Commitment to Strength and Conditioning: A Sport Commitment Model Perspective

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Abstract

Weiss, WM and Halupnik, D. Commitment to strength and conditioning: A sport commitment model perspective. J Strength Cond Res 27(3): 718–722, 2013—The purpose of this study was to empirically apply the sport commitment constructs within the realm of strength and conditioning. Based on prior research in the sport domain, it was predicted that higher enjoyment, investments, benefits, and social support and lower perceived costs and attractive alternatives would predict higher commitment to strength and conditioning. With a sample of 191 intercollegiate male and female athletes, a pilot study was conducted to examine the predictors of commitment to strength and conditioning. Multiple regression analysis revealed that the strongest predictors of strength and conditioning commitment were perceived investments, benefits, enjoyment, costs, and attractive alternatives. Interestingly, differences emerged between men and women regarding the most salient predictors of commitment to strength and conditioning. Gender differences also emerged with male athletes reporting higher perceptions of enjoyment, benefits, and perceived obligation to their best friend to continue participation, whereas social constraints is the perceived obligation to these important others to continue participation (3,9). The sport commitment model and enhancing athletes’ motivation (5). The SCM is a theoretical model that helps to explain what predicts athletes’ on-going psychological commitment to sport (1,3,4). Sport commitment represents the “in-the-head” decision to continue and persist. Several constructs are thought to predict athletes’ psychological commitment: enjoyment, involvement opportunities or benefits, personal investments, attractive alternatives, perceived costs, social constraints, and social support (3,10). Enjoyment is the liking for or pleasure derived from participation, whereas involvement opportunities are the benefits or perks one receives through participation that would not otherwise be gained, such as team affiliation, recognition, and obtaining tangible rewards (1,6,10). Personal investments represent everything that the athlete has put into participation that could not be “regained” if they were to discontinue (e.g., effort, time, energy, money). Higher enjoyment, investments, and involvement opportunities have been related to higher sport commitment (9).

In contrast, attractive alternatives and perceived costs tend to have a negative influence on sport commitment (6,10). Attractive alternatives are how alluring other activities seem in comparison with one’s current sport participation (e.g., hanging out with friends, playing a different sport). Perceived costs represent the downsides to competitive sport, such as injury, boredom, or too time consuming. Lastly, social constraints and social support represent the social influence components of the SCM. Social support is unconditional positive regard and encouragement from important others, whereas social constraints is the perceived obligation to these important others to continue participation (3,9). Theoretically, it was hypothesized that higher social support and social constraints would predict higher commitment; however, empirical research has revealed mixed results (1,6,9,10).

Waldron and Troupe (5) made the argument that the SCM was applicable to strength and conditioning and committed or motivated for competitive sport participation, but when it comes to the additional training that strength and conditioning programs require, these same athletes may demonstrate poor commitment behaviors, such as low effort, intensity, or frequency. Thus, for many strength and conditioning coaches, fostering or enhancing athletes’ commitment and motivated behavior is challenging.

Application of the Sport Commitment Model (SCM) may be one way for strength and conditioning coaches to enhance athletes’ motivation (5). The SCM is a theoretical model that helps to explain what predicts athletes’ on-going psychological commitment to sport (1,3,4). Sport commitment represents the “in-the-head” decision to continue and persist. Several constructs are thought to predict athletes’ psychological commitment: enjoyment, involvement opportunities or benefits, personal investments, attractive alternatives, perceived costs, social constraints, and social support (3,10). Enjoyment is the liking for or pleasure derived from participation, whereas involvement opportunities are the benefits or perks one receives through participation that would not otherwise be gained, such as team affiliation, recognition, and obtaining tangible rewards (1,6,10). Personal investments represent everything that the athlete has put into participation that could not be “regained” if they were to discontinue (e.g., effort, time, energy, money). Higher enjoyment, investments, and involvement opportunities have been related to higher sport commitment (9).

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that by applying these concepts strength and conditioning coaches could actually increase athletes’ commitment. By enhancing athletes’ perceptions of social support, enjoyment of, and perceptions of the benefits associated with strength and conditioning, then athletes’ commitment to the activity should increase. Additionally, by decreasing the perceived alternatives and downsides associated with strength and conditioning, this could also increase commitment. Waldron and Troupe provided several examples and practical strategies for the application of these concepts for strength and conditioning coaches that could be implemented in day-to-day training. For example, strength and conditioning coaches can facilitate motivation and commitment simply by creating interesting and varied workouts that are fun to complete through competition or challenging tasks.

However, despite the seemingly obvious link between the SCM and strength and conditioning, no one has yet to test this relationship empirically. Therefore, the purpose of this pilot study was to empirically apply the SCM to the strength and conditioning context. We were interested in which predictors were the most important for strength and conditioning commitment, and any potential gender differences that exist. Based on prior research in the sport domain, we hypothesized that higher strength and conditioning enjoyment, investments, and benefits, and lower perceived costs and attractive alternatives would predict higher psychological commitment to strength and conditioning (1,3,4,6,9,10). Additionally, we were curious if what predicts strength and conditioning for men vs. women may be different, which suggests that strength and conditioning coaches would need to employ different methods for each gender to enhance commitment. Because of the lack of previous research exploring or demonstrating gender differences in regards to sport commitment constructs, no hypotheses were put forth.

**METHODS**

**Experimental Approach to the Problem**

Waldron and Troupe (5) made a theoretical argument that the SCM could help explain motivated behaviors in the realm of strength and conditioning and provided several examples of how to implement practices based on the SCM. This study attempts to empirically test the SCM within strength and conditioning. Research has yet to explore predictors of commitment to strength and conditioning based on the SCM. This motivational theory makes both theoretical and practical sense when applied to strength and conditioning. The current pilot study is a first attempt to examine the applicability of the SCM empirically. To determine the most salient predictors of commitment to strength and conditioning, a quantitative, survey method was used. Measures designed to tap each predictor (enjoyment, benefits, investments, attractive alternatives, costs, and social support and constraints from coaches, teammates, and best friends) and commitment to strength and conditioning were used. To determine the most salient predictors, forced entry multiple regressions were used for the sample as a whole and separately for each gender. Strength and conditioning commitment was the dependent variable, and enjoyment, benefits, costs, investments, attractive alternatives, and social support and constraints from coaches, teammates, and best friends were the independent variables. To determine group differences, an analysis of variance and multivariate analysis of variance (MANOVA) were used, with group as the independent variable and commitment and it’s predictors as the dependent variables.

**Subjects**

After approval from the University’s institutional review board, a total of 191 intercollegiate athletes (men n = 97, women n = 94) competing in 12 different sports participated in this study. All the participants read and signed informed consents. Participating athletes were either currently competing or involved with “off-season-postseason” training. The majority of athletes were required to attend strength and conditioning sessions a minimum of 3 times per week in addition to their regularly scheduled practices and competitions. Ages ranged from 18 to 23 years (M = 19.5, SD = 1.3). The sample consisted primarily of white athletes (84%) with African American athletes (9.3%) and those who reported as being “Other” (4.6%) also represented. Approximately, 48% of the athletes reported being a “starter,” 19% reported being a “nonstarter,” and about 20% reported being a “redshirt” (e.g., currently on the team, but not competing) or “medical hardship” (e.g., currently not competing because of injury).

**Procedures**

The participants were recruited to complete the questionnaire during a team meeting either before or immediately after a practice or strength and conditioning session. All the athletes were reminded that their participation was voluntary and were asked to read and sign the informed consent. Time to complete the questionnaire ranged from 15 to 25 minutes. The athletes completed measures designed to tap strength and conditioning commitment constructs. Based on Scanlan et al.’s (4), a total of 33 items assessed athletes’ perceptions of strength and conditioning commitment, enjoyment, investments, attractive alternatives, and social constraints. Additionally, the athletes completed 4 questions for both perceived benefits and perceived costs as designed by Raedeke (2). All the items were answered on a 5-point Likert scale, ranging from 1 (“not at all”) to 5 (“very much so”). Items were modified slightly by changing the word “sport” to “strength and conditioning program.” All the measures have demonstrated adequate reliability and validity in past studies with similar participants (1,2,4,6–10).

**Statistical Analyses**

Reliability analyses were first conducted on all the measures and subscales. Additionally, correlations were conducted.
between all constructs to determine if any multicollinearity effects needed to be taken into account. Then, to test the first hypothesis of determining the salient predictors of strength and conditioning commitment, a forced entry multiple regression was conducted with enjoyment, investments, benefits, costs, attractive alternatives, and social constraints as the predictor variables, and strength and conditioning commitment as the outcome variable. Next, a MANOVA was conducted to determine if differences existed between men and women on the predictors of and sport commitment. Gender was the independent variable, and commitment along with the predictors was the dependent variable. Lastly, separate forced entry multiple regressions were conducted for men and women to determine the significant predictors of commitment for each gender.

**Results**

**Preliminary Analyses**

Cronbach’s alphas were calculated for all subscales used in this study. Each subscale achieved adequate reliability ($\alpha > 0.70$). For investments, 1 item (“How much money have you put into your strength and conditioning program?”) was deemed unreliable based on intraclass correlations and item statistics. Thus, this item was deleted, which changed the alpha level for the investments scale from 0.67 to 0.84. Additionally, “I have to continue my strength and conditioning because my coach has done so much for me” was deemed unreliable and deleted from the coach social constraints subscale, changing the alpha from 0.66 to 0.69. See Table 1 for means and SDs for all constructs and correlations and scale alphas (along the diagonal).

Correlations among the subscales were in the expected theoretical directions. Enjoyment, investments, benefits, and social constraints from teammates, best friend, and coaches were positively related to strength and conditioning commitment, whereas perceived costs and attractive alternatives were negatively related to commitment. Because of multicollinearity between commitment and investments ($r = 0.64$) and enjoyment ($r = 0.62$), it was decided to conduct an analysis of variance (ANOVA) to determine gender differences on strength and conditioning commitment.

**Predictors of Strength and Conditioning Commitment**

To test our hypothesis, a forced entry multiple regression was first conducted with the entire sample to determine which constructs were significant in predicting athletes’ commitment to their strength and conditioning programs. The regression was significant: ($p < 0.0001$, $R = 0.80$, CI 0.74–0.84). According to Cohen, this would constitute a large effect. Using standardized Beta weights, perceived investments ($\beta = 0.40$), benefits ($\beta = 0.11$), enjoyment ($\beta = 0.24$), costs ($\beta = -0.11$), and attractive alternatives ($\beta = -0.22$) emerged as the significant predictors of commitment. Uncertainty of the betas ranged from ±0.15 to ±0.25 (95% confidence limits). Thus, higher investments, benefits and enjoyment, and lower costs and attractive alternatives predicted higher strength and conditioning commitment.

**Gender Differences on Commitment Constructs**

An ANOVA was conducted to first determine if gender differences existed for athletes’ commitment to their strength and conditioning programs. The ANOVA was significant ($p < 0.0001$). Analysis of the means revealed that men reported significantly higher commitment to strength and conditioning than women (95% confidence intervals: men ±0.11, women ±0.12). Next, a MANOVA was conducted to compare men’s and women’s perceptions of the predictors of commitment. The MANOVA was significant ($p < 0.0001$) with a total of 29% of the variance accounted for by group differences. Men and women differed significantly on perceived benefits (95% CI: ±0.12 for both men and women), enjoyment (95% CI: ±0.18 for men and women), and best friend social constraints (95% CI: ±0.20 for men and women). Specifically, men reported higher perceptions of benefits, enjoyment, and perceived obligation to their best friends than did women. Please see Table 2 for the mean and SDs for each construct by gender.

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**Table 1. Correlations, alpha coefficients, and descriptive statistics for commitment constructs.**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Commitment</td>
<td>0.79</td>
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<td></td>
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<tr>
<td>2. Enjoyment</td>
<td>0.64</td>
<td>0.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. Benefits</td>
<td>0.43</td>
<td>0.46</td>
<td>0.86</td>
<td></td>
<td></td>
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<td></td>
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<td>4. Investments</td>
<td>0.62</td>
<td>0.39</td>
<td>0.34</td>
<td>0.84</td>
<td></td>
<td></td>
<td></td>
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<td>5. Attractive alternatives</td>
<td>−0.51</td>
<td>−0.57</td>
<td>−0.20</td>
<td>−0.20</td>
<td>0.90</td>
<td></td>
<td></td>
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<tr>
<td>6. Costs</td>
<td>−0.33</td>
<td>−0.34</td>
<td>−0.05</td>
<td>0.43</td>
<td>0.43</td>
<td>0.74</td>
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<td>7. Coach SC</td>
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<td>−0.15</td>
<td>0.23</td>
<td>0.37</td>
<td>0.15</td>
<td>0.15</td>
<td>0.69</td>
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<td>8. Teammate SC</td>
<td>0.18</td>
<td>0.02</td>
<td>0.27</td>
<td>0.18</td>
<td>0.07</td>
<td>0.06</td>
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<td>9. Best friend SC</td>
<td>0.29</td>
<td>0.20</td>
<td>0.27</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.28</td>
<td>0.42</td>
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<td>$M$</td>
<td>4.20</td>
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<td>4.42</td>
<td>2.70</td>
<td>2.12</td>
<td>4.02</td>
<td>3.70</td>
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<tr>
<td>$SD$</td>
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<td>0.94</td>
<td>0.63</td>
<td>0.56</td>
<td>1.00</td>
<td>0.74</td>
<td>0.83</td>
<td>0.95</td>
<td>1.03</td>
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</tbody>
</table>

*SC = social constraints (alphas seen along the diagonal).
Predictors of Commitment for Men

A separate forced entry multiple regression was conducted for male athletes to determine which were predictors were most salient. The regression was significant ($p < 0.0001$, $R = 0.77$, CI 0.68–0.84), again indicating a large effect size. Investments ($\beta = 0.46$), enjoyment ($\beta = 0.21$), best friend social constraints ($\beta = 0.26$), and perceived costs ($\beta = -0.15$) predicted commitment to strength and conditioning. Uncertainty in the betas ranged from $\pm 0.17$ to $\pm 0.35$ (95% confidence limits). Thus, higher investments, enjoyment, and best friend social constraints and lower costs predicted higher commitment for male athletes.

Predictors of Commitment for Women

Lastly, a separate forced entry regression was conducted to determine the salient predictors of commitment for female athletes. The regression was significant $p < 0.0001$, $R = 0.83$ (CI 0.75–0.88), which also indicates a large effect. For women, investments ($\beta = 0.42$), enjoyment ($\beta = 0.20$), and attractive alternatives ($\beta = -0.32$) predicted strength and conditioning commitment, with uncertainty of the betas ranging from $\pm 0.28$ to $\pm 0.34$. Thus, higher investments and enjoyment, and lower attractive alternatives predicted higher commitment.

DISCUSSION

The purpose of this pilot study was to empirically apply the SCM within the strength and conditioning context. Additionally, we wanted to determine the salient predictors of strength and conditioning commitment. We predicted that higher enjoyment, investments, and benefits, and lower perceived costs and attractive alternatives would predict higher strength and conditioning commitment. Findings revealed support for this hypothesis with higher pleasure and liking, more invested time and energy, greater perceived perks associated with participation, fewer perceived downsides, and lower perceived attractiveness of alternative activities predicted higher “in-the-head” commitment to strength and conditioning. Depending on gender, the commitment picture looked slightly different in that pleasure, invested effort and time, perceived obligation to their best friend, and low perceptions of the negatives associated with strength and conditioning predicted commitment for male athletes. In contrast, for women, lower attractive alternatives, but higher enjoyment and investments predicted higher commitment.

The direction of influence of the various constructs was similar to much of the research exploring sport commitment (1,4,6,9,10) and consistent with our hypothesis. However, enjoyment has emerged has the strongest predictor of commitment in past sport research (1,4,6,9), but in this study, perceptions of the invested time, energy, and effort was the strongest predictor, regardless of gender. It seems as if the athletes are very much aware of the additional time and effort that strength, conditioning, power, and agility programs demand of them which translates to greater motivation and commitment.

Awareness of the attractiveness of other activities was a negative predictor of commitment for the sample as a whole and also for the female athletes. This finding is consistent with our hypothesis and with past research exploring commitment to sport (1,6,9,10). Similarly, the perceived downsides associated with strength and conditioning (e.g., boredom, takes too much time) also emerged as an important negative predictor of commitment for the sample as a whole and for men. This finding is consistent with those in the sport domain (9,10). Thus, it becomes critical for strength and conditioning coaches to decrease perceptions of the negatives associated with strength and conditioning, and the attractiveness of other activities, perhaps by increasing how alluring and interesting strength programs can be.

Within the realm of competitive sport, few gender differences have been revealed in relation to sport commitment (1,3,4). However, in this study, men reported greater perceived obligation to continue to their best friend, which predicted higher commitment. This was the only social influence construct to emerge as a predictor. Research in the sport domain has shown mixed results in regards to both social support and social constraints, with some studies showing a positive relationship (9), others a negative relationship (9), and still others, no relationship (1,6,10).

PRACTICAL APPLICATIONS

Based on findings from this study, strength and conditioning coaches should work to increase athletes’ enjoyment, perceived investments, and benefits to strength and conditioning, and to decrease the perceived downsides associated and attractiveness of alternative activities. Perceptions of invested
time, energy, and effort emerged as the strongest predictor of commitment, thus strength and conditioning coaches should continue to emphasize the time and effort athletes put into the weight training, power development, and agility work. The more aware athletes are of this time and energy commitment, the more likely they will continue to put forth energy and effort, which in turn should result in an increase in performance. Strength and conditioning coaches can also work with each head coach to not only emphasize the importance of the strength and conditioning program but also to provide adequate time for these types of workouts (5).

Enjoyment also emerged as a strong predictor of commitment, regardless of gender. If athletes enjoy what they are doing, then they will continue to participate. By creating unique, interesting workouts, varying types of workouts, and providing an upbeat, positive, motivating atmosphere, coaches can greatly increase athletes’ enjoyment. Additionally, by using public displays to showcase improvements and gains, giving rewards for personal goals being met, and by empowering athletes through their workouts, strength and conditioning coaches can enhance athletes’ liking of the activity (5).

Interestingly, for men, perceptions of obligation to their best friend emerged as a positive predictor of commitment. This suggests that male athletes feel a responsibility to their friends to work hard at strength and conditioning. To enhance this, strength and conditioning coaches could arrange training schedules so that athletes are working out with their friends and their peers monitor attendance and effort of each other (5). Perceptions of costs or the downsides and negatives associated with strength and conditioning was a negative predictor of commitment for men. Thus, strength and conditioning coaches should work to minimize the potential negatives associated with training: keep workouts interesting and varied, incorporate games or competition, create workouts that are time efficient, and continually emphasize the benefits or perks associated with working hard in strength and conditioning (e.g., increased speed, agility, power).

In contrast, the attractiveness of other activities acted as a deterrent to being committed to strength and conditioning for female athletes. That is, other things seemed more interesting or more fun than strength and conditioning workouts. To decrease the allure of these competing activities and interests, strength coaches need to make strength and conditioning workouts seem more attractive by increasing the amount of enjoyment, keeping workouts varied and stimulating, and providing rewards and praise. Additionally, if strength coaches are flexible by allowing athletes to participate at times in an alternative activity, such as attending another sporting event with friends, then perhaps this will decrease the curiosity and need to engage in these activities all the time (5). Thus, by allowing athletes to participate in other things to some degree, this will decrease the attractiveness of that activity.

The bottom line is that strength and conditioning coaches can enhance athletes’ commitment to strength and conditioning programs through their daily interactions and workouts with these athletes. Workouts need to stay “spicy,” interesting, challenging, and in many ways, fun. People work harder when they enjoy the task; thus, coaches have a responsibility to create an atmosphere that facilitates enjoyment and benefits (e.g., improvements, rewards). By altering workout groups, strength and conditioning coaches enhance peer relationships that indirectly will influence motivation and commitment. Strength and conditioning coaches should use the concepts addressed by the SCM to create and develop workout sessions that enhance commitment.

Finding ways to increase athletes’ motivation and commitment to strength and conditioning is a constant goal for all involved. The SCM provides us with a theoretical and practical framework to do just that. Strength and conditioning coaches should continue to work to increase perceptions of enjoyment, benefits, and investments and decrease perceived attractive alternatives and costs associated with strength and conditioning. Additionally, different tactics may need to be implemented depending on whether the coach is working with male or female athletes. This study is the first to empirically test the application of the SCM in the realm of strength and conditioning. These findings provide a foundation on which future research exploring commitment to strength and conditioning can build.

REFERENCES