



ISSUE TWO

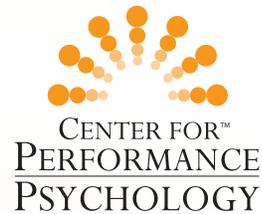
TRANSTHEORETICAL MODEL: *EXAMINING READINESS FOR PSYCHOLOGICAL SKILLS TRAINING*

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Dear Reader,

Welcome to the August 2011 issue of the *Journal of Performance Psychology*. The *Journal's* mission is to make performance psychology research and applied techniques accessible to a wide range of performance populations. Articles focus upon the research and application of performance psychology techniques with athletic, military, corporate, or fine arts populations, and incorporate practical suggestions that can be applied by leaders in each realm.

The *Journal* continues to seek articles through its blind review process, and submission guidelines can be found on the *Journal's* webpage and within this issue.

I would like to thank those who serve on the *Journal's* staff and its Editorial Board and hope that we can continue to reach out to researchers, clinicians, athletes, and peak performers to bridge the gap between research and practice.

I hope you find this issue of interest, and as we continue to seek new research and ideas, I hope that you will share your ideas with us. I look forward to hearing from you.

Sincerely,

Charles "Mac" Powell, Ph.D.
Editor-in-Chief
Journal of Performance Psychology



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*EXAMINING READINESS FOR
PSYCHOLOGICAL SKILLS TRAINING*

William V. Massey, *University of Wisconsin-Milwaukee (wvmassey@gmail.com)*

Barbara B. Meyer, *University of Wisconsin-Milwaukee (bbmeyer@uwm.edu)*

Stephanie J. Hatch, *University of Wisconsin-Milwaukee (sjhatch@uwm.edu)*

The purpose of this study was to evaluate the use of the Transtheoretical Model (TTM) in a population of athletes who had no prior exposure to a sport psychology consultant. Participants (n = 203) completed stage of change, decisional balance, and self-efficacy questionnaires (Leffingwell, Ryder, Williams, 2001). Results suggest that a majority of athletes with no previous exposure to a sport psychology consultant may not be ready for action-oriented Psychological Skills Training (PST) programs. Similarities between the results of the current study and previous research (Leffingwell et al., 2001) provide support for the use of the TTM to guide the PST process in this population of athletes. That is, the stage approach utilized in the TTM may provide sport psychologists with a framework to facilitate athlete readiness to change prior to implementation of a psychological skills training regimen.



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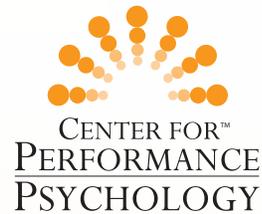


INTRODUCTION

Sport psychology research and practice have been in existence for almost a century, during which time scholars and professionals alike have made ongoing efforts to learn more about the psychosocial variables related to enhanced athletic performance. From internal variables such as personality (Otten, 2009), achievement motivation (Gucciadi, 2010), anxiety (Morris & Kavassanu, 2009), and self-efficacy (Brown, Malouff, & Schutte, 2005), to external variables such as athletic performance (Martin, Vause & Schwartzman, 2005), group cohesion (Rovio, Eskola, Kozub, Duda, & Lintunen, 2009), and the media (Hatch, Mackenzie, Massey, & Meyer, 2010; Rowe & Gilmour, 2010), numerous factors have been considered in an effort to better understand the development and maintenance of performance excellence. Although researchers have amassed an extensive body of literature examining both internal and external variables related to sport performance, the efficacy and maintenance of sport psychology interventions remains a notable concern for professional practice.

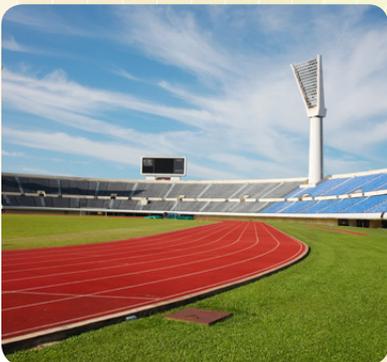
In a review of intervention research, Martin et al. (2005) identified 15 intervention studies that met the criteria of rigorous experimental research. The results of 14 of these studies indicated a positive effect of the intervention on sport performance, yet only two studies included a follow-up assessment. In neither of these two studies were intervention maintenance effects demonstrated, a result in stark contrast to the positive outcomes measured immediately following many of the interventions highlighted therein. The lack of longitudinal designs, post-intervention follow-up, and maintenance effects is not consistent with research in other helping professions (Johnson et al., 2006; Schumann et al., 2005), which prompts scholars to call into question the efficacy of sport psychology interventions and the rigor with which they have been studied.





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Evidence of longitudinal data confirming post-PST intervention performance gains has long been a gold standard in the field of sport psychology, yet a paucity of literature exists examining the maintenance effects of these interventions (Martin et al., 2005). Given the limitations inherent in longitudinal research and the dynamic nature of sport performance, causal inferences between psychological interventions and sport performance remain problematic (Grove, Norton, Van Raalte, & Brewer, 1999). Additionally, the use of performance as an outcome measure may be inappropriate for studies aimed at developing life skills (Petitpas, Van Raalte, Cornelius, & Presbrey, 2004) or recovering from injury (McCrea et al., 2003). These findings, in conjunction with the aforementioned concerns with the use of performance as an outcome measure, prompt the suggestion that an internal measure of behavior change may be appropriate to consider (Pizzari, Taylor, McBurney, & Feller, 2005). While less frequently examined in the sport performance domain, a failure to maintain the benefits of a psychological intervention may be tied to an individual's readiness to engage in the intervention (Miller & Rollnick, 2002). Therefore, an individual's readiness to change may play a role in the effectiveness and long-term maintenance of psychological interventions in sport, and ultimately an athlete's ability to maintain performance gains. This gap in the sport psychology literature highlights a need to examine an individual's stage of behavior change before the implementation of a performance-related intervention. In the following sections, we provide an overview of the Transtheoretical Model (TTM) of behavior change, the stages of behavior change, and literature examining use of the TTM in Psychological Skills Training (PST).

TRANSTHEORETICAL MODEL OVERVIEW

The TTM of behavior change is based on the premise that an individual progresses through five hierarchical stages (i.e., precontemplation, contemplation, preparation, action, maintenance) as he or she intentionally tries to modify a



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problematic behavior (e.g., cessation from smoking; Everson, Taylor, & Ussher, 2010), or adopt a positive behavior (e.g., adherence to a PST routine; Leffingwell, Ryder, & Williams, 2001). Central to the model is the decision-making process an individual uses to progress through the stages of change (Prochaska, 2008). According to the TTM, behavior change is a process rather than a one-time occurrence (Prochaska, 2008), during which an individual moving through the stages will relapse an average of three times before the new behavior is adopted. (Prochaska, DiClemente, & Norcorss, 1992).



Movement through the stages on the way to one's ultimate goal is mediated by motivation and readiness to change (Marshall & Biddle, 2001). When an athlete is confronted with new information (e.g., a lack of concentration is causing performance decrements) or new alternatives (e.g., practicing concentration skills can increase on- and off-field performance), he or she must engage in a decision-making process. This decision-making process is affected by decisional balance and self-efficacy concerning one's ability to change the behavior. Previous TTM research (Sun, Prochaska, Velicer, & Laforge, 2007) suggests that perceived gains involved in changing or maintaining one's behaviors (e.g., a decrease in stress as a result of learning new coping techniques) must outweigh perceived losses associated with change (e.g., loss of free time due to practice devoted to meditation) before an athlete decides that action towards a new behavior is warranted. Concurrently, as an athlete progresses towards a permanent change in behavior, self-efficacy for the new behavior increases with the largest gain thought to take place after action occurs (e.g., daily practice of mental skills) (Sarkin, Johnson, Prochaska, & Prochaska, 2001). Each stage of change involves a multi-faceted decision-making process that allows the athlete to progress forward, remain stagnant in their current behavioral patterns, or relapse to a previous stage.





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STAGES OF CHANGE

As described above, individuals progress through five stages of change en route to a new behavior. During the precontemplation stage of change, an athlete has no intention of changing behavior in the foreseeable future. This stage of change is unique to the TTM in that precontemplators are not separate from the behavior change process, but rather individuals for whom change is not yet a choice. Athletes in this stage are generally uninformed about the benefits of a change in behavior, or have unsuccessfully tried to change and become frustrated with reoccurring failures (Prochaska et AL., 1992).



During the contemplation stage of change, an athlete intends to change, but has not yet taken the necessary action steps to adopt a new behavior. The athlete recognizes the importance of making a change; however, the costs of making that change are equally salient, often resulting in the phenomenon of “chronic contemplation” (Prochaska, Redding, & Evers, 2002).



An athlete who is ready for an action-oriented treatment plan has entered the preparation stage of change. Athletes in this stage have made the choice to change their current behavior, often by taking steps toward, or creating plans to, achieve the more desired behavior (Prochaska, 2008). Athletes who are observed making specific changes to their behavior, and have met a set criterion for this behavior, are classified in the action stage of change. During this stage, action-oriented processes (i.e., stimulus management, counter conditioning, contingency management) are used to aide in the process of behavior change. An athlete whom has become confident in their new behavior with no imminent threat of relapse is then classified in the maintenance stage of change. While not completely free from risk of relapse, these athletes are more stable in their new behavioral patterns and are not using action-oriented processes of change



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as heavily as those in the action stage. The stage progression offered above represents only a template for the behavior change process, as each stage is dynamic. That is, an athlete may progress forward or relapse at any point in the behavior change process.

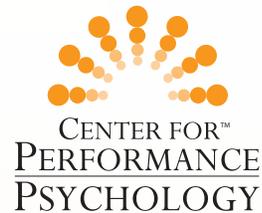


Since its introduction into both research and clinical practice, scholars have debated the use of the TTM to inform studies of behavior change. Criticisms of the TTM have ranged from an inability to capture the multi-faceted nature of human behavior (Bandura, 1997), to inappropriate intervention strategies (West, 2005) and low levels of effectiveness in stage-based interventions (Aveyard, Massey, Parsons, Manaseki, & Griffin, 2009). However, others have supported the use of the TTM in diverse areas such as smoking and addictive behaviors (Prochaska & DiClemente, 1982; Sun et al., 2007), exercise and physical activity (Marshall & Biddle, 2001), nutrition (Di Noia, Schinke, Prochaska, & Contento, 2006), HIV prevention (Hacker, Brown, Cabral, & Dodds, 2005), and stress reduction (Evers et al., 2006). While initially developed to study the cessation of unhealthy or dangerous behaviors, the TTM has since been applied to the adoption of positive behaviors such as a regular exercise routine. Therefore, it is reasonable to consider the application of the TTM to another positive behavior: adoption of a PST program designed to facilitate sport performance. To date, there are only two known studies examining the TTM in a sport psychology context (Grove et al., 1999; Leffingwell et al., 2001), prompting the suggestion to further examine the utility of the model as a theoretical framework and clinical tool in sport psychology.



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In the first known TTM study conducted in the sport performance domain, researchers (Grove et al., 1999) used a stage of change assessment to evaluate the effectiveness of a PST intervention in a sample of elite-level youth



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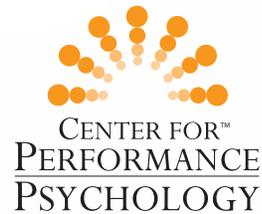
baseball players. Results of Kruskal-Wallis tests indicate no significant differences between athletes in the experimental and control groups on stage of change classification at pre-test ($p \leftarrow .60$). However, at post-test ($p \leftarrow .001$) and at a 3-month follow-up ($p \leftarrow .04$), athletes in the experimental group recorded significantly higher scores on the action and maintenance subscales than athletes in the control group.



In the other known study examining the TTM and PST, Leffingwell et al. (2001) developed assessment inventories (i.e., stage of change, self-efficacy, decisional balance) to test whether the TTM could be applied to PST consultation. The assessment inventories were cross-validated on two samples of collegiate athletes ($n = 149, 159$ respectively), at institutions offering both group and individual PST sessions via the athletics department. Chi-square analyses indicated that athletes in the contemplation, action, and maintenance stages were significantly ($p \leftarrow .01$) more likely to seek sport psychology information (i.e., read a book) or consult with a sport psychologist than athletes in the precontemplation stage. Additionally, results of Analysis of Variance (ANOVA) calculations indicated that athletes in the precontemplation stage reported significantly ($p \leftarrow .01$) higher levels of cons associated with PST (i.e., it might hurt my performance) than those in the action stage, and significantly ($p \leftarrow .01$) lower levels of pros (i.e., my self-confidence would increase) than athletes in any of the other stages. Consistent with previous TTM work, ANOVA results also indicated that individuals in the action stage reported significantly ($p \leftarrow .01$) higher levels of self-efficacy than athletes in any other stage. Finally, chi-square analysis revealed that a significantly ($p \leftarrow .01$) higher percentage of athletes in the contemplation and action stages consulted with a sport psychologist than athletes in the precontemplation and maintenance stages.



Results of these sport-specific studies demonstrate preliminary support for the application of TTM principles in sport psychology consultation. If adopted, the stage approach inherent in the TTM may facilitate readiness to engage in PST.



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Concurrently, these studies support the need to amass a stronger research base to appropriately integrate TTM principles into sport psychology practice. For example, results of the Leffingwell et al. (2001) study showed an adequate factor structure and good construct validity in a sample of collegiate athletes who had exposure and access to free sport psychology consultation. Research has yet to examine; however, the generalizability of TTM constructs to a population of athletes with no prior exposure to a sport psychology consultant. As popular press accounts of the value of sport psychology services continue to grow, it is reasonable to assume that the number of athletes seeking help will also grow, and that many of these athletes will have no prior experience with a sport psychology consultant. Therefore, the purpose of the current study was to evaluate the constructs of the TTM by examining patterns of decisional balance and self-efficacy across the precontemplation and contemplation stages of change in a population of athletes with no prior exposure to sport psychology consultants.

METHODS

PARTICIPANTS

Participants were high school ($n = 140$) as well as collegiate and semi-professional athletes ($n = 63$) representing both team ($n = 9$) and individual sports ($n = 9$). Average age of the participants was 17.4 years ($SD = 5.27$, Range = 14-51 years). The large majority of the sample identified as Caucasian (94%), followed by African-American (1.5%), Latino (1.5%), Asian-American (0.5%), and other (4.5%).



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INSTRUMENTATION

The TTM of behavior change is based on the premise that an individual progresses through five hierarchical stages (i.e., precontemplation, contemplation, preparation, action, maintenance) as he or she intentionally tries to modify a problematic behavior (e.g., cessation from smoking; Everson, Taylor, & Ussher, 2010), or adopt a positive behavior (e.g., adherence to a PST routine; Leffingwell, Ryder, & Williams, 2001). Central to the model is the decision-making process an individual uses to progress through the stages of change (Prochaska, 2008). According to the TTM, behavior change is a process rather than a one-time occurrence (Prochaska, 2008), during which an individual moving through the stages will relapse an average of three times before the new behavior is adopted (Prochaska, DiClemente, & Norcorss, 1992).



The Stages of Change Questionnaire, adapted from the original University of Rhode Island Change Assessment (URICA; McConaughy, Prochaska, & Velicer, 1983), Leffingwell et al. (2001), developed a 12-item stage of change assessment inventory used to assess stage of behavior change related to PST. Confirmatory factor analysis (CFA) indicated an adequate fit for utilization of the TTM with an athletic population (see Leffingwell et al., 2001). In the current study, individuals were excluded on the basis of prior involvement with a sport psychology consultant. Thus, it was deemed theoretically appropriate to only analyze data from scores in the precontemplation and contemplation stages of change. The internal consistency reliability for each subscale was estimated by computing alpha coefficients. These coefficients were reported as follows: precontemplation ($\alpha = .52$), contemplation ($\alpha = .69$). While .70 is generally an accepted alpha level, the statistic is sensitive to the number of items in a scale. Thus for shorter scales (i.e., a 12-item scale with four 3-item subscales) such as those used in the current study, lower alpha levels are acceptable (Nunnally & Bernstein, 1994).





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The Decisional Balance Questionnaire was used to assess the benefits (i.e., pros) and costs (i.e., cons) of participating in PST (see Leffingwell et al., 2001). In the current study, internal consistency reliability was estimated by computing alpha coefficients for the pros ($\alpha = .88$) and cons ($\alpha = .82$) of behavior change.

The Self Efficacy Questionnaire questionnaire measured athletes' perceived efficacy in their ability to work on and improve psychological skills for sport performance (see Leffingwell et al., 2001). Internal consistency reliability was estimated in the current study by computing alpha coefficients for the self-efficacy scale ($\alpha = .80$).



PROCEDURE

Permission to conduct the study was obtained from the Internal Review Board (IRB) at the authors' academic institution. Athletes completed either a paper-pencil or an online version of the questionnaires. While questionnaires were completed in two different formats, previous research suggests that online research is equivalent, if not superior, to traditional offline methods (i.e., paper-pencil) (Buchanan & Smith, 1999; Lonsdale, Hodge, & Rose, 2006; Meyerson & Tryon, 2003; Preckel & Thiemann, 2003). Following the precedent set by Leffingwell et al. (2001) standardized scores were used to classify stage of change. Thus, precontemplation and contemplation stage raw scores were converted into standardized T-scores, with stage classification being given to the highest standardized score. Decisional balance scores were also converted into standardized T-scores, while self-efficacy scores were calculated as a raw score.



Upon analysis, descriptive statistics were calculated for the sample. An independent samples t-test was conducted to examine differences in decisional balance (i.e., pros and cons), and self-efficacy across stage. The data file was then



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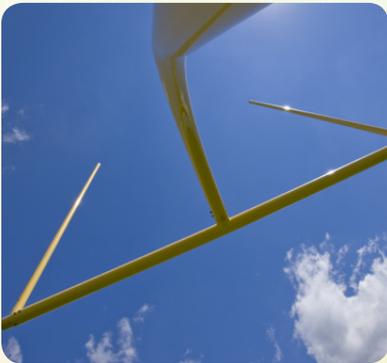


split based on stage classification and a one-sample t-test conducted to examine decisional balance differences within stage. A traditional alpha level ($p = .05$) was set to determine the statistical significance of the results. To control for Type I error, the Bonferroni adjustment was used to hold familywise error rate to .05. Thus, alpha levels were divided by three and only (p) values less than .017 were considered significant.

RESULTS

Descriptive statistics revealed 66% ($n = 134$) of participants in the current study were classified in the precontemplation stage, while 34 % ($n = 69$) of participants were classified in the contemplation stage.

An independent samples t-test was conducted to compare the pros scores for individuals in the precontemplation and contemplation stages, respectively. There was a significant difference between scores for individuals in precontemplation ($M = 45.86$, $SD = 10.42$) and individuals in contemplation [$M = 55.11$, $SD = 9.38$; $t(201) = -7.02$, $p = .000$], indicating that those in the contemplation stage perceived greater benefits to PST than those in the precontemplation stage. An independent samples t-test was conducted to compare the cons scores for individuals in the precontemplation and contemplation stages, respectively. There was a significant difference between scores for individuals in precontemplation ($M = 54.32$, $SD = 8.17$) and individuals in contemplation [$M = 44.22$, $SD = 10.03$; $t(201) = 7.71$, $p = .000$], indicating that individuals in the precontemplation stage perceived greater costs associated with PST than those in the contemplation stage. An independent samples t-test was conducted to compare the self-efficacy scores for individuals in the precontemplation and contemplation stages, respectively. There was a significant difference





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between scores for individuals in precontemplation ($M=16.59$, $SD=2.94$) and individuals in contemplation [$M=19.21$, $SD=3.17$; $t(199) = -5.82$, $p=.000$], indicating that those in the contemplation stage were more confident in their ability to adhere to a PST routine than those in the precontemplation stage.



The data file was then split based on stage classification. A one-sample t-test was conducted to examine decisional balance differences within stage. There was a significant difference between pros [$t(133) = 61.56$, $p=.000$] and cons [$t(133) = 77.01$, $p=.000$] for individuals in the precontemplation stage, indicating that the cons of PST outweighed the pros of PST for individuals in the precontemplation stage. There was also a significant difference between pros [$t(68) = 48.78$, $p=.000$] and cons [$t(68) = 36.60$, $p=.000$] for individuals in the contemplation stage, indicating that the pros of PST outweighed the cons of PST for individuals in the contemplation stage.



DISCUSSION

The concurrent growth of applied sport psychology and lack of empirical support for the long-term effectiveness of PST interventions prompt sport psychologists to continue to expand the boundaries of professional practice. Consistent with trends in other helping professions (i.e., health-related change, psychotherapy), we see increased interest in behavior change interventions as well as PST programs tailored to meet individual needs and promote long-term change (Miller & Rollnick, 2002). Accordingly, the purpose of the current study was to examine TTM principles vis-à-vis an individual's readiness to adopt a psychological training routine. To this end, decisional balance and self-efficacy scores of athletes in the current sample were examined to determine if these scores follow a similar pattern to past TTM research examining the change process.



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Results of the current study suggest that a majority of athletes with no prior exposure to a sport psychology consultant negatively perceive (i.e., cons outweigh pros) and have low self-efficacy towards PST, and therefore may not be ready for action-oriented programs. This negative view of PST may be due in part to the stigma attached to psychotherapy and related mental health services, including psychological services targeted toward athletic performance (Martin, 2005). Due to individual differences in prior experience with PST, not to mention individual differences in physical skills and psychological profiles, sport psychologists should not assume that all athletes on the same team will respond to PST in the same way. Consistent with best practices in other behavior change domains (Prochaska et al., 2004; Prochaska, Velicer, Fava, Rossi, & Tosh, 2001), stage-specific interventions should be tailored to the personal characteristics, environmental constraints, and stage of change of each athlete. Specifically, knowledge of an athlete's stage of change, as well as the decisional balance and efficacy beliefs involved in the change process, should facilitate design and delivery of an effective and individualized PST intervention.

While most of the athletes in the current study do not appear ready to take advantage of traditional action-oriented PST programs, support is provided for use of the TTM to guide the PST process in a population of athletes with no prior exposure to a sport psychology consultant. That is, the stage approach utilized in the TTM may provide sport psychologists with a framework to increase athlete readiness prior to implementation of an action-oriented PST routine. This view is supported by similarities between the current study and previous research (Leffingwell et al., 2001) with regard to patterns of decisional balance scores, and the increase in self-efficacy as an individual moves out of precontemplation.



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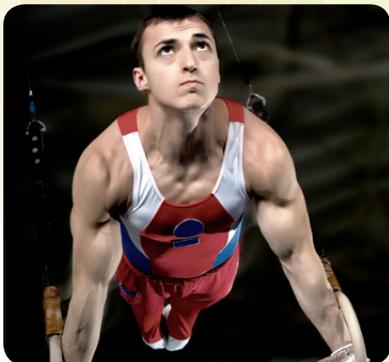


IMPLICATIONS FOR FUTURE RESEARCH AND PROFESSIONAL PRACTICE

Although results of the current study provide support for the use of the TTM to guide interactions with athletes who lack experience with or exposure to a sport psychology consultant, there is a need for additional research. Since the focus of this study was athletes with no prior exposure to a sport psychology consultant, we found it theoretically appropriate to only classify individuals in the precontemplation and contemplation stages. However, it is possible that participants in the current study had developed and adhered to their own PST program without the help of a professional, and were subsequently classified into the wrong stage of change. Thus, future research should examine, simultaneously, populations of athletes with and without exposure to PST. By requiring strict inclusion criteria for stage classification (e.g., must self-identify as such and not be participating in a PST program to be classified in precontemplation or contemplation, must self-identify as such and have participated in a formal PST program to be classified in action or maintenance), further testing of the TTM can be completed to determine its efficacy as a tool in sport psychology. Research utilizing true experimental designs is also needed to examine causal processes and stage progression in an athletic population. Future research should also examine a more diverse population of athletes with regard to age, skill level, and PST experience so as to create a stronger foundation for the applicability of the TTM in sport psychology.



The majority of athletes in the current study were characterized as perceiving a higher cost than benefit of PST, as well as presenting low-efficacy beliefs towards PST. These findings, in conjunction with generally low levels of adherence to multiple health behaviors (Huy, Thiel, Diehm, & Schneider, 2010), prompts us to suggest that athletes may not be ready for the action-oriented treatment approaches utilized in PST. In an effort to facilitate readiness for, adherence to, and the long-term performance gains associated with PST, sport psychologists would be prudent to continue to investigate stage-based behavioral interventions for enhanced athletic performance.





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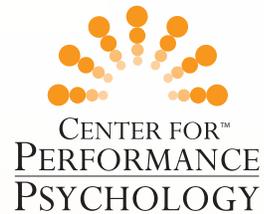
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