. The male values are on the bottom half of the table; the female values on the top, right half of the table. The significant correlations are in bold. All correlations ≥ .33 significant at .01 level, other correlations significant at .05 level. Reliability values reported are Cronbach alpha coefficient values.

Table 3. Path Model Fit Statistics

Model Description: Invariance/equality test	χ^2	*df*	CFI	NNFI	SRMR	RMSEA	90% CI	$\Delta\chi^2$	Δ *df*	p
2-group: No Constraints	0.00	0	1.00	1.00	.00	.000	.000, .000			
2-group: Hypothesized Model	7.06	6	.993	.976	.046	.046	.000, .154	7.07	6	.315
2-group: Homogeneity of variances - omni	3.04	5	1.00	1.00	.049	.000	.000, .115	3.04	5	.694
2-group: Homogeneity of means - omni	6.30	10	1.00	1.00	.057	.000	.000, .078	3.26	5	.660
2-group: Homogeneity of covariances - omni	31.92	20	.920	.920	.091	.084	.014, .016	25.62	10	.004
2-group: Homogeneity of covariances - except Goal Orientations	23.52	19	.970	.968	.082	.053	.000, .114	17.22	9	.045
2-group: Homogeneity of covariances - except Goal Orientations & Caring with Ego-involving MC	18.38	18	1.00	.997	.075	.016	.000, .099	12.08	8	.148

Figure 1.

Path Analysis Model for (a) Female and (b) Male ODP players' Goal Orientations



Note. Unstandardized regression weights and covariance values above standardized values. Bold values are significant at .007; * significant at .03. All values are from the hypothesized model. χ^2_6 = 7.064, CFI = .993, TLI = .976, SRMR = .046, RMSEA = .046 [.000, .154]