Why Coaches should Encourage Swimmers' Efforts to Succeed

Bård Erlend Solstad and Pierre-Nicolas Lemyre

The Norwegian School of Sport Sciences
Department of Coaching and Sport Psychology
PO Box 4014 Ullevål Stadion
0806 Oslo, Norway

ABSTRACT
Achievement Goal Theory (AGT; 11, 21) assumes that properties of the achievement situation in which swimmers find themselves are central to the motivation process. The premise of this line of research is that athletes' experiences in sports and their interpretation of those experiences influence the degree to which a mastery-involving motivational climate or an ego-involving motivational climate are perceived as salient. Thus, the focus of the current study was to assess how mastery-involving or ego-involving motivational climates arise from different types of coaching behaviors. Additionally, we examined how perceived motivational climates, associated to different coaching behaviors, influenced important parameters, such as intrinsic motivation, subjective well-being, and athlete burnout. Participants were 202 swimmers (range 14-24, M = 16.4, SD = 2.3), who represented competitive levels from novice competitors to world championship athletes, but where the majority of the athletes had competed up to the national level. Results revealed that swimmers perceived a mastery-involving climate when their coaches emphasized positive reinforcement, mistake-contingent encouragement, corrective instruction given in a positive and encouraging fashion, and proper technical instruction. On the other hand, coaching behavior emphasizing punitive technical instruction was associated with the perception of an ego-involving climate on the swim team. Further, analyses revealed a positive association between the perception of an ego-involving climate and symptoms of athlete burnout, while the perception of a mastery-involving climate was associated with higher levels of intrinsic motivation and subjective well-being.

INTRODUCTION

Previous studies have demonstrated that the coach is considered the architect of the motivational climate (29). In the context of swimming, if the coach creates a mastery-involving climate emphasizing the learning process, skill development, and personal improvement, then swimmers are more likely to be mastery-involved. On the other hand, if the coach creates an ego-involving climate emphasizing normative feedback, interpersonal competition, and public evaluation, then swimmers are more likely to be ego-involved (11). The coach's goal preference becomes obvious through choices of tasks, drills, and learning activities, whether swimmers are involved in decision making, how performances are evaluated and swimmers are divided into groups, and finally how feedback is given (21).

Assessing the interaction between motivational dispositions and the coach-created motivational climate, AGT argues that an individual's desire to develop and demonstrate competence or ability is the energizing construct of an achievement behavior. Nicholls (11)

suggested that more than one conception of ability exists, and that these different conceptions of ability will have different consequences in terms of cognitive and affective responses when performing a task. Two conceptions of ability are present in achievement contexts, namely an undifferentiated concept of ability (e.g., task involvement), where the individual is concerned about learning, understanding something more fully, and solving problems; and a differentiated concept of ability (e.g., ego involvement), where the individual is more concerned about demonstrating normative ability.

It has been suggested (e.g., 21, 28) that the coach-created motivational climate is an important factor influencing an athlete's performance state in the sport context. Additionally, previous research (e.g., 21) has linked a mastery-involving climate to positive affect and intrinsic interest in the sport context, while an ego-involving climate has been inversely related or unrelated to the same outcomes. Further, Cumming & colleagues (2) demonstrated that athletes express higher levels of enjoyment when they participate in a team environment encouraging them to understand that success resides in trying hard, and where the coach used private evaluation feedback.

Further, when swimmers participate in a mastery-involving climate, Nicholls (11) argues that: "the activity will be experienced more as an end in itself" (p. 87). Hence, it is argued that intrinsic motivation is fostered when swimmers are task-involved, whereas it is reduced when swimmers are ego-involved (23). Specifically, swimmers who are task-involved are more likely to perceive to be more in control when meeting the demands of an achievement task because they are focusing on their personal improvement, and thus maintaining high perceived competence (21). Additionally, previous research (e.g., 6, 10, 23) has linked the perceived motivational climate to intrinsic motivation. For example, Kavussanu and Roberts (6) found in their study that perception of a mastery-involving climate was an important predictor of athletes' intrinsic motivation.

However, it is when sport involvement consistently emphasizes normative criteria of success that young swimmers become at risk for negative participation outcomes (8). Studies have reported that when swimmers perceive the motivational climate on their team as being ego-involving they become more at risk for experiencing injuries, recovery problems, exhaustion, and athlete burnout (5, 7). Issues associated with exhaustion and burnouts in young swimmers are relatively common in youth swimming (9). They are usually brought upon an intense and consistent devotion to an unrealistic goal. Burnout issues are typically characterized by three sub-dimensions, namely the feeling of being emotionally and physically exhausted, experiencing a reduced sense of accomplishment, and finally devaluating the sport experience (15, 16). Young swimmers showing signs of burnout will typically lack motivation to train and compete, as well as showing low levels of energy and enjoyment (7).

Accordingly, there is a need to understand the mechanisms creating optimal athletic environments for growth and development in swimming. Thus, the goal of the current study was to assess the influence of the coach's behavior on the intrinsic motivation and well-being indices of young swimmers.

METHOD

Participants

A total of 202 youth swimmers from 15 Norwegian swimming clubs participated in this study. Clubs from Oslo (n = 8), Bergen (n = 5), Hamar (n = 1), and Kristiansand (n = 1) were represented. The sample consisted of 99 (49 %) male and 103 (51 %) female participants, and their age ranged from 14 to 24 years (M = 16.4, SD = 2.3). On average, participants had participated in swimming for 6.6 years (SD = 2.4 years), received coaching from their head coach for 2.1 years (SD = 1.5 years) and spent 8.0 hours (SD = 3.2 hours) per week training. The competitive levels of the swimmers participating in this study ranged from novice competitors to world championship athletes, but where the majority of the swimmers had competed at the national level.

Procedure

This study received appropriate consent from the Regional Ethics Committee. After obtaining permission from head coaches, we visited the different swimming clubs on their team practice and invited swimmers to complete a comprehensive assessment package under the supervision and guidance of the research group. Swimmers were informed that participation in the study was voluntary and that their responses would be kept confidential.

Measures

This study used Norwegian versions of the questionnaires described below. Also, the questionnaire obtained standard demographic information from the participants and it asked participants to provide swimming-specific information (e.g., highest level of competition completed, training volume, length of time participating in swimming, length of time receiving coaching from the head coach).

Perceived Motivational Climate. The Motivational Climate Scale for Youth Sports (MCSYS; 28) is an age-appropriate measure of the coach-initiated motivational climate. Swimmers indicated their level of agreement with statements, such as “The coach encouraged us to learn new skills”. Items were scored on a 5-point Likert scale ranging from “not at all true” (1) to “very true” (5).

Athlete Burnout. Burnout was measured by the 15-item Athlete Burnout Questionnaire (ABQ; 16). Swimmers were asked to indicate on a 5-point Likert scale ranging from “almost never” (1) to “almost always” (5) how often they felt or thought in a special way during the current athletic season.

Subjective Well-Being. Well-Being was measured by the 6-item Subjective Vitality Scale (SVS; 22) and the 10-item positive affect subscale of the Positive Affect Negative Affect Schedule (PANAS; 30). More specifically, the SVS is scored on a 7-point Likert scale ranging from “not at all true” (1) to “very true” (7) and the PANAS on a 5-point Likert scale ranging from “not at all” (1) to “extremely” (5).

Intrinsic Motivation. Intrinsic motivation was measured by the 4-item subscale of the Situational Motivation Scale (SIMS; 4). Swimmers were asked to indicate on a 7-point Likert

scale ranging from "corresponds not all" (1) to "corresponds exactly" (7) why they were currently engaged in swimming.

CBAS-PBS. Swimmers' perceptions of coaching behavior were measured using the CBAS – PBS (CBAS-PBS; 26). The stem for each question is "Circle the number that indicates how often your head coach did". Swimmers indicated on a 7-point Likert scale ranging from "never" (1) to "almost always" (7) how often their head coach engaged in each class of behavior.

Analysis

The structural model predicting swimmers' psychosocial outcomes was estimated by using Mplus version 7.11 (1). More specifically, structural equation modeling is using thresholds for Goodness-of-fit (GOF) indexes to determine the fit of the model. The fit indices that are usually used are the chi-square test, the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), the standardized root-mean-square residual (SRMR), and the root-mean-square error of approximation (RMSEA) combined with its 90% confidence interval. Hence, the thresholds values often used are: CFI/TLI ≥ .95, RMSEA ≤ .06, and SRMR ≤ .08 (1). The SEM-analysis indicated that the model had an acceptable fit: χ^2 (132) = 184.162, p = .0018, SRMR = .05, RMSEA = .04, (90% confidence interval around RMSEA = .03 to .06), Probability RMSEA <= .05 = .73, CFI = .95, TLI = .94.

Table 1

Estimated Correlation Matrix for the Latent Variables

	1	2	3	4	5	6	7
1.Mastery Climate	1						
2.Ego Climate	-.224	1					
3.Supportive Coaching Behaviors	.546	-.269	1				
4.Punitive Coaching Behaviors	-.479	.613	-.651	1			
5.Intrinsic Motivation	.278	-.322	.316	-.422	1		
6.Subjective Well-Being	.405	-.180	.430	-.344	.673	1	
7.Athlete Burnout	-.256	.291	-.298	.378	-.607	-.724	1

Table 2
Effect of Perceived Motivational Climate on Swimmers' Psychosocial Outcomes in Competitive Swimming

Predictive	**Standardized Regression Coefficients**
Mastery-involving Climate	
Predicted	
Intrinsic Motivation	.22
Subjective Well-Being (positive affect, subjective vitality)	.38
Athlete Burnout	-.20
Perceived Supportive and Instructive Coaching Behaviors	.51
Perceived Punitive Coaching Behaviors	-.36
Predictive	
Ego-involving Climate	
Predicted	
Intrinsic Motivation	-.27
Subjective Well-Being (positive affect, subjective vitality)	N.S.
Athlete Burnout	.25
Perceived Supportive and Instructive Coaching Behaviors	N.S.
Perceived Punitive Coaching Behaviors	.53

*N.S. = Non-Significant

DISCUSSION

Findings in the current study supported the predictions of AGT (11, 21), and previous studies that have examined coaching behavior in the youth sport context (e.g., 24, 26, 27). The SEM-analysis indicated that a mastery-involving climate was a significant predictor of coaching behaviors that were supportive and instructive in nature. As expected, swimmers are more inclined to perceive a mastery-involving climate when their coach encourages them to work hard, expresses that mistakes are part of the learning process, and tells them to exert high degrees of effort if they want to improve their performance over time (29). In regard to the perceived motivational climate, Smith (25) argues that coaches have the ability to foster a mastery-involving climate by reinforcing swimmers' effort, persistence, and improvement. By doing so, the coach can make all swimmers, regardless if they perceive themselves as possessing high or low ability, feel successful and competent. This is because all swimmers have the ability to learn something new, improve their athletic skills, master a new task, and give maximum effort.

Newton & Duda (10) characterized an ego-involving climate as one where swimmers will receive punishment if they perform worse than others, receive negative evaluation feedback if they are not among the best athletes on their team, and perceive increased pressure from their coach to outperform other teammates. Our results indicated that an ego-involving climate was a significant predictor of coaching behaviors that were punitive in nature. Based on the arguments made by Smith (25), we know that coaches who

reinforce swimmers who outperform other teammates and punish unsuccessful performance are more likely to create an ego-involving climate and arouse fear among their swimmers. Obviously, swimmers who participate in an athletic environment that emphasizes ego-involvement and who receive punishment and punitive technical instructions, underlying what they are doing wrong in a hurtful way, are more likely to perceive themselves as having less competence than their peers.

Study findings supported the argument made by Lemyre & colleagues (9); that the risk of developing burnout symptoms increases when athletes perceive an ego-involving climate. Indeed, Nicholls (11) has argued that: "working under these different conceptions of ability will have related consequences for the experience of interest or enjoyment in a task performance" (p. 86). Why is this so? The majority of swimmers in the current study had competed at the national level, and some had even competed at the European and/or World Championships. Participation at this competitive level means that swimmers have to spend many hours in the swimming pool on a daily basis to improve their physical skills, which means that they are heavily exposed to the coach-created motivational climate. Clearly, it is much more adaptive for swimmers to be encouraged by their coach to believe that hard work and practice will lead to improved performance, rather than to demonstrate superiority relative to others (21).

Hence, it is reasonable to suggest that various aspects of training can be related to the development of burnout symptoms. Swimming is an endurance sport, which requires athletes to dedicate much of their spare time to extensive training over a number of years. In regard to training hours per week, athletes in this study reported that they spent an average of eight hours per week training. If athletes are not training during school vacation, then we can estimate that they exercise 38 weeks of the year, and have a total of around 300 training hours each year. These findings are in line with findings from the ones found by Gustafsson & colleagues (3), who examined the burnout process in three elite endurance athletes. Participants in this study reported that they spent somewhere between 6.8 and 9.4 hours per week training, and trained for 23 to 50 weeks of the year. Their total annual training hours were between 230 and 398. The results suggested that some of the reasons why these athletes experienced burnout were that they perceived pressure from significant others to perform well, felt that they were involved in sport because they had to, had a desire to be number one, had high training loads during the competitive season, and did not allow themselves to recover well enough. Some of these reasons are clearly in line with an ego-involving climate (21).

Other studies (e.g., 6, 13, 14, 17, 18) have shown that a mastery-involving climate is positively related to both intrinsic motivation and subjective well-being outcomes. On the theoretical side, the current study supports AGT's (11) proposal that swimmers will experience training as more intrinsically satisfying when coaches emphasize task-involvement rather than ego-involvement. Some studies have linked well-being to perceived competence (19), and findings have shown that autonomous motivation produces higher levels of well-being (12, 20). Consequently, a mastery-involving climate will encourage all athletes, also those who perceive themselves as less competent, to understand, learn, and develop new athletic skills, and thereby making sure that athletes

achieve a sense of competence while participating in the achievement environment (11). There is also reason to believe that athletes will prefer to participate in environments where coaches emphasize task-involvement because they are given some choice and control in relation to their own participation. Nix and colleagues (12) emphasize that well-being should be maintained, or enhanced, if athletes achieve success at behaviors that are autonomously regulated.

CONCLUSION

The way coaches relate to their athletes and the achievement standards they emphasize, have an impact on athletes' intrinsic motivation and subjective well-being (18, 21, 24). The current study suggests that coaches can improve athletes' well-being and optimize their achievement motivation by creating a mastery-involving climate. Finally, these findings are noteworthy as participants of the current study were very representative of the general competitive swimmer population across the country as they ranged in age from 14 to 24 years, represented 15 of the most important swimming clubs, while they had competed at all different competitive levels.

Limitations

This study has some limitations that readers should keep in mind when interpreting the findings. Because of the cross-sectional design of the study, no cause and effect relationship can be established.

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