2 × 2 ACHIEVEMENT GOALS PROFILES IN CHILEAN COMPETITIVE AND RECREATIONAL ATHLETES: A FIRST LOOK

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Abstract. *Purpose:* was to examine the 2 × 2 achievement goal profiles of Chilean young adults regularly participating in competitive and recreational sport. *Materials:* participants were 108 female and 132 males who were recruited from the Valparaiso and Viña del Mar areas of Chile. Participants completed a valid and reliable measure of the 2 × 2 achievement goals referenced to sport participation. *Results:* indicated that the entire sample significantly ($p < .05$) and very meaningfully (Hedges' g range 1.13 - 2.91) endorsed the mastery-approach goal more so than the other three achievement goals. Male participants significantly ($p < .05$) endorsed both approach goals and the mastery goal contrast more so than the female participants. These differences approached medium in meaningfulness (Hedges' g range .40 - .46). Significant differences did not exist between competitive and recreational athletes on any of the achievement goals or goal contrasts. Confirming the lack of significant differences were the computed small to negligible in magnitude effect sizes. *Conclusions:* the present data were a first look into profiling sport participants on the 2 × 2 achievement goals in Chile. Given this sample of Chilean participants endorsed the performance goals far less than found in the sport psychology 2 × 2 achievement goal literature, more research is needed before these results are generalized to Chilean sport participants. Future research must also examine the relationships of antecedents and consequences to the 2 × 2 achievement goals to advance sport psychology in Chile.
Keywords: approach, avoidance, achievement, goals, contrasts, athlete, sex differences.

Introduction

The majority of social-cognitive studies regarding sport motivation are related to achievement goal theory. Achievement goal theory studies have been conducted in the sport environment across the globe in countries such as France [1], Turkey [2], Spain [3], and USA [4]. Achievement goal theory focuses on two main goals that define the purpose of achievement driven behavior. These two goals are mastery, task or learning goals and performance, ego or win goals [5-7]. Goal orientations are distinguished by their reference of personal competence [5].

The mastery or task goal orientation defines competence and success in terms of task mastery and/or task improvement. Individuals endorsing a mastery orientation are focused on skill development, learning new skills, demonstrating mastery and working hard. The performance orientation, in contrast, defines competence and success in normative terms, for example, by winning or outperforming others. This dichotomous achievement goal model has been widely used in achievement contexts. For instance, Lochbaum and colleagues [8] have reported on 236 such studies using the dichotomous achievement goal framework in competitive sport contexts.

Elliot and colleagues [9-11] argued that goal orientation frameworks should be revised to include the distinction between approach and avoidance motivations because of conflicting results with the performance or ego goal relationships with achievement behaviors. An approach goal indicates a behavior that is initiated by a positive or desirable event or possibility. In contrast, an avoidance goal indicates a behavior which is initiated by a negative or undesirable event or possibility. Elliot and his colleagues [9-11] initially proposed a trichotomous achievement goal framework including the mastery goal and performance-approach and performance-avoidance goals. The performance-approach goal indicates a desire to attain normative competence in terms of doing better than others, whereas the performance-avoidance goal indicates a desire to avoid normative incompetence in terms of doing worse than others. The trichotomous goals framework continues to be examined in the sport and physical activity literature [12].

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Building upon the trichotomous framework, Elliot and McGregor [13] proposed four types of goals. Thus, a 2 × 2 achievement goal framework that is derived by combining mastery versus performance as one dimension and approach versus avoidance as the second dimension. The performance-approach and performance-avoidance goals are identical to those in the three-factor framework. The mastery-approach goal focuses on task-based or intrapersonal competence by striving to master a skill, whereas the mastery-avoidance goal avoids task-based or intrapersonal incompetence by striving to not perform a skill more poorly compared to a previous performance.

Meta-analytic research has demonstrated that Elliot's 2 × 2 achievement goals have been researched extensively in many countries in sport, exercise, and physical education contexts [14, 15]. The approach goals are very important as both are meaningfully related in experimental, prospective, and cross-sectional studies to performance in a variety of physical activity and sport situations [14]. In addition to the importance of both approach goals to performance, contrast scores (i.e. mastery-approach goal – mastery-avoidance goal; performance-approach goal – performance-avoidance goal) are also predictive of sport performance [4, 14]. Thus, measuring both approach and avoidance goals are of importance in sport psychology research especially when related to performance.

One clear omission to date is the lack of investigations in many sporting countries around the world with achievement goals. Based on Lochbaum and his colleagues' approach-avoidance achievement goal meta-analyses [14, 15] as well as his recent dichotomous achievement goal review [8], no achievement goal research appears to exist in the published literature with a Chilean sample. Hence, we examined the 2 × 2 achievement goal profiles in competitive and recreational Chilean sport participants in this study.

Purpose, materials and methods

The purpose of the research was to obtain preliminary information about the achievement goal motivational structure of Chilean athletes from Elliot's 2 × 2 framework. In achieve our purpose, 108 female and 132 male participants were recruited from the Valparaiso and Viña del Mar areas of Chile with an average age of 22.00 $\pm$ 3.29 (age range 18 – 38). Informed consent approved by Pontifical Catholic University of Chile was obtained from all of the participants. The research was carried out via an online survey link. Participants in both competitive (n = 132) and recreational (n = 89) sports were specifically recruited. The competitive sport participants (62 females; 70 males) were from a number of sports such as basketball, rugby, volleyball, soccer, gymnastics and tennis while the recreational participants (46 females; 43 males) were in recreational activities such as aerobic dance and yoga as well as in traditional sports such as soccer, Taekwondo, and swimming.

The 2 × 2 Achievement Goals Questionnaire for Sport translated in Spanish [3] was used in the present investigation to measure the 2 × 2 achievement goals (mastery-approach: "it is important to me to as well as I possibly can"; performance-approach: "it is important for me to do well as compared to others"; mastery-avoidance: "I worry that I may not do as well as I possibly can"; and performance-avoidance: "I just want to avoid being worse than others") at the dispositional level. The scale has three statements per achievement goal using a Likert type scale. This measure has demonstrated acceptable psychometric properties since its inception [16] as well as the Spanish version [3] used in this investigation. The questionnaire required participants to rate their agreement with each statement on a scale from 1 (*not at all true of me*) to 7 (*very true of me*). A higher score on any of the achievement goal subscales indicates a stronger orientation toward that achievement goal. Participants responded to the following statement, "When competing in sport, I…"

The achievement goal contrasts were calculated following past research in the sport context [4]. All goals were first standardized prior to the contrast calculation (performance contrast = $z$performance-approach – $z$performance-avoidance; mastery contrast = $z$mastery-approach – $z$mastery-avoidance. Using standardized scores gives all goals equal weight in the contrast calculation.

Results of the research

A number of analyses were carried out to examine the collected data. All data are found in Table 1-4. Table 1 contains the intercorrelations and descriptive data for the entire sample. Table 2 contains the results for the paired t-tests amongst the 2 × 2 achievement goals for the entire sample. Table 3 (competitive and recreational samples) and Table 4 (male and female samples) contain the descriptive data, univariate statistics, and effect size data for the two conducted multivariate analysis of variance (MANOVA) with sex and sport level as the independent variables in both analyses. For the first MANOVA, the 2 × 2 achievement goals were the dependent variables. For the second MANOVA, the two achievement goal contrasts were the dependent variables. Hedge's g and partial eta squared (η_p^2) were calculated and used to interpret the results in terms of meaningfulness. Cohen's [17] guidelines for effect sizes magnitudes were followed to interpret Hedge's g such that a g of .20 was consider small, .50 medium, and .80 large. In addition, η_p^2 was interpreted as .01 as small, .06 as moderate, and .14 as large [18].

As detailed in Table 1 and Table 2, the mastery-approach goal was the dominant goal. This goal was significantly ($p < .001$) and meaningfully larger than the other three goals with effect size values of 1.13, 1.78, and 2.91 for mean differences between the mastery-avoidance, performance-approach, and performance-avoidance goals, respectively.

Table 1. Correlations, means, standard deviations, and reliability coefficients for the entire sample

Variables	MAp	MAv	PAp	PAv	*M*	*SD*	Reliability
MAp	1.00	.26*	.20*	-.06	6.32	.82	.72
MAv		1.00	.29*	.33*	5.03	1.39	.68
PAp			1.00	.60*	3.86	1.77	.83
PAv				1.00	2.79	1.50	.71

Note. * $p \leq .001$; MAp = mastery-approach; MAv = mastery-avoidance; PAp = performance-approach; PAv = performance-avoidance.

The pattern of differences amongst the other goals was as follows. The mastery-avoidance goal was endorsed significantly and very meaningfully more than both performance-approach ($g = .73$) and performance-avoidance ($g = 1.54$) goals. The performance-approach goal was endorsed significantly and medium in meaningfulness ($g = .65$) more than the performance-avoidance goal. Except for the performance goal correlation, the goals were mostly independent. The scale had adequate reliability (Cronbach alpha range .68 - .83).

Table 2. Results for paired *t*-tests amongst the 2 × 2 achievement goals

Paired Differences						
			95% Confidence Intervals			
Comparison	*M*	*SD*	Lower	Upper	*t*	*p*
MAp – MAv	1.29	1.42	1.10	1.48	13.49	< .001
MAp – PAp	2.46	1.79	2.23	2.70	20.40	< .001
MAp – PAv	3.53	1.75	3.29	3.76	29.84	< .001
MAv – PAp	1.17	1.92	.92	1.43	9.07	< .001
MAv – PAv	2.23	1.67	2.01	2.46	19.82	< .001
PAp – PAv	1.06	1.47	.86	1.25	10.69	< .001

Note. MAp = mastery-approach; MAv = mastery-avoidance; PAp = performance-approach; PAv = performance-avoidance.

For the MANOVA with the 2 × 2 achievement goals as the dependent variables, the results revealed a significant and medium in meaningfulness multivariate effect for sex, Wilk's $\lambda = 0.91$; $F(4, 214) = 5.06$, $p < .01$, $\eta_p^2 = 09$. The multivariate effect for sport level (i.e. competitive or recreational) and the sex by sport level interaction were not significant (all sport level data found in Table 3).

Table 3. Means, standard deviations, univariate statistics, and effect size values for the sport level

	Sport Level						
	Competitive		Recreational		Univariate Statistics		ES
Variables	*M*	*SD*	*M*	*SD*	*F*	*p*	*g*
MAp	6.38	.80	6.24	.85	1.31	.25	.17
MAv	5.16	1.44	4.85	1.29	2.76	.09	.22
PAp	4.01	1.84	3.62	1.64	2.12	.14	.22
PAv	2.80	1.41	2.77	1.63	.02	.88	.02
MC	-.02	1.34	.03	1.00	.20	.65	-.09
PC	.08	.97	-.11	.73	2.18	.14	.21

Note. ES = effect size; MAp = mastery-approach; MAv = mastery-avoidance; PAp = performance-approach; PAv = performance-avoidance; MC = mastery contrast; PC = performance contrast

As found in Table 4, the follow-up univariate *F*-tests were significant for both approach goals. The difference between the males and females approached medium in meaningfulness (*g*'s = .46 and .40) for both approach goals. For the achievement goal contrast MANOVA (see Table 3 for competitive and recreational data and Table 4 for male and female data), the results revealed a significant and small to medium in meaningfulness multivariate effect only for sex, Wilk's $\lambda = 0.95$; $F(4, 216) = 5.35$, $p < .01$, $\eta_p^2 = 05$. As found in Table 4, the follow-up univariate *F*-test was significant for the mastery-approach goal contrast. The difference ($g = .45$) between the males and females on the mastery contrast approached medium in meaningfulness. Though not significantly different at the traditional level ($p < .05$), the effect size difference ($g = .33$) between the males and females on the performance contrast approached medium in meaningfulness.

Table 4. Descriptive data, univariate statistics, and effect size values for sex analyses

	Sex of Sample				MANOVA		
	Males		Females		Univariate Statistics		ES
Variables	*M*	*SD*	*M*	*SD*	*F*	*p*	*g*
MAp	6.50	.60	6.13	.97	11.41	<.01	.46
MAv	4.97	1.41	5.10	1.36	.146	.70	-.09
PAp	4.20	1.75	3.50	1.72	7.48	<.01	.40
PAv	2.87	1.52	2.70	1.48	1.15	.28	.11
MC	.26	1.13	-.28	1.24	9.54	<.01	.45
PC	.14	.87	-.15	.89	3.43	.06	.33

Note. ES = effect size; MAp = mastery-approach; MAv = mastery-avoidance; PAp = performance-approach; PAv = performance-avoidance; MC = mastery contrast; PC = performance contrast

Discussion

To date, no research has examined Chilean participants and the 2 × 2 achievement goals in sport. Hence, this descriptive study was unique and a step forward for sport psychology motivation research in Chile. A number of observations based on the results are warranted. First, the mean data are very different in magnitude when compared to published sport psychology data. For instance, the performance goal values are lower in the Chilean participants than American recreational sport participants [4, 19] and competitive athletes from a number of countries [1, 3, 20]. Interestingly, the current Chilean sample's performance-approach mean data are more in line with fitness based recreational participants across a number of American investigations [22-24] as well as a Spanish investigation [25].

When examined from an independent/interdependent culture framework as in past achievement goal research [26], the performance goals conceptually should have been endorsed to a greater extent in the present sample. The independent/interdependence framework states that interdependent or collectivist countries are more socially aware. Thus, performance or other based achievement goal orientations should be more prominent. Within the dichotomous achievement goal framework, there are data to support more interdependent cultures endorsing ego or other based achievement goals more so than independent cultures [8].

The next observation concerns the intercorrelations. For the most, the intercorrelations mirror Lochbaum and colleagues' findings nicely. Lochbaum and colleagues' [15] meta-analyses of the intercorrelations amongst the achievement goals was based on more than 12,000 participants. Only the performance-approach and performance-avoidance intercorrelation in the present investigation strayed a bit higher from the meta-analytic results. Even so, the performance goals are not too similar to be of concern in the current Chilean sample. Hence, the achievement goals are fairly independent constructs and supports future research moving ahead with confidence in Chilean samples.

Last, the pattern of data suggested that sex of sample and not competitive level is important in the present sample. Males endorsed the approach goals more so than the females. Though for the master-approach goal, both males and females strongly endorsed this goal with the mean value being close to the top of the scale range. Endorsing a mastery-approach goal is important as it is related to many adaptive achievement behaviors such as better sport performance [14]. These results are very different than reported by Lochbaum and his colleagues' meta-analyzed results for sex differences [15]. The meta-analyzed sex differences for each goal indicated no meaningful differences [15]. Hence, future research in Chile must explore whether the present results are simply an artifact or enduring differences between males and females in Chile.

Conclusions

1. Sport psychology research and applied services are valued across the globe. Expanding sport psychology research to Chile is an important first step in order to increase awareness and applied sport psychology services.
2. More research is needed to determine if the much lower than expected performance goal means are artifact. Compared to other samples, the present sample with competitive and recreational sport participants is more similar to recreational fitness based samples. Though all Chilean sport participants should benefit in achievement contexts from endorsing the mastery-approach goal, they may be missing out on the benefits of endorsing a performance-approach goal in the same achievement contexts.
3. Future research should seek to understand if previously and extensively researched antecedents [15] and outcomes [14] are related in Chilean sport and recreational participants. Understanding antecedent and outcome relationships will greatly enhance achievement motivation research in Chile.

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