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The transtheoretical model and psychological skills training: Application and implications with elite female athletes

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The Transtheoretical Model and Psychological Skills Training: Application and
Implications with Elite Female Athletes

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Dissertation submitted to the
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at West Virginia University
in partial fulfillment of the requirements
for the degree of

Doctor of Education
in
Sport and Exercise Psychology

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ABSTRACT

The Transtheoretical Model and Psychological Skills Training: Application and Implications with Elite Female Athletes

Linda Ann Keeler, M.A.

There is abundant empirical evidence supporting the benefits of psychological skills training (PST) on performance (Vealey, 1994). Despite evidence of how PST can help athletic performance, some athletes still do not readily adopt its use (Gould, Tammen, Murphy, & May, 1989). Rather than ignoring individuals that are not interested (Weinberg & Williams, 2001), one possible method of approach would be to apply the transtheoretical model of behavior change (TTM) to the use of PST (Grove, Norton, Van Raalte, & Brewer, 1999). This model suggests that behavior change is a progression through a series of stages (Prochaska & DiClemente, 1983). There is a need for further investigation applying this model to PST. In the present study, 31 elite adult female rugby athletes with access to a mental skills trainer (MST) were given questionnaires measuring their stages of change, decisional balance, and self-efficacy towards PST four times over four months. Processes of change information and the amount of individual consultations with the MST were also gathered. Individual stage scores and decisional balance scores did not change over time and did not differ between those who consulted the MST ($n = 8$) and those who did not ($n = 23$), with one exception. Precontemplation scores were found to be the highest $F(3, 87) = 6.60, p < .001, \eta^2 = .185, \text{power} = .967$) at the onset of the study (and before an introductory PST presentation) than all other times. Self-efficacy was negatively related to precontemplation scores and positively related to action scores. Those who sought individual consultations were more likely to have been in contemplation (45.5%) at the onset of the study. Further, previously identified processes of change (Prochaska, Velicer, DiClemente, & Fava, 1988) were confirmed to be used by this population. The successful application of the transtheoretical model to PST and implications for consultations and future research will be discussed.

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The Transtheoretical Model and Psychological Skills Training:

Application and Implications with Elite Female Athletes

The study and application of psychological skills training (PST) relating to sport has been a widely investigated topic (Greenspan & Feltz, 1989; Vealey, 1994; Whelan, Mahoney, & Meyers, 1991). PST is the systematic learning and practice of psychological skills such as arousal regulation, concentration, imagery, and goal-setting. Individual and team consultations are often based around the education of certain psychological skills that can be applied to performance enhancement (Weinberg & Williams, 2001). There is abundant empirical evidence supporting the benefits of PST on performance as a result of these types of interventions (Greenspan & Feltz, 1989; Vealey, 1994; Whelan, Mahoney, & Meyers, 1991). PST has been found to be utilized by athletes at all levels including elite and Olympic athletes (Orlick & Partington, 1988), and the use of certain mental skills have been shown to differentiate between more successful and less successful athletes (Frey, Laguna, & Ravizza, 2003; Mahoney, Gabriel, & Perkins, 1987). However, despite clear evidence supporting how PST can help athletic performance, some athletes still do not readily adopt its use (Gould, Tammen, Murphy, & May, 1989; Ravizza, 2001).

Reasons for this neglect or resistance to PST have been explained by the stigma surrounding sport psychologists (Linder, Brewer, Van Raalte, & De Lange, 1991; Ravizza, 1988), lack of time, lack of access, low interest, and perception of ineffectiveness (Zizzi & Perna, 2002). In the consultation realm, it has been suggested that a general rule of thumb when working with teams is that one-third will be excited about a consultant's presence, one-third will be indifferent, and one-third will not be interested (Ravizza, 2001). This suggestion has been basically supported by the research of Ungerleider and Golding, who found that 83% of

Olympians in the 1988 games used some form of mental practice (cited in Ungerleider, 2005) suggesting that 17% of their sample did not use PST. As can be inferred from this research, working with teams will likely lead to working with some athletes who are excited, some who are indifferent, and others who are resistant to using PST. This discrepancy in athlete readiness can cause some obvious problems during the consultation process. First, the general climate of a team intervention may be negatively affected if conducted with members resistant to the process. Second, this may diminish the effectiveness of the intervention and subsequent consultation requests. Third, senior members of a team who are not accepting of PST may influence the adoption of such skills by younger athletes. To complicate matters, movement between one's readiness and willingness to adopt PST can occur over the course of an intervention (Grove, Norton, Van Raalte, & Brewer, 1999; Zizzi & Perna, 2003). Thus, when approaching a team, the makeup of the athletes' readiness for PST can vary and change over the course of the intervention. If the majority of the team is not interested in mental skills and a consultant comes in with presentations geared towards those ready for implementation, this would not be reaching the majority of the audience. Therefore, at any given time a mental skills trainer (MST) might not accurately be targeting the right audience with an appropriate type of intervention.

The first step for mental skills trainers may then be to assess the current readiness of the athletes to adopt PST with whom they are working. Next, an attempt can be made to get the athletes more similar in their willingness to adopt PST, which might increase the effectiveness of the intervention. The question then exists: what can be done with those members of a team who are resistant to sport psychology consultation and the adoption of PST? Weinberg and Williams (2001) suggest not forcing those who are resistant into adopting psychological skills training; Ravizza (2005) suggests only working with those who are interested and willing. This may build

rapport with these athletes in the long run by not pressuring them to conform; however, it would still result in working with a team that is not on the same page in terms of readiness. This could then perpetuate the above stated complications.

A more effective team consultation process could result after getting more team members at the same level respect to their readiness to adopt PST. One possible method of doing this would be to apply the transtheoretical model of behavior change (TTM) to the use of PST. The TTM, which postulates that behavior change is the culmination of progressing through a series of stages, was developed in order to help the effort towards the cessation of addictive behaviors (Prochaska & DiClemente, 1983). Not only has the TTM been successfully applied to multiple health behavior changes (e.g., alcohol addiction, dietary behavior, exercise) in individuals (Prochaska, Velicer, Rossi et al., 1994), it has recently been applied to the adoption of PST in athletes (Grove et al., 1999; Leffingwell, Rider, & Williams, 2001). However, the application of the TTM to PST is still in the infancy stage of research and there is a need for further investigation.

Healthy behavior change has been a major topic of interest in health psychology and related fields. Multiple theories, models, and methods have been developed in order to aid helping professionals in assisting people in various beneficial behavior changes. The value of the TTM is that it encompasses multiple constructs (e.g., decisional balance, self-efficacy) and explains behavior change in a more complex way than just making a dichotomous decision of whether or not to engage in a behavior. The TTM proposes that a person can be categorized into one of five stages in relation to his/her readiness for a behavior change (Prochaska & DiClemente, 1983). These stages include: 1) precontemplation (not changing and not considering changing the behavior), 2) contemplation (considering a change in the behavior within the next

six months), 3) preparation (taking steps to start the behavior change or starting the change without regularity), 4) action (regularly engaging in the behavior change but for no more than six months), and 5) maintenance (having changed the behavior for longer than six months). The TTM suggests that these stages are not linear but circular and relapse may occur at any time, reverting the individual back to a previous stage (see Figure 1).

Strengths of the TTM include that the stage of an individual can be identified and that the processes used within each stage to change the behavior can be recognized. Ten processes used in changing behavior have been identified (Prochaska, Velicer, DiClemente, & Fava, 1988) and found to be used across different behaviors ranging from smoking cessation to alcohol addiction (DiClemente, 1993; for definitions see Table 1). The processes used have been categorized into an experiential component (e.g., consciousness raising, emotional relief) and a behavioral component (e.g., stimulus control, reinforcement management). As can be seen in Figure 1, some of these processes have been found to be used more effectively in certain stages (DiClemente et al., 1991; Prochaska & DiClemente, 1983), with more experiential or cognitive processes used effectively in early stages (i.e., precontemplation and contemplation) and more behavioral processes used effectively in latter stages (i.e., preparation, action and maintenance).

Following the identification of the ways in which people change their behavior, attempts have been made to tailor interventions using these processes of change. This is done by assessing the specific stage a person is in and then encouraging use of those processes that are commonly used by self-changers during that stage (DiClemente et al., 1991). Since this revelation, there has been an abundance of empirical evidence in addiction and health behavior research suggesting that these tailored interventions can be more successful than standard interventions (Perz, DiClemente, & Carbonari, 1996; Peterson & Aldana, 1999; Prochaska, DiClemente, Velicer, &

Rossi, 1993). Since standard interventions tend to be geared towards people who are ready for action, these interventions would not seem useful for those who are still weighing the benefits of change (Prochaska & Velicer, 1997). This is certainly true of PST where interventions are often structured towards teaching athletes how to implement mental skills into their training (Vealey, 1994). Although the processes used in behavior change have been found in multiple behaviors from addiction cessation (DiClemente, 1993) to adopting exercise (Herrick, Stone, & Mettler, 1997), the need to confirm the same type of behavioral use in psychological skills training for sport is warranted (Leffingwell et al., 2001). In other words, when athletes move from thinking PST is not necessary in their training to incorporating regular practice of such skills, it is unknown if athletes use the same processes to move into another stage of change. One theoretical complication in this type of behavior change is that the processes of change, such as self-reevaluation and reinforcement management are essentially mental skills themselves. So to apply these processes of change to PST would essentially be applying mental skill strategies to increase the use of mental skills in sport. It is unclear if this poses a problem in the theoretical application of this element of the TTM. To date, an exploration into the processes of change used with PST and sport has not been completed.

The TTM has also integrated many related concepts that have been used to help describe behavior change. First, the “decisional balance” (DB) concept introduced by Janis and Mann (1968), which suggests that the probability of healthy behavior occurring increases when the pros for engaging in the healthy behavior outweigh the cons, has been used to predict behavior. Research related to the TTM has studied the relationship between decisional balance and stages of change. For multiple behaviors, the cons for engaging in that behavior are greater than the pros in the precontemplation stage (Prochaska, Velicer, Rossi et al., 1994). Further, the pros are

greater than the cons in the action stage. In addition, the pros were greater in contemplation than in precontemplation, and the cons were lower for those in action than in precontemplation. Several investigations have validated this relationship and report a crossover of pros and cons (i.e., pros outweighing the cons) when a person moves from precontemplation to action (DiClemente et al., 1991; Gorely & Gordon, 1995; Herrick et al., 1997; Prochaska et al., 1994). More specifically, to promote movement from precontemplation to action, the pros need to be increased by one standard deviation, an occurrence Prochaska (1994) coined the “*strong principle*” (p. 47). On the other hand, the “*weak principle*” (p. 47) suggested that the cons needed to be decreased by one-half of a standard deviation in order for progress to occur from precontemplation to action.

Self-efficacy has also been related to the TTM. Bandura’s (1977) theory of behavior, which is based on a person’s perceived self-efficacy (SE) towards successfully engaging in such behavior, has been found to relate to one’s progression through the stages of change (DiClemente et al., 1991). Levels of reported self-efficacy have been found to be lower among those in precontemplation than those in action (DiClemente et al., 1991; DiClemente & Prochaska, 1985). With exercise, self-efficacy scores were found to be greater with each stage from precontemplation to maintenance, with SE scores significantly differentiating each stage (except preparation and contemplation; Marcus, Selby, Niaura, & Rossi, 1992). The application of the TTM and its relation to decisional balance and self-efficacy have not only been applied to addictive behaviors, but many healthy behavior changes including dietary behavior, condom use, sunscreen use and exercise (Herrick et al., 1997; Marcus, Selby et al., 1992; Prochaska et al., 1994).

More recently, the application of stages of change, decisional balance, and self-efficacy has transcended addictive and healthy behaviors and has been applied to such behaviors as the adoption of psychological skills training for athletes (Grove et al., 1999; Leffingwell et al., 2001; Zizzi & Perna, 2003). Since this area of investigation is so new, most of the research in this area has centered on developing measurements of an athlete's stage of change relating to the use of PST in sport (Grove et al.; Leffingwell et al.). Leffingwell and his colleagues found that as with addictive and healthy behaviors, decisional balance and self-efficacy were related to the readiness to adopt PST in collegiate athletes. In the same study, previous and subsequent contacts with a sport psychology consultant were more common for those in active stages, particularly action and contemplation. These results suggest that assessing stages of change could be a possible way of predicting client initiated contacts. These results look promising to those working in the applied sport psychology field, but further studies using different populations are necessary. Further, the researchers did not attempt to measure the processes of change used in each stage and called for the need to do so in future research.

In a different research path, a measurement of stages of change with team athletes has been used to assess the effectiveness of a mental skills training program (MSTP; Grove et al, 1999). It was found that the implementation of a MSTP had a positive effect on changing the proportion of team members' stages of change towards action and maintenance. So, the mere presence of a consultant and application of a standard intervention influenced positive movement across stages. However, the intervention in question was mandatory and given to elite, youth male baseball players who were selected to an elite team and compared with those that did not make the team. In this instance the changes reflected could have been confounded by the differences in skill level or due to the involuntary nature of the MSTP. In another outcome

measure study, stages of change was measured before and after brief sport psychology workshops (Zizzi & Perna, 2003). Not only was forward movement observed across collegiate athletes' stages of change (e.g., from precontemplation to contemplation and contemplation to action), but negative movement was also seen (e.g., from action to contemplation and precontemplation). However, a control group was not used in this study and no longitudinal data past one month was obtained. Thus, further investigations need to be completed to test the effectiveness of interventions on athletes' stages of change for PST and how these effects change over time.

Studying the area of stages of change in relation to sport psychology services is an emerging area and the use of the measurements of stages of change for PST has been limited. Because many questions remain unanswered, additional research assessing the stages of change for PST with different populations is necessary. It is unclear what happens to athletes' stages of change, decisional balance, and self-efficacy over time. It is unknown whether measuring an athlete's stage of change really predicts subsequent contacts with a consultant. It is also not known if any differences exist in stages of change, decisional balance and self-efficacy between elite athletes who do contact a mental skills trainer and those who do not. The processes of change athletes use in regard to PST is also undetermined as of yet. Further research is necessary in order to provide adequate answers to these questions.

Studying the relationships between stages of change, decisional balance, and self-efficacy with a population of elite athletes would seem to be helpful to those consultants who work with aspiring athletes. To get a better picture of how these concepts are related in a successful, elite population of athletes could be valuable for practicing consultants working with different populations. In addition, to see how these factors differ between those who chose to utilize

services and those who did not can help with those who are not as initially willing to adopt PST. Having a measurement tool that can be used to predict future consultations could potentially arm consultants with tangible evidence in a needs assessment and allow them to appraise their potential value to a team. Further, by identifying some of the processes of change specific to the adoption of PST, a comparison can be made to those processes found in addictive and healthy behavior change and future tailored interventions can be implemented.

The central purpose of this investigation was to evaluate the effect that exposure to a mental skills trainer had on elite athletes' stages of change, decisional balance, and self-efficacy related to psychological skills training across multiple time periods. Further, differences in these scores were retrospectively examined between those who initiated contact with a MST and those who did not. In addition, an exploration of the processes of change used by athletes in the use of mental skills over the course of the investigation was conducted.

Method

Participants

Forty-five elite female rugby athletes participated in the study with ultimately 31 completing all four questionnaires. Respondents indicated their age in ranges from less than 23 years to greater than 34 years, with the majority of participants in the 23-28 year age range (62.8%). Athletes represented 7 different regions across the United States and 96% were White. Participants attended an elite level try-out camp in February of 2005. As members of the elite squad, athletes trained or competed together four to five times per year for various lengths of time (e.g., four days to two weeks). After this camp, 33 athletes were selected to attend a training camp in May 2005, with 4 designated as alternates and 8 kept in the larger pool of elite players for possible future events.

Pilot Study

A pilot study was conducted with the elite player pool one year before this study to assess their current readiness to use PST and find support for variability among the stages. The purposes of the preliminary research were threefold: 1) to assess the readiness of change for PST at two different time periods in an elite population; 2) to compare differences in stages of change proportions between senior (national) and developmental (player pool) level squads, and 3) to explore the relationship between stages of change and subsequent contacts with a mental skills trainer. Readiness of change for PST was measured by the Stages of Change for Psychological Skills Training Questionnaire (SOC-PST; Leffingwell et al., 2001) and contacts were measured by the initiation of contact with the team consultant.

Athletes completed the SOC-PST at a try-out camp and an electronically administered follow-up SOC-PST three months later. After completion of the first questionnaire, athletes had access to the consultant during the try-out camp while attending at least one mandatory team building session, one voluntary relaxation session, a voluntary individual consultation, and during individual down-time. At the end of the try-out camp, athletes were encouraged to contact the consultant by phone or email if they desired PST individual assistance.

The response rate for the follow-up questionnaire was 54%. This lower response rate was perhaps due in part to electronic file attachment problems and use of only one electronic reminder. To ensure a greater response rate for the current investigation, participants were given a choice of electronic or hard copy surveys, the Internet version was in html format and three weekly electronic reminders were given to participants.

The proportions of the stages of change and the percentages of those who initiated contact for both the national senior team (WNT) and the national development team (WNDT) are

seen in Table 2. A low number of respondents in certain cells prevented the use of a chi-square analysis on the data. Overall, higher percentages of the elite pool fell into either contemplation or action in terms of their psychological skill use at both the baseline (81%) and at the follow-up (60%). There seemed to be no major differences between the two squads at baseline across the stages. Possible differences in frequencies between the squads at the follow-up may be explained by the low response rate for those in the developmental pool. Surprisingly, for an elite squad, there were a low number of athletes that were categorized in the maintenance stage ($n = 5$). Based on the frequencies at baseline, the current study grouped both squads together for planned analyses.

For those athletes who initiated contact, 56% were in contemplation and 39% were in action at baseline. This differed from Leffingwell et al. (2001) who found that 75% of those who were in action and 48% of those in contemplation had contacts within the previous year. The differences in results could be explained by the large differences in sample sizes, the nature of the research design, or the level of athleticism (i.e., elite or collegiate). However, in both studies, the majority of individuals who had individual consultations were in contemplation or action. In the current study, since a similar elite sample will be used, it was hypothesized that the largest number of those contacting the MST would be in contemplation. Additional results supported the TTM. For example, none of the athletes who were in precontemplation at baseline initiated contact with the consultant. Further, only one of the five athletes who were categorized in maintenance initiated contact. This makes sense if those in maintenance were confident in their existing PST program and felt services were not necessary.

An additional question asking participants about any perceived attitude changes towards PST use in sport was asked during the follow-up. Since the relationship in the answers did not

correspond to the changes found on the SOC-PST, two questions instead of one were added to the current study, one for attitude and one for behavior changes. Perceived attitude and behavior change towards PST was measured by two questions at the second, third, and fourth measurement periods. These were “Do you think your attitude [behavior] about mental skills training has changed for the positive, for the negative, or has not changed in the last five days [one month, four months]?” Comparisons were made between perceived changes and actual stage movement as measured by stage classification changes on the SOC-PST. Additional information was gathered on the perceived reason why the change (if any) occurred.

Instrumentation

Demographics and Contact. During the first data collection period, demographic information was collected that included participant age, number of years played, number of international matches competed in on a national level and previous exposure to a sport psychology consultant (see Appendix B). Client-initiated contacts over the duration of the investigation were also tabulated.

Stages of Change. Leffingwell, Rider, and Williams (2001) constructed the Stages of Change for Psychological Skills Training Questionnaire (SOC-PST) to measure the readiness of an athlete to adopt PST in sport (see Appendix C). The SOC-PST is a 12-item questionnaire that measures four of the stages identified in the TTM (Prochaska & DiClemente, 1983). The precontemplation, contemplation, action, and maintenance stages are each measured using three items in this questionnaire. Respondents are asked to answer each statement on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Items for each subscale (i.e., stage) are summed for their subscale raw scores. Raw scores are then converted into subscale standardized scores. If a stage classification is desired, the highest standardized score

across the four stages is used to classify the individual into a single stage, a method used with other scales (Leffingwell et al.). Leffingwell et al. believed that using standardized scores to assign stages resulted in a more accurate representation of their sample's readiness to adopt PST.

The SOC-PST has low to adequate internal consistency with alpha coefficients across two samples of .79 and .54 for precontemplation, .73 and .64 for contemplation, .84 and .83 for action, and .52 and .51 for action (Leffingwell et al., 2001). The authors attributed the low alpha coefficients to the low number of items (3) in each subscale. Alphas in the present study were .69 for precontemplation, .70 for contemplation, .93 for action and .64 for maintenance. Divergent validity was shown by a lack of significant correlations of subscales to the Marlow-Crowne Social Desirability Scale. Construct validity by the even distribution of individuals across stages once a stage of change was assigned. Additional construct validity of the SOC-PST was obtained by comparison of stage assignment with athletes' previous and future involvement in sport psychology (Leffingwell et al., 2001), with a larger number of those in contemplation and action reporting more previous and future experience with consultations. More specifically, 75% and 64% of those in action contacted a consultant in the previous and following year respectively.

For this study, all four standardized scores for each individual were analyzed to evaluate the hypotheses on changes in scores over time and between those who initiated contact and those who did not. Stage classifications were assigned at the end of the first camp (Time 2) and used to test the hypothesis that people in contemplation initiated more contacts than those in other stages.

Decisional Balance. In the same study discussed above, Leffingwell et al. (2001) created a decisional balance measure for psychological skills training (DB-PST) that followed the outline of previous DB measures in smoking cessation (see Appendix D). The scale includes 20 items

relating to the potential benefits (pros) or negative consequences (cons) that would likely result from engaging in a psychological skills training program. The 11 pro items and the 9 con items are rated on a scale from 1 (*not at all important*) to 5 (*extremely important*) and all have the sentence stem, “If I participated in a mental skills training program...” (p. 177). Scores for the benefits and negative consequences are calculated by summing the scores for each subscale.

An adequate fit model using a confirmatory factor analysis was found with the college student sample, $\chi^2 (168, N = 157) = 298.1, p < .01$. The internal reliability coefficients were high in two samples for the pros (.92, .94) and the cons (.90, .82; Leffingwell et al., 2001). Alphas in the present study were .86 for the pro items and .94 for the con items. Construct validity was confirmed with comparison to stages of change, with pros lower in precontemplation and higher in contemplation than cons. In the current study, one item was adjusted to be more appropriate for the population sampled. “My parents would disapprove” was changed to “those individuals significant to me would disapprove”.

Self-Efficacy. In the same study with the creation of the SOC-PST and the DB-PST, Leffingwell et al. (2001) developed the Self Efficacy for Psychological Skills Training (SE-PST) scale (see Appendix E). The SE-PST is a five-item scale that measures the perception that PST can be utilized or maintained regardless of potential barriers. Respondents are asked to rate sentences that start, “I am confident in my ability to work on my mental skills...” (p.178) on a scale from 1 (*not at all confident*) to 5 (*very confident*). The items were adapted from Marcus, Selby, Niaura, and Rossi’s (1992) self-efficacy measure related to exercise.

The SE-PST model achieved an adequate fit $\chi^2 (14) = 34.42, p < .05$ with each item indicating separate factors (Leffingwell et al., 2001). The internal reliability coefficients for both samples were good (.88, .85). In the present study, a comparable alpha of .86 was found.

Comparisons between SE-PST scores and stages of change revealed significant differences between those in action (highest) and those in the precontemplation, contemplation and maintenance stages. The authors suggested the need for further validation of this scale since the relationship of the SE-PST was not as expected with the maintenance stage of the SOC-PST, finding no significant differences between athletes in this stage compared to early stages.

Processes of Change. The processes of change (POC) were assessed using a checklist and an open answer question sheet (see Appendix F). Ten processes utilized in multiple behavior change studies have been identified (DiClemente & Prochaska, 1985; for definitions see Table 1). In this study, a preliminary checklist was constructed by modifying the actual definitions of the processes previously identified in other behaviors (Marcus, Banspach, et al., 1985). The checklist is comprised of one definition for each of the ten processes. Two open-ended questions were added at the end of the checklist for additional thoughts or behaviors used in PST.

Procedures

Approval in writing from the WNT head coach and from the MST/principal investigator's Institutional Review Board for the protection of Human Subjects was obtained before the start of this investigation. Athletes were notified in writing that the MST did not have a say in the selections process and because of anonymity, participation would neither help nor hinder that process. A list of the names and email addresses of those athletes who were invited to the elite try-out camp was obtained from the coaching staff prior to the February camp (see Figure 2 for timeline). In the first mailing, the informed consent letter, demographic information sheet, SOC-PST, DB-PST, and SE-PST were emailed by the WNT administrators to the invited athletes. On the cover sheet of the surveys, athletes were asked to indicate their preference for the mailing of the two follow-up assessment packets (e.g., email or postal service). Those who

agreed to participate were asked to record their own four-digit code at the top of the surveys and bring their forms to the first camp (Time 1/pre-test). Time one (T1) forms were collected prior to the first mental skills session, which was held prior to any field play or physical testing.

During the introductory session held by the researcher as the team's MST, the role of the MST was reviewed with the team and a brief explanation of the definition and use of psychological skills training in sport was delivered. Further, the first session covered team cohesion, stages of team formation and an introduction activity. A second scheduled session occurred on the morning of the third day and the topics of concentration, routines and self-talk were covered. An impromptu meeting was held to resolve a conflict on the final morning prior to intra-squad scrimmages. The conflict was related to reactions to a newly implemented team ritual during training the previous day. A preliminary resolution was achieved and was again revisited during the May camp. Copies of handouts and outlines of presentations for the first (see Appendix G) and second camp (see Appendix H) are included. Over the course of the camp, the MST was available for individual consulting sessions during breaks and at the end of the day. Informal interactions with team members and coaches occurred throughout each day. As part of an exit evaluation, athletes were asked to complete the SOC-PST, DB-PST, and SE-PST again (Time 2/post-test) as exposure to a MST during camp may have affected stages of change scores as it has been found to do with previous workshops (Zizzi & Perna, 2003). Time two (T2) forms were collected prior to the final half-day of physical practice.

Within two weeks of the end of the camp, the MST sent one email to the entire pool of players reiterating the consulting services and information that was available to them. Electronic and phone contact information for the MST was included in all communication. At the end of the month, selections for the next senior level camp were made by the WNT coaching staff. Upon

receiving this list, a SOC-PST, DB-PST, and SE-PST was emailed or sent via postal service to the participants in the study to assess changes in scores as a follow-up to the in-person exposure to the MST (Time 3/1-month post-test). Participants received three email reminders encouraging them to return these surveys over the course of three weeks, one initiated by the head coach.

Over the next three months, two email prompts reminding athletes of services offered and information available were distributed to the entire pool of players. Within this time, the second try-out camp for 33 of the participants was held and attended by the MST. Even though the full initial sample of 45 was used at each data collection period, these 33 athletes had additional in-person exposure to the MST at this second camp. Three sessions were held at this camp, one problem solving activity and two workshop-like sessions on elements of successful teams. A fourth impromptu meeting was held again during the last morning to facilitate decision making related to the team conflict that occurred at the first camp.

At the end of these three months (i.e., four months after the initial camp), a final assessment package including the SOC-PST, DB-PST, SE-PST, the processes of change checklist and final manipulation checks questions (Time 4/4-month post-test) were emailed or sent via postal service to the participants (see Appendix I). Time 4 (T4) final manipulation checks included questions regarding seeking out sport psychology information, perceived contacts with the MST, and approachability of the consultant in the previous four months.

Hypotheses

It was generally expected that there would be an interaction over time on the transtheoretical model related variables (Zizzi & Perna, 2003). More specifically, there would first be an initial increase in contemplation, action, maintenance, and decisional balance pro scores (T1 to T2). Scores would then be maintained over time by those who initiated contact

while scores would decrease for those who did not contact, because contact would keep people thinking about PST longer after initial contact. The opposite direction was expected for precontemplation and decisional balance scores. These scores were hypothesized to decrease initially and then be maintained over time by those who contacted the MST and scores would increase for those who did not contact. No differences were proposed to be found between those who contacted and those who did not contact the MST.

It was also hypothesized that self-efficacy scores would be correlated with stages of change scores over time, with the strongest positive correlation being with action scores and a negative correlation with precontemplation scores (Leffingwell et al., 2001). Based on pilot research, those classified in the contemplation stage at T2 were hypothesized to show the highest subsequent contact rates compared to athletes in all other stages. This was expected since those in this stage may have only been there since they did not have access to a MST in the past and exposure and access would be the stimulus to spark them into action. Further, each process of change that had been previously identified (DiClemente & Prochaska, 1985) was hypothesized to have been used by at least one of the participants as indicated by a positive response on the checklist. With respect to any changes athletes made along the stages of change scale, it was expected that the direction of movement would be the same as perceptions of attitude and behavior changes during that same time period. Perceptions were evaluated by answers to two general questions at T2, T3 and T4.

Results

Contact Rates, Contact Themes and Previous PST Experience

Forty-five participants were initially involved in the study, 31 of whom completed all four phases, giving this study a 31% attrition rate. Over the course of the study, 13 participants

contacted the mental skills trainer for an individual session, with 1.31 average sessions per individual. Eight consultations occurred during the first camp, one between T2 and T3, and five between T3 and T4 (four occurring at the second camp, two weeks prior to T4). The majority of contacts were in person ($n = 8$) with two occurring by email. Considering some contacts had multiple themes, there were a total of 20 different issues brought to the consultations. Of those, 25% involved concentration issues, 15% team issues, 10% confidence, 10% motivation, 10% decision making, 10% goal setting, 10% external stress, 5% anxiety and 5% personal issues.

Participants who completed the entire study were divided into two groups, those who initiated contact and those who did not. The participants attended the first five-day camp with 23 of the 31 attending the second camp. Those who did not attend the second camp were either not invited, had injuries or scheduling conflicts. The contact group had an average of 8.5 ($SD = 4.09$) years playing experience and had an average of 4.88 ($SD = 10.52$) National Team Fifteen's Caps (i.e., number of international matches played) and .88 ($SD = 2.47$) National Seven's Caps compared to 6.54 ($SD = 2.98$) years of experience, 2.48 ($SD = 4.75$) Fifteen's Caps, and 1.17 ($SD = 2.74$) Seven's Caps for those who did not contact. Differences between the group ($n = 8$) who contacted and the group who did not ($n = 23$) were not found using t-test analyses to compare age, previous experience with a mental skills trainer, previous other experience with sport psychology, years experience and elite team experience.

Fifty percent of those who contacted the MST had previous experience with a MST compared to 43.5% of those who did not contact. Chi-square analyses revealed no significant differences. The most common listed previous contact with a mental skills trainer or sport psychologist by 22 respondents was with the team's present MST at previous team venues (81.8%). Others included coaches (13.6%) or with other teams or sports (22.7%). Previous

experience with other types of mental skills training was reported by 37.5% of the contact group and 43.5% of the non contact group. The most common other type of experience listed by 20 respondents was reading a book or article (65%), followed by a sport science or psychology class (10%), relaxation tapes (5%), a nutritionist (5%), and a chiropractor (5%).

Stages of Change and Decisional Balance

Six, 2-way repeated measures ANOVAs were utilized to test the difference in means across stages of change and decisional balance components between contactors and non-contactors. Levene's test of homogeneity of variance was conducted before comparisons of means were made. Homogeneity of variance was found in all cases. The independent variables were group (contact vs. non contact) and time (pre-test, post-test, 1-month post-test, 4-month post-test), and the dependent variables were standardized scores for stages of change (precontemplation, contemplation, action, and maintenance), and decisional balance (pros and cons) scores. Significance levels were set at $p < .01$ to decrease the chance of Type I error that might have occurred with multiple analyses. Means, standard deviations, effect sizes, and power are shown in Table 3. It was predicted that there would be an initial increase from T1 to T2 in contemplation, action, maintenance and decisional balance pro scores with scores maintained over time by those who initiated contact and scores decreasing by those who did not. Significant differences between contact groups across time periods were not found for these variables. Further, a significant contact group by time interaction was not observed. The opposite was predicted for precontemplation and decisional balance con scores where scores were expected to initially decrease from T1 to T2 and then be maintained for those who initiated contact. A significant main effect for time was observed with precontemplation scores, $F(3, 87) = 6.60$, $p < .001$, $\eta^2 = .185$, observed power = .967, but not for con scores. A Least Significance Difference

post hoc analysis was used to reveal that scores at T1 were higher than all other time scores (see Table 3). Significant interactions were not found. This suggests that regardless of whether individuals made contact with the MST, there was a decrease in overall precontemplation scores during the first camp which included attending MST workshops.

Self-Efficacy

Four Pearson Product moment correlations were used to explore the relationships of self-efficacy with stages of change scores (precontemplation, contemplation, action, and maintenance) at all four time periods. The correlations for self-efficacy and stages of change scores for each time period are listed in Table 4. At all four time periods, self-efficacy was positively correlated with action scores and negatively correlated with precontemplation scores at the $p < .001$ level.

Initiated Contact

The stages as measured at T2 of those who contacted and did not contact the MST during the course of this study are presented in Table 5. Small cell sizes prevented the application of a chi-square analysis on the data. However, of those who initiated contact, the majority (45.5%) were in the contemplation stage during T2. The remainder of those who contacted were categorized either in the action (27.3%) or maintenance stages (27.3%). No one from the precontemplation stage initiated contact with the MST during the subsequent four months.

Processes of Change

Frequencies and qualitative analyses were used with the processes of change data. All ten processes of change previously identified for other behavior change have been used at least one time for mental skills training by almost half of the elite athletes in this study. The percentages of athletes who used certain processes ranged from 91.7% (Consciousness Raising) to 44.4%

(Reinforcement Management). For a complete list of processes percentages and frequencies see Table 6. An attempt was made to identify additional processes of change used for PST by asking participants to include any other thoughts or behaviors they commonly have in regard to their practice. These comments were reviewed for new themes by two researchers who were trained in qualitative analyses. Categorization of themes by each researcher followed and a third expert was used to settle discrepancies. All comments were able to be categorized into one of the 10 processes confirmed by Prochaska and DiClemente (1983). Of the 20 comments, 4 were classified as only a description of the type of PST the participant used (e.g., “I frequently visualize myself succeeding in rugby”). The remainder included consciousness raising (5), self-reevaluation (3), self-liberation (2), environment reevaluation (2), helping relationships (1), reinforcement management (1), social liberation (1), and stimulus control (1).

Perceived versus Actual Changes

At T2, T3 and T4, participants were asked whether or not their attitude or behavior towards mental skills training had changed in a positive manner, a negative manner or if there was no change since the last assessment (see Appendix C). These perceptions of changes were compared to actual changes in stages as determined by a positive or negative shift in stage classification using the SOC-PST (e.g., contemplation to action would be a positive shift). Small cell sizes prevented the intended use of the chi-square analyses, thus these relationships are expressed as a combination of their overall agreement and their contingency coefficient (cc). Contingency coefficients can be interpreted as weak (less than .3), moderate (.3 to .6) or strong (greater than .6). The overall agreement for each time period was determined by the percentage of individuals whose perceptions of change matched the direction in their movement along the stages of change scale (e.g., there was a perceived positive change in behavior and there was a

positive change in stage from contemplation to action). The only moderately significant relationship was observed between T1 and T2 with a 45% agreement in attitude changes ($cc = .452, p = .019$); behavior changes had a 35.5% agreement ($cc = .271, p > .05$) during the same time period. For the month proceeding the first camp (from T2 to T3), there was a 35.5% ($cc = .357, p > .05$) agreement in attitude changes and a 38.7% ($cc = .233, p > .05$) agreement in behavior changes. At T4, there was a 41.9% ($cc = .178, p > .05$) attitude change agreement and a 38.7% ($cc = .165, p > .05$) behavior change agreement. This suggests that the agreement between perceived and actual stage shifts was low, as less than half were in the same direction at all time periods

The largest reported perceived positive attitude (71%) and behavior (67.7%) change occurred during the first camp (from T1 to T2). The largest perceived negative behavior change (19.4%), and the only perceived negative change in attitude (3.2%) were found at the one-month follow up (T3). Although not part of any hypotheses, movement in stage classifications between assessment periods was examined. At all time periods there were positive (e.g., contemplation to action), negative (e.g., contemplation to precontemplation) and no directional changes across the sample. At T2, 29% had positive, 12.9% had negative and 58.1% had no change in their stage classification as measured on the SOC-PST. At T3, 22.6% of changes were positive, 25.8% were negative and 51.6% stayed the same. At T4, 35.5% were positive, 19.4% were negative and 45.2% did not change. This suggests that participant stage of change varied over time as measured by the SOC-PST.

Additional Analyses

Participants were also asked to rate the approachability of the MST during the last assessment period. On a scale from 1 (*not at all approachable*) to 7 (*very approachable*), the

MST's approachability had an overall mean of 5.8 ($SD = 1.22$) for all 37 respondents, 5.7 ($SD = 1.30$) for those in the final non-contact group and 6.1 ($SD = 1.04$) for those in the contact group. An independent t-test was calculated and no significant difference between the two groups was found. Participants were asked to check reasons from a list or write a comment about why they did not make contact with the MST. Of the 37 who responded to this question, lack of time (27%) was cited most often, followed by not feeling as if they would benefit from services (13.5%), not being interested in the topic (5.4%), already performing at a high level (5.4%), and not being comfortable with the MST (2.7%). Further, qualitative analysis of comments suggested that an additional 10.8% were uncomfortable asking, 8.1% lacked awareness or knowledge of the scope of consulting services, 5.4% stated they were currently doing PST on their own, and 2.7% stated they were lazy.

Discussion

The Transtheoretical Model of Behavior Change has been applied to multiple addictive and healthy behavior changes and has only recently been applied to psychological skills training. The purpose of this field study was to apply the TTM to the use of psychological skills training in an elite population over time and to see if differences occurred between those who did and did not contact a mental skills trainer to engage in PST. Further, a preliminary look at the processes of change used by some elite athletes to incorporate mental skills into their overall training was explored.

It was hypothesized that the "active" elements of the TTM (contemplation, action, maintenance and pro scores) would increase initially and then taper off for those who did not use the MST's services. The opposite was expected for precontemplation and con scores. The results suggest that, overall, the active elements of the model were relatively consistent over time. On

the other hand, precontemplation scores did decrease over the five days at the first camp. The try-out camp and the presentations by the MST could have influenced this decrease in scores. This camp marked the end of the off-season for many of these athletes and the presentations may have served as a reminder to them about the importance of PST use in sport. Without the constant reminders or cues of attending practice or playing games, PST practice could have been “out of sight, out of mind”. Interestingly, no differences were found in con scores from the start to finish of the first camp. This may have been due to some reported confusion by participants over the structure of the questionnaire. The items were structured so that individuals indicated if an item would be important to them when deciding to engage in PST. What was reported to be confusing for some was that the specific situation listed in the item was not perceived to be true. For an item such as, “my teammates would think I have an interpersonal problem with them”, it was unclear for some participants how to answer this since they did not think it was relevant to their situation. A closer look at the clarity of the DB-PST items and instructions is in order.

Differences were not found over the course of the study in stages of change and decisional balance scores between those who initiated contact and those who did not. Since it was hypothesized that scores may change over time while the team was not together or did not have in-person contact with the MST, those who did contact the MST were expected to maintain their scores more so than those who did not. Since the scores did not generally change over time, it is not surprising that there were no differences between the two groups. The small sample size limited the power of the analyses and could have made it less likely to have found significant differences. It could also be that some athletes in the non-contact group were already practicing and comfortable with their PST program and continued to do so without utilizing the MST services. This is indicated by the second most selected reason for why athletes did not seek

consultation services, which was that they did not think they could benefit from services. It may also be true that since the majority of the contact group only had one session with the MST, this proved to be too little of an intervention to affect scores. Maybe the interventions suggested in the sessions were only incorporated by the individuals in the short-term. Furthermore, the type of issues brought to consultations were often for specific on-field concerns that resulted in one or two suggestions for changes. Perhaps these small adjustments made on the field were not significant enough to be reflected in stages of change scores.

Self-efficacy was proposed to be positively related to contemplation, action and maintenance scores and negatively related to precontemplation scores at all time periods. Self-efficacy in this study was related to the precontemplation and action scores at all time periods partially supporting the hypothesis. This suggests that perhaps increasing athletes' self-efficacy in being able to incorporate a PST program into their training could decrease their precontemplation scores and move them into action. However, a controlled experiment is necessary to determine if there can be a cause and effect in this regard. The absence of almost any relationship between self-efficacy and maintenance scores is concerning. This is similar to results from Leffingwell et al. (2001) where they found that self-efficacy scores for those classified in maintenance were not different than those in precontemplation or contemplation. One explanation for this was the face validity of the maintenance items. Upon closer examination of the maintenance items, it seems that these items might actually be a measurement of relapse rather than maintenance (e.g., "I have been successful working on my mental skills, but I'm not sure I can keep up the effort on my own", "After all I've done to try to change my mental skills, every now and again I slip back into old habits"). If the standard definition of

maintenance is regular behavior change for longer than six months, it is unclear why these items would include parts of statements that represent inconsistency.

It was also hypothesized that those who contacted the MST would be more likely to be classified in contemplation. The contacting group was more likely to have been in the contemplation stage which supported the results from the pilot study, but differed from Leffingwell et al. (2001) where contactors were more likely to have been in action. It is unclear if this difference is due to the level of athlete (elite vs. collegiate) or due to differences in how services were marketed to the athletes between the two investigations. In the present study, contactors were those who initiated contact themselves and in the previous study they did not differentiate between those who initiated contact or were approached by a consultant. Regardless, from the present study, this suggests that an initial assessment of individual athletes' stages of change might be helpful in identifying how many potential clients will seek services.

To confirm that all 10 of the processes of change identified with previous behavior changes are also used in regard to PST, a checklist was administered to the current sample. As expected, all processes previously identified (Prochaska & DiClemente, 1985) were reported to have been used in this sample and the majority of them had been used by at least 50% of the participants in this study. The most frequently reported process of change used was consciousness raising. Nearly all of the participants had used consciousness raising by gathering information about the use or effect of mental skills on sport performance (e.g., read a book). The encouragement of bibliotherapy for PST programs might prove beneficial when working with athletes, especially those who are at a distance. Further development of a processes of change for psychological skills training scale is necessary and may eventually help in tailoring interventions according to stage of change.

Stages of change movement was hypothesized to be consistent with perceived attitude and behavior change regarding PST. It is unclear why the agreement between perceptual changes was not stronger with the actual changes as measured on the SOC-PST. It could be that a one-item question relating to perceived attitude and behavior was too general to measure those changes alluded to by the SOC-PST, indicating that an instrument would be best when measuring these complex concepts. Further, future analyses could be more direct in comparing perceptions of behavior changes to only changes in the later part of the SOC-PST scale (e.g., action to maintenance) and attitude changes to early stage movement (e.g., precontemplation not contemplation). Conversely, this lack of agreement rate could be due to validity concerns with the SOC-PST. Individuals' standardized scores were used for some of the previous analyses, but in this instance, stage assignment was used to measure actual change. To assign a stage, the highest standardized score is chosen from all four stage scores per individual. In some cases, differences between stages were determined by $1/10^{\text{th}}$ of a point. Sometimes this small disparity was the difference between assigning someone to precontemplation rather than action. It seems that a one-item stages of change ladder may be more accurate in categorizing an individual's stage since the definitions of each stage is clear.

On the other hand, since there were no significant main effect differences across time for contemplation, action and maintenance, it appears that stages of change standardized scores stayed relatively consistent for the two groups. However, upon closer look at the stage assignment that those scores would indicate, a moderate amount of both positive and negative movement was observed at each time period, suggesting that individuals were progressing and regressing across the stages. This bi-directional movement in a group is consistent with the findings of Zizzi and Perna (2003) in their study with an earlier version of the SOC-PST. This

may be due to a weakness in the scale and could explain the absence of hypothesized differences.

Furthermore, the absence of the preparation stage might prove to be detrimental in this area of study. Personal experience lends one to believe that practice of PST may be irregular, coinciding with seasonal play or game importance (e.g., working more on positive self-talk during pre-season compared to off-season). Although, from the current study it appears that the transtheoretical model is a model that can be applied to PST with athletes, these scales should be used with caution. Further validation between the SOC-PST and perhaps a stages of change ladder suggested by Grove et al. (1999) is warranted before integrating this assessment into an intervention package.

Limitations

The use of the WNT sample limited the generalizability of the results as the athletes were only women, represented one sport and possessed a high skill level. The field study research design using an intact group limits the inferences that can be drawn as there was no control group and various external components could have influenced the results. Another limitation of these procedures is that having the current researcher serve as the MST for the team could inherently cause some potential experimenter bias. The participants could have picked up on inadvertent subtle behaviors or cues from the researcher to increase contacts or reinforce positive attitudes towards mental skills training. Further, most of the athletes who had previous experience with a mental skills trainer had that experience with the current consultant. This could have biased the participants in their view of the MST and practice of PST. The demand characteristics of the current research including the straight-forward questionnaires about mental skills use, could have clued the participants into the purpose of the study and affected their responses and contact rate. Or perhaps, due to the Hawthorne effect, just knowing they were

involved in an experiment could have biased their natural behavior and attitudes regarding the variables that were explored in this study.

On the other hand, using a sample that was homogenous in sport and skill level may have reduced the chances of the possible confounding effects from individual differences that would be more likely to occur when using a variety of sports and skill levels. Further, utilizing a group of elite athletes might increase the chances of collecting valuable information regarding the processes used relating to PST. Identifying the processes most often used by elite athletes in their PST would be helpful in future consultations with aspiring athletes. Moreover, using a team with a previously established MST may elicit more initiated contacts (29% of the sample in the present study) than previous research that has incorporated a “cold call” workshop structure (Zizzi & Perna, 2003) and reduce the novelty effect. Finally, precautions against experimenter bias were implemented that included having a third party enter and score the data collected. Regardless, future research is needed with different populations, control groups and multiple consultants.

Another possible confounding factor was due to history with the unforeseen conflict that occurred during the first camp and was revisited at the second camp. Frustration from the conflict may have turned off individuals from focusing on their psychological skills or made them reluctant to contact the MST since the MST served as a facilitator to the discussions. In addition, since the athletes were playing on their home club teams while not at elite-level events, different personal experiences may have occurred during the time away that may have affected results. However, only one person reported not being comfortable with the MST and the overall rating of the MST approachability was moderately high. The number of contacts may have been low due to a ceiling affect, where many individuals had contacted during the previous year so

their need may have been decreased. Further, having to rely on athletes to communicate long distance may have decreased the number of contacts; however, Zizzi and Perna (2002) found that athletes preferred electronic methods for contacting a consultant compared to traditional methods such as using the telephone or in person. Measuring the TTM components of teams over the course of a regular season while having weekly contact with a MST is suggested.

Summary

Overall, the findings from this study provided some additional evidence that the TTM can be successfully applied to PST program development and could perhaps serve as a way to evaluate interventions. Measuring stages of change can give an indication of the number of individual consultations MSTs can expect to work with during a season. Further, focusing on increasing self-efficacy may help move athletes into action. The reason most often reported for not contacting the MST was lack of time, which is similar to past research findings (Zizzi & Perna, 2003). Therefore, addressing how one can fit consultations and mental skills practice into their daily training in one of the initial consultations could be beneficial to athletes and increase their self-efficacy. Perhaps asking athletes in maintenance to share with their teammates the ways that they practice their mental skills could increase self-efficacy, pros, and move them along the stages. The findings were promising concerning the processes of change, having supported the same processes used for PST as in other behaviors. This was an initial theoretical concern as it was not clear whether or not these processes of change, which are essentially mental skills in themselves, are used to change the use of mental skills for performance enhancement. The development of a more detailed scale to assess and monitor the processes of change would seem useful to help in tailor interventions to individual stages.

Future research does need to critically assess the validity of the types of scales used in this area to determine the best method of measurement. A stages of change “ladder” may be more reliable and convenient in multiple assessments as it is only one item per stage and includes a preparation stage. Investigators may want to consider whether or not it is necessary to separate out each mental skill to be assessed individually. It may be determined that grouping all mental skills into one assessment is not accurately measuring the comprehensiveness of a PST program. For example, a person who is just practicing a mental skill a few times per week could be classified in the same stage as someone who regularly uses goal-setting, imagery and relaxation training on a daily basis. However, it can be argued that separation of mental skills is not necessary since the application of the TTM to exercise does not differentiate the types of exercise in which a person engages. Nevertheless, with the application of the TTM and exercise, regular exercise is clearly defined by guidelines. Therefore, there is some support for establishing a standard definition of regular use of mental skills in a PST program.

Overall, the future directions in this area are many and exciting in that consultants may eventually be armed with more efficient ways to approach those not interested in PST. Through the use of stages and processes of change information, consultations can be better tailored to the individual and the effectiveness of interventions can be evaluated making the them more meaningful and efficient.

Table 1

The Processes of Change

Process	Definition
Consciousness Raising	Efforts by the individual to seek new information and to gain understanding and feedback about the problem behavior
Counterconditioning	Substitution of alternative behaviors for problem behavior
Dramatic Relief	Affective aspects of change, often involving intense emotional experiences related to the problem behavior
Environmental Reevaluation	Consideration and assessment by the individual of how the problem affects the physical and social environment
Helping Relationships	Trusting, accepting, and utilizing the support of caring others during attempts to change the problem behavior
Reinforcement Management	Changing the contingencies that control or maintain the problem behavior
Self-Liberation	The individual's choice and commitment to change the problem behavior, including the belief that one can change
Self-Reevaluation	Emotional and cognitive reappraisal of values by the individual with respect to the problem
Social Liberation	Awareness, availability and acceptance by the individual of alternative, problem-free life-styles in society
Stimulus Control	Control of situations and other causes which trigger the problem behavior

Note. Adapted by Marcus, Banspach, et al. (1992).

Table 2

Contacts, Frequencies and Percentages of Stages of Change at Baseline and Three-Month Follow-Up for Senior (WNT) and Developmental (WNDT) National Teams during Pilot Study

	PR	CO	AX	MN	Total
Baseline					
WNT	2 (8%)	10 (42%)	10 (42%)	2 (8%)	24
WNDT	0 (0%)	6 (42%)	4 (31%)	3 (23%)	13
Total	2 (5%)	16 (43%)	14 (38%)	5 (14%)	37
3-month follow-up					
WNT	2 (15%)	3 (23%)	6 (46%)	2 (15%)	13
WNDT	1 (14%)	1 (14%)	2 (29%)	3 (43%)	7
Total	3 (15%)	4 (20%)	8 (40%)	5 (25%)	20
Contact					
Yes	0 (0%)	10 (56%)	7 (39%)	1 (6%)	18
No	2 (11%)	6 (32%)	7 (37%)	4 (21%)	19
Total	2 (5%)	16 (43%)	14 (18%)	5 (14%)	37

Note. PR = precontemplation, CO = contemplation, AX = action, MN = maintenance; a positive contact was counted if at least one initiated contact with the consultant was made that led to an individual session.

Table 3

Means, Standard Deviations, Effect Sizes and Power for Stages of Change Standardized Scores and Decisional Balance Scores between Those Who Contacted and Those Who Did Not Contact

		Mean (Standard Deviation)				η^2	Power
		Time 1	Time 2	Time 3	Time 4		
Precontemplation							
Contactors ^a		49.22 (10.01)	41.90 (7.26)	44.34 (9.31)	41.29 (5.79)	.30	.76*
Non-Contactors ^b		47.36 (10.54)	44.82 (10.36)	44.18 (10.29)	43.55 (10.29)		
Contemplation							
Contactors		57.24 (7.33)	57.24 (4.37)	53.55 (10.20)	54.16 (8.51)	.04	.10
Non-Contactors		54.40 (9.11)	53.55 (8.66)	54.62 (9.03)	54.62 (9.96)		
Action							
Contactors		48.05 (11.22)	53.03 (11.47)	51.28 (8.94)	49.54 (10.42)	.24	.61
Non-Contactors		46.43 (8.77)	50.87 (9.03)	49.65 (10.17)	48.78 (10.67)		
Maintenance							
Contactors		53.02 (12.31)	53.64 (13.81)	53.64 (8.25)	51.13 (8.88)	.04	.12
Non-Contactors		49.74 (9.17)	50.61 (8.82)	53.02 (8.16)	54.54 (9.63)		
Pros							
Contactors		38.75 (5.37)	39.69 (5.93)	38.75 (8.26)	38.38 (5.68)	.05	.13
Non-Contactors		36.92 (5.15)	37.26 (5.09)	38.30 (6.03)	39.22 (5.10)		
Cons							
Contactors		14.63 (8.67)	15.69 (8.26)	18.75 (9.66)	16.88 (7.22)	.15	.36
Non-Contactors		16.89 (8.22)	17.48 (8.74)	18.30 (7.79)	18.91 (7.60)		

^a $n = 8$. ^b $n = 23$. * $p < .01$ for precontemplation main effects.

Table 4

Pearson Product Moment Correlations for Self-Efficacy and Stages of Change Standardized Scores

Stages of Change	Self-Efficacy			
	Time 1	Time 2	Time 3	Time 4
	(<i>n</i> = 41)	(<i>n</i> = 41)	(<i>n</i> = 36)	(<i>n</i> = 37)
Precontemplation	-.525*	-.609*	-.637*	-.431*
Contemplation	.255	.298	.124	.062
Action	.657*	.591*	.584*	.703*
Maintenance	.094	.014	-.043	-.047

Note. Sample size varies as a result of the number of respondents at each time period. All respondents at each time period were used in each analysis.

* $p < .01$.

Table 5

Frequencies and Percentages of Stages of Change (at Time 2) for Those Who Initiated Contact and Those Who Did Not Initiate Contact over the Course of the Study

	PR	CO	AX	MN	Total
Contact					
No	6 (20%)	11 (36.7%)	6 (20%)	7 (23.3%)	30(73.2%)
Yes	0 (0%)	5 (45.5%)	3 (27.3%)	3 (27.3%)	11(26.8%)
Total	6 (14.6%)	16 (39%)	9 (22%)	10 (24.4%)	41 ^a

Note. PR = precontemplation, CO = contemplation, AX = action, MN = maintenance; a positive contact was counted if at least one initiated contact with the consultant was made that led to an individual session in person or from a distance.

^aNumber reflects whole sample minus four missing values.

Table 6

The Processes of Change Used at Least One Time Regarding Mental Skills Training

Process	Frequency (N = 45)
Consciousness Raising	91.7%
Environmental Reevaluation	88.9%
Social Liberation	86.2%
Stimulus Control	80.6%
Self-Liberation	77.8%
Counterconditioning	72.3%
Helping Relationships	72.2%
Self-Reevaluation	61.1%
Dramatic Relief	58.4%
Reinforcement Management	44.4%

Figure Caption

Figure 1. The Transtheoretical Model of Behavior Change with individual stages' processes of change adapted from DiClemente (1993).

Figure Caption

Figure 2. Timeline of four data collection periods and instruments administered.

Note. T1 = Time 1; T2 = Time 2; T3 = Time 3; T4 = Time 4; SOC-PST = Stages of Change for Psychological Skills Training; SE-PST = Self-Efficacy for Psychological Skills Training; DB-PST = Decisional Balance for Psychological Skills Training; Demo = demographic information; Sum Contacts = summation of contacts within previous four months. All PST scales were developed by Leffingwell, Rider, and Williams (2001).

^aIndicates the measurement time which will be used to categorize stage of change for participants in contact vs. non-contact chi-square comparisons.

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APPENDIX A

Review of Literature

One of the roles of sport psychology includes the application of research-based knowledge to the sport and exercise population. One area of research and applied interest in this field includes psychological skills training (PST) in sport. Two of the professional objectives in the applied area of PST are to educate athletes on the importance and benefits of using PST for performance. Further, a goal is to encourage the adoption of regular PST and utilization of sport psychology services. Essentially, this is an area of encouraging and supporting behavior change; namely, the adoption of PST for sport. The transtheoretical model, including stages of change, processes of change, decisional balance, and self-efficacy has been related and applied to addictive or healthy behavior change. Recently, these concepts have been applied to PST. The following review will first outline the effectiveness, importance of, and utilization of PST behavior in sport. Next, it will explain and summarize key findings in the literature on the transtheoretical model, decisional balance, and self-efficacy. Last, a synopsis of the recent studies integrating these concepts will be provided.

Psychological Skills Training

Effectiveness of Psychological Skills Training

Psychological skills training has been defined as “developing, regularly practicing, and using psychological techniques to improve sport performance” (Grove, Norton, Van Raalte, & Brewer, 1999, p. 109). Some of the most popular skills taught and utilized in PST include goal setting, arousal regulation, concentration, imagery, and confidence building (Weinberg & Williams, 2001). The effectiveness of PST on sport performance has been widely investigated, and many studies and reviews of PST interventions have been conducted (e.g., Greenspan & Feltz, 1989; Vealey, 1994; Whelan, Mahoney, & Meyers, 1991).

Greenspan and Feltz (1989) reviewed 23 published PST intervention studies that included non-contrived sport performance as at least one of the dependent variables. They found that studies could be classified into those that utilized relaxation training, behavioral tactics, or cognitive restructuring. Although all of the studies that were reviewed reported performance improvements, causality could only be implicated in 11 of the studies. Of these studies, eight reported performance improvements as a result of PST interventions. Most of the studies employed educational programs (rather than remedial programs where intervention is based on a needs assessment), were multimodal (included more than one psychological skill), and tested individual performance rather than team performance. According to the authors, the educational relaxation and remedial cognitive restructuring interventions were most effective in enhancing performance. The studies reviewed did not allow the authors to make conclusions about the effectiveness of behavioral tactics interventions. Some of the problems that were noted in these designs included lack of appropriate control groups, deficiency of manipulation checks, overrepresentation of collegiate samples, and the absence of female and minority participants. In addition, none of the studies included follow-up data in their procedures and the authors noted that these types of data are important since maintenance of psychological interventions is as important as gains found after initial implementation.

In another review of cognitive behavioral interventions in sport, Whelan et al. (1991) explored studies with both non-elite and elite athletes. Most of the interventions surrounded imagery and mental rehearsal, anxiety and arousal management, goal-setting, and self-monitoring. Of those studies incorporating an elite population, almost all of them were correlational studies. The authors cautioned that evaluated, controlled investigations were warranted.

As a follow up to Greenspan and Feltz (1989), Vealey (1994) reviewed 11 more studies (12 total interventions) that used non-contrived performance as an outcome measure. The techniques utilized in the studies could be categorized into cognitive, cognitive-behavioral, and behavioral interventions. Seventy-five percent of the studies indicated positive influences on performance, but only seven could infer causality because of the methodology used. Most (8) used single subject designs, college athletes (5), and were remedial in nature (9). Eight studies used multimodal interventions, 10 included controls, and only half included a manipulation check. Vealey agreed with Greenspan and Feltz in that the problems that exist in PST research consist of the lack of control groups, manipulation checks, maintenance data, specific treatment descriptions, and publisher bias towards successful research in PST. Additionally, the lack of heterogeneous samples could also compromise the literature. Overall, additional experimental studies with elite samples that include longitudinal data are needed.

Differences in psychological skills among elite level and non-elite level athletes have also been used as support for the effectiveness of PST. Mahoney, Gabriel, and Perkins (1987) surveyed 126 elite, 141 preelite, and 446 collegiate athletes from 23 sports using the Psychological Skills Inventory for Sports (PSIS). The PSIS measures anxiety management, concentration, self-confidence, mental preparation and team emphasis. Elite athletes were found to have better anxiety management, concentration skills, confidence, were more likely to internally and kinesthetically prepare, and were more motivated to perform well than nonelite athletes. Gender and sport type (i.e., individual versus team) differences were found in nonelite athletes. Female athletes had lower self-confidence, used more self-talk, and had more problems with anxiety than males. Individual athletes had more trouble with anxiety, concentration, and confidence levels than team sport athletes.

In another descriptive study, Greenleaf, Gould, and Dieffenbach (2001) found that Olympians' perceptions of factors that positively influenced results at the Nagano and Atlanta games included use of mental skills among others such as preparation, attitude, support, and coaching. Thus, mental skills and use of them can be used to differentiate between elite and non-elite athletes. However, as previous reviewers have stated, research on elite samples tend to be correlational in nature and additional studies that assess use and maintenance of PST using elite samples is warranted. In line with this suggestion, Mamassis and Doganis (2004) implemented a 25-week PST intervention including goal setting, positive thoughts, concentration, arousal regulation, and imagery on Greek, elite, junior tennis players. Using a single case design, two players who received the intervention showed improvement on self-reported anxiety, confidence, and performance, as well as, individual performance statistics. Moreover, they showed more improvement than those individuals who did not receive the intervention.

Utilization of Psychological Skills Training

Despite the imperfections in previous research testing the effectiveness of PST on performance, the overall conclusion is that PST can have a positive affect on performance. Further, the use of mental skills work in training and performance can be applied to all levels of athletes, from recreational to professional. That being said, it would lead one to assume that the majority of athletes engage in PST in some form or another. Whelan et al. (1991) were optimistic in citing that "Generally, sport participants maintain a strong motivation for performance enhancement... and invest themselves in the treatment" (p.321). In one elite sample, Orlick and Partington (1988) reported that Olympic athletes readily use PST for their sport.

In light of the benefits of PST and the importance placed on it by successful athletes, there is still reluctance in implementing a mental skills training program by many athletes. There have been many suggested reasons for the resistance or neglect of PST. In a study involving

college athletes, the primary barriers reported for not contacting a sport psychology consultant were lack of time (87%), not interested in the topic (14%), already performing at a high level (9%), and did not feel it would be beneficial (8%; Zizzi & Perna, 2002). Others have noted that there might be a stigma attached to consulting a sport psychologist (Linder, Brewer, Van Raalte, & De Lange, 1991; Ravizza, 1988). This stigma might stem from the strong (mental and physical) persona that athletes expect of themselves and are expected to uphold by others (Ferrante, Etzel, & Lantz, 1996).

Support for the concept that athletes are more likely derogated if they consult a sport psychologist was upheld by Linder and colleagues (1991). In their first study, 127 male and 80 female undergraduates were asked to review scouting reports of fictitious baseball, basketball, and football players and recommend if the athlete should be drafted. Within each report, athletes were described as having consulted a coach, sport psychologist, or psychotherapist to improve consistency in performance. A significant interaction between consultant and gender was found with male participants recommending athletes that consulted the coach more often than those that consulted the sport psychologist or psychotherapist. Females did not differ in their recommendations across consultation scenarios. In a second sample, older male Lion Club members were given the same instructions. Similar results to the collegiate male sample were found with lower recommendations given to those who consulted a sport psychologist or psychotherapist. There were no differences between the sport psychologist and psychotherapist groups in either sample. In a replication study, college football players were asked to recommend a quarterback who had consulted either of the three above mentioned consultants (Van Raalte, Brewer, B., Brewer, D., & Linder, 1992). In contrast to previous results found with non athletes, football players did not recommend athletes less if they had consulted a sports psychologist. These studies suggest that perhaps the stigma attached to consulting a sport psychology

consultant only lies within males and those outside of athletic participation and does not explain why athletes themselves do not utilize services.

The reluctance to use performance enhancement services is even evident in some Olympic athletes. Sport psychology consultants associated with Olympic teams in the 1980s reported that consultation problems included the perception that some athletes were not interested or were turned off to services (Gould, Tammen, Murphy, & May, 1989). The question lies in what to do with those athletes who are not willing to partake in sport psychology services or implement a PST program? One sport psychology consultant that had worked with Canadian Olympians said, "If the athlete says he or she wants a consultant, go for it; if not, forget it" (Partington & Orlick, 1991, p.189). Others confirm the notion that athletes who are resistant at adopting PST should not be forced into utilizing services (Weinberg & Williams, 2001) and applied consultants are better off waiting until the athlete approaches the consultant (S. Maniar, personal communication, 2002). These passive tactics might be useful for individual or co-acting team sports; however, it could cause disruption on an interacting team. There are circumstances where sport psychology consultants are asked to work with a team in areas such as team building and PST in order to enhance performance or satisfaction. If there are team members who are resistant to the consultation process, this might negatively affect the outcome of the intervention, disrupt cohesive goals among team members, or influence the perceptions of PST on junior members of the team.

Interventions have been tested in their effectiveness at increasing the use of PST with team members. Using the co-acting sport of wrestling, Gould, Petlichkoff, Hodge, and Simons (1990) implemented a one-week PST program consisting of one hour sessions on relaxation, imagery, goal-setting, and mental preparation. Using two different samples, both senior and junior elite wrestlers, they found that scores on knowledge, perceived importance, and use of

each mental skill increased from pre to immediately post intervention. However, these numbers decreased during a three-month follow-up test but still remained higher than initial ratings.

Brewer and Shillinglaw (1992) evaluated the same variables after their intervention, but employed an interrupted time-series design over a six-week period to compare the results to an internal control group. Four 30 to 40 minute workshops on goal-setting, relaxation, imagery, and cognitive restructuring were held at different time periods for each half of a collegiate men's lacrosse team. Significant results indicated that athletes increased their knowledge, perceived importance, and use of PST. Unfortunately, this study did not employ a female sample, a manipulation check, or data on long-term effects.

Even though workshops have been found to increase self-reported knowledge, perceived importance, and use of mental skills in the short-term (Brewer & Shillinglaw, 1992; Gould et al., 1990), very poor adherence to PST has been reported (Bull, 1991) in one study. After a four-week educationally-based PST program, Bull (1991) found that college male and female volunteer athletes only averaged 17 minutes a week of practice on their mental skills. Despite the low adherence rates, it was revealed that these volunteer athletes had more sport motivation than those who did not volunteer. Reasons for not adhering in the volunteer group included lack of personalized programs, not having enough time, and having disruptive home environments. The reasons for not participating in the training included not enough time, lack of perceived benefits, laziness, and having engaged in PST before. Clearly there is further need to identify why athletes do not partake and maintain PST despite the benefits it could provide. Research is needed to identify these reasons and further develop methods to encourage participation and maintenance in PST. One possible reason is that interventions are tailored towards those ready for behavior change and does not cater to those who still are not completely ready for adopting a new behavior on a regular basis. Applying behavior change theories and models could prove to be

very beneficial for promoting PST. The Transtheoretical Model of Behavior Change in particular, seems to be most valuable as it encompasses more than one behavior change theory and relates to the readiness of individuals to change (Prochaska & DiClemente, 1983).

Addictive and Healthy Behavior Change

The Transtheoretical Model of Behavior Change

The Transtheoretical Model of Behavior Change (TTM) was developed by Prochaska and DiClemente (1983) to conceptualize the complex process of self behavior change. The model stemmed from previous theoretical models and research on self-changers in relation to smoking cessation (as cited in Prochaska & DiClemente, 1983). The model proposes that behavior change is not dichotomous (i.e., you either engage or do not engage in behavior) in nature but occurs in a series of six stages of change. A person can be categorized into one of the stages, precontemplation, contemplation, preparation, action, maintenance, or relapse based on his/her current attitudes and processes used to change the behavior. As in the original research, stages can be explained in relation to those who smoked (Prochaska & DiClemente, 1983). Precontemplators were found to be those not considering quitting smoking within the following year. Contemplators were those planning on quitting within the following six months. Those in preparation had made at least one 24 hour quit attempt and were planning on quitting within the next 30 days (DiClemente et al., 1991). Those in action were people who had recently quit within the past six months. Former smokers were classified as being in maintenance if they had successfully quit smoking for longer than six months. Finally, those who failed their attempt at quitting were categorized into a relapse stage.

The stage of change classifications of individuals were initially developed from the behavior change processes identified to be used by those involved or previously involved in smoking behavior (Prochaska & DiClemente, 1983). In other words, since behavior change is not

a dichotomous phenomenon but rather occurs by progressing through stages, people tend to use different methods or processes (e.g., certain thoughts, particular behaviors) to bring about that progression. These processes can be viewed as the coping attitudes or behaviors that people engage in relative to specific behavior change. In Prochaska and DiClemente's study with 970 people, a separate principal-component analysis using a minimum average partial procedure, and later a confirmatory analysis, yielded 10 identified processes used in smoking cessation. The 10 processes identified were consciousness raising, dramatic relief, environmental reevaluation, social liberation, self-reevaluation, helping relationships, stimulus control, counterconditioning, self-liberation, and reinforcement management (for definitions see Table 1). Although there is some overlap, the first five processes loaded on an experiential factor since they were more cognitive and informational gathering in nature; the latter five loaded on a behavioral factor since they were more action oriented.

Part of the stages of change model for smoking cessation was supported by behavioral data collected on 691 Texas smokers (DiClemente, Prochaska, Fairhurst et al., 1991). Smoking history did not differ among those classified in precontemplation, contemplation, and preparation; however, current smoking behavior did vary. Those in preparation smoked less, had more quitting attempts, and had more concerns about quitting than those in contemplation or precontemplation. Contemplators had greater concerns about smoking and number of prior attempts than precontemplators. Further, in a six-month follow-up after receiving minimal interventions (i.e., manuals), those attempting to quit supported the stages of change model. Those in preparation made significantly more attempts to quit and had more abstainers than those in contemplation and precontemplation at the start of the investigation. The processes of change utilized at each of these stages were also found to help differentiate the stages. Preparers were found to employ more processes in general than contemplators, and contemplators used more

processes than precontemplators. Those in preparation used more behavioral processes, such as stimulus control and counterconditioning, than other stages. Contemplators used more education gathering tactics like consciousness-raising, dramatic relief, and self-reevaluation than precontemplators.

The TTM transcends smoking cessation and has been applied to other addictive and healthy behavior change (Gorely & Gordon, 1995; Herrick, Stone, & Mettler, 1997; Marcus, Banspach et al., 1992; Prochaska, 1994; Prochaska & DiClemente, 1985; Prochaska & Velicer, 1997; Prochaska, Velicer, Rossi et al., 1994) including cocaine addiction, distress management, weight control, exercise, sunscreen use, condom use, and dietary behavior to name a few. Interestingly, Herrick et al. (1997) measured stages of change across four health-related behaviors in 393 state employees. Stages of change was assessed using a one-item question for behavior related to sun exposure, smoking, exercise, and dietary fat intake. Only 18.6% of respondents were in the same stage for all four behaviors and in all cases that stage was maintenance. These differences and similarities lend support to the application of the stages of change model to other behaviors as it is sensitive enough to detect differences in attempts and attitudes towards behavior change for separate behaviors.

Marcus, Banspach et al. (1992) conducted a six-week community intervention in a study designed to assess the usefulness of a stages of change model in exercise adoption. Each of the 610 participants answered one question to assess their current stage of change. Since it was a voluntary campaign, only five people rated themselves in precontemplation, 39% ($n = 236$) in contemplation, 37% ($n = 145$) in preparation, and 24% ($n = 145$) in action with no differences in demographics across stages. Additionally, Prochaska and Velicer (1997) reported stage assignment results using a sample of 20,000 people in an at-risk population over a collection of 15 health related behaviors. They proposed “a general rule of thumb” for those still at-risk for

problem behaviors (i.e., have not completely changed) in that 40% of people will be in precontemplation, 40% in contemplation, and 20% in preparation across behaviors (p. 41). The importance of this distribution is that the majority of individuals will most likely not be affected by action-based interventions. Further, they concluded that the processes used in multiple health-related behaviors (cocaine use, exercise, condom use, and sun exposure) generally encompass the 10 processes identified in smoking cessation. Similarly, Prochaska and DiClemente (1985) found that the 10 processes of change were common across smoking, overeating, and distress control behavior.

The exploration of stages of change and the processes of change used in exercise have been conducted. Gorely and Gordon (1995) measured stages of change and the processes of change for exercise using 583 Australian adults. In support of the stages of change model, those in precontemplation and contemplation reported less exercise frequency than later stages and those in action and maintenance reported more than those in preparation. Additionally, four of the 10 processes (self-reevaluation, consciousness raising, counterconditioning, self-liberation, stimulus control) of change were found to discriminate the stages. In relation to the processes used, they were relatively consistent with the idea that experiential processes are used in beginning stages (precontemplation and contemplation) and behavioral processes are used in latter stages (preparation, action, and maintenance) of the TTM.

Since processes of change have been found to discriminate between stages and stages have been found to predict behavior change maintenance, individualized interventions have been applied to increase successful behavior change (Marcus, Banspach, et al., 1992; Perz, DiClemente, & Carbonari, 1996; Prochaska, DiClemente, Velicer, & Rossi, 1993). The basis of these tailored interventions relies on matching the intervention to the stage of the individual by employing the processes most identified to be used in that stage. Perz et al. (1996) found that

those who naturally applied the appropriate processes according to their present stage resulted in a greater length of abstinence in smoking cessation regardless of similar results at the end of one month. Marcus, Banspach et al. (1992) found that tailored manuals to individual's stage promoted exercise adoption in a community based intervention. Further, Prochaska, DiClemente, et al. (1993) found that an implemented tailored intervention that included interactive computer reports was more successful in the long run in promoting smoking cessation compared to a standard self-help manual and a tailored manual.

The above mentioned results are important in that they contend that success in behavior change interventions can be predicted by the stage of change a person is in at the onset of the treatment. Further, tailoring interventions according to stages of change has shown better adherence to behavior change for individuals compared to other standard interventions and is one way to individualize programs. To tailor an intervention, a person's stage is assessed and then the processes previously identified to be most often used in that stage are taught or encouraged to be practiced to promote positive movement through the stages. Perhaps this can transcend addictive and healthy behavior changes to include all behavior change, including adoption of PST. This would explain the reasons why some athletes do not engage in programs (precontemplators), why some think it is worthy but cannot find the time (contemplators), and why some start (action) but can not maintain the practice (relapse). Since the interventions reviewed in the PST section were not tailored, this may explain why adoption and maintenance of PST in these studies were inconsistent; more research in this area is greatly needed.

Decisional Balance

In a conflict theory approach to decision making, Janis and Mann (1968) proposed that a person moves through five stages on the way to making a "successful" decision (p. 329). The first stage is Appraisal of a Challenge, in which a person becomes aware of the need to change

action because of potential losses that could result if behavior does not change. The second stage includes Appraisal of Alternatives where the choices of alternate behaviors are recalled and assessed. The third stage involves Selection of the Best Alternative and consists of strongly weighing the advantages (pros) and disadvantages (cons) of each alternative behavior. The final alternative behavior chosen results in the maximization of net gains or minimization of serious losses. Next, a person moves into Commitment to the New Policy when a new behavior has been chosen and intentions to change have been shared with others. Usually the person is looking for positive feedback in regard to the new course of action chosen. Finally, Adherence to the New Policy Despite Negative Feedback is a stage similar to the first stage, except the person continues to engage in the behavior without heeding to the potential losses that could be incurred if the behavior is not changed.

Janis and Mann (1968) further developed their behavior change construct to include a decisional balance (DB) sheet model. The balance sheet model is a combination of stages three through five of their conflict theory model. In the balance sheet, the following factors are taken into consideration: 1) Anticipated utilitarian gains or losses to self, 2) anticipated utilitarian gains or losses for significant others, 3) anticipated approval or disapproval from significant others, and 4) anticipated self-approval or disapproval. Basically the positive and negative incentives for each behavior alternative are weighed in regard to the consequences and approval to self and others.

The decisional balance concept has been applied to addictive and health behavior change and has helped validate the stages of change model (DiClemente, Prochaska, Fairhurst et al., 1991; Gorely & Gordon, 1995; Herrick et al., 1997; Prochaska, 1994; Prochaska & Velicer, 1997; Prochaska, Velicer, Rossi et al., 1994). In the same study that validated the first three stages of the TTM, DiClemente et al. (1991) measured decisional balance using the Smoking

Decisional Balance Scale (SDB; Velicer, DiClemente, Prochaska, & Bradenburg, 1985 as cited in DiClemente et al., 1991). The scale includes 10 pros items and 10 cons items for smoking and respondents rate them on a scale from one (*not at all*) to five (*very much*). Those in preparation were found to hold the cons for smoking more important than those in contemplation and precontemplation. The reverse was found for the self-rated importance of the pros of smoking. Precontemplators reported higher pro scores than contemplators and those in preparation. In addition, the decisional balance (pros minus the cons) was greatest for those in preparation.

The application of decisional balance has been applied to multiple addictive and health behaviors (Prochaska, 1994; Prochaska, Velicer, Rossi et al., 1994). Prochaska, Velicer, Rossi et al. (1994) collected stages of change and DB data from 12 different samples of convenience ($N = 3,858$) surveying the behaviors of smoking, cocaine use, weight control, diet, adolescence delinquency, condom use, safe sex, sunscreen use, radon gas exposure, exercise-acquisition, mammography-screening, and physicians assisting smokers. Each participant was classified into a stage of change using a 4-5 item algorithm method and the pros and cons for each behavior were compared across stages for that behavior. For all 12 behaviors, the cons outweighed the pros for those in precontemplation. For 11 of the 12 behaviors, the pros outweighed the cons for those in action in action (except for cocaine use in an inpatient sample). In addition, the pros were greater in contemplation than in precontemplation, and the cons were lower for those in action than in precontemplation. Further, the crossover of the pros and cons occurred within the contemplation stage in 7 of the 12 samples. It should be noted that the preparation stage was only assessed in the exercise acquisition sample and the crossover occurred within this stage for that sample.

These results suggest that the pros and cons related to Janis and Mann's (1968) decisional balance model can be implemented into the TTM. With the additive constructs of pros and cons,

the stages come to life in terms of the positive and negative appraisals and attitudes towards behavior change. The authors further suggest that these relationships equip behavior change agents in goal-directed interventions. More specifically, the goal to promote behavior change would be to increase the pros in behavior change to facilitate movement from the precontemplation stage to the contemplation stage. Next, one needs to aid in the process of decreasing the cons so progression into the action stage can occur. In further exploration of the same data included in the 12 behaviors study, Prochaska (1994) determined that the exact adjustment of the pros and cons to facilitate progress within the stages across behaviors can be standardized. More specifically, to promote movement from precontemplation to action, the pros need to be increased by one standard deviation, an occurrence he coined the “*strong principle*” (p. 47). On the other hand, the “*weak principle*” is that the cons needed to be decreased by one-half of a standard deviation in order for progress to occur from precontemplation to action (p. 47). Prochaska concluded that these data enable behavior change to be predicted as function of increasing and decreasing the pros and cons of change respectively.

The relationship between decisional balance and stages of change has been supported by other researchers. Herrick et al. (1997) found similar patterns of pros and cons in exercise, sun exposure protection, smoking, and dietary fat consumption behavior. The pros were higher and the cons were lower for those in the action and maintenance stages compared to those in the precontemplation and contemplation stages. The crossover of the pros and cons was found to happen between the preparation and action stages for each behavior. Marcus, Banspach et al., (1992) found that tailored interventions that included having individuals consider pros and cons was successful in promoting positive stages of change movement in relation to exercise behavior. In addition, Gorely and Gordon found similar relationships between DB and stages of change in older Australian adults in relation to exercise behavior. This suggests that the TTM concept

including stages of change and DB transcends age and culture. Additional research has included stages of change and DB along with self-efficacy, another concept that has been included in the TTM.

Self-Efficacy

Bandura (1977) proposed the construct of self-efficacy (SE) and its influence on behavior. Self-efficacy is the belief that one can successfully execute the behavior in which he/she intends to engage. This SE concept is different from outcome expectancy in that outcome expectancy is the projection of an outcome as a result of a behavior. Self-efficacy is the belief that one can perform the behavior necessary to produce the outcome results. There are four general sources of SE: 1) performance accomplishments, 2) vicarious experience, 3) verbal persuasion, and 4) emotional arousal. Bandura postulated that the combination of these factors determine efficacy expectations, and in turn, influence subsequent behavior.

Self-efficacy has been included in many studies that include the TTM (DiClemente & Prochaska, 1985; DiClemente, Prochaska, Fairhurst et al., 1991; Gorely & Gordon, 1995; Herrick et al., 1997; Marcus, Selby, Niaura, & Rossi, 1992; Prochaska et al., 1993). In the study previously mentioned, DiClemente et al. (1991) measured smoking abstinence SE along with stages of change and DB data. They used the Smoking Abstinence Self-Efficacy (SASE) developed by DiClemente, Prochaska, & Gibertini (1985; as cited in DiClemente et al., 1991). The SASE measures the confidence level of a person in being able to refrain from smoking in 20 difficult situations. Among the 691 smokers, those in preparation had more self-efficacy in being able to refrain from smoking than did those in contemplation and precontemplation. Those in precontemplation had less self-efficacy than contemplators.

Measures of self-efficacy in healthy behaviors have been created and applied to the stages of change model. Marcus, Selby et al. (1992) developed a five-item measure of exercise

self-efficacy and a five-item (one item per precontemplation, contemplation, preparation, action, and maintenance stages) exercise stages of change scale and administered it to 429 government employees. There were 7.3% of employees in precontemplation, 23.1% were contemplators, 30.4% were in action, and 22.6% were in maintenance. Self-efficacy scores were found to increase from those in precontemplation to those in maintenance, with SE scores significantly differentiating each stage (except preparation and contemplation). The authors noted that exercise SE is related to stages of change the same way as smoking behavior. Thus, exercise adherence interventions may include tactics to help promote SE in individuals. Gorely and Gordon (1995) and Herrick et al. (1997) found similar results in exercise self-efficacy in a population of older Australian adults and self-efficacy across four different healthy behaviors (e.g., exercise, sun exposure protection, smoking, and dietary fat consumption behavior) respectively. In both cases, SE was found to be higher for those in action and maintenance and lowest for those in precontemplation and contemplation regardless of the behavior examined.

Dallow and Anderson (2003) were able to implement the processes of change and self-efficacy into an intervention with sedentary obese women to increase their exercise and dietary intake behavior. Their intervention consisted of education, activities, or behaviors related to all 10 processes of change and all four sources of self-efficacy. Two groups of obese, sedentary women were given individual exercise prescriptions with one lifestyle group receiving additional intervention strategies based on the TTM. Self-efficacy was measured for both groups using the scale developed by Marcus, Selby and colleagues (1992). Through behaviors such as field trips to increase knowledge, strategizing for planning ahead, guest speakers and small prescriptions of exercise to allow for successful experiences, those in the treatment group demonstrated an increase in their exercise and healthy dietary behavior and an increase in exercise self-efficacy after 24 and 48 weeks. Further, the tailored intervention also caused more of an increase in

processes of change used in the lifestyle group compared to the usual care group. Thus, manipulating self-efficacy has been shown to cause an increase in healthy behavior.

Behavior Change Concepts and Psychological Skills Training

With the noted evidence of beneficial application of the Transtheoretical Model to addictive and healthy behavior change, researchers have recently begun to assess the applicability of TTM to PST (Grove et al., 1999; Leffingwell, Rider, & Williams, 2001; Zizzi & Perna, 2003). Some have explored the topic of stages of change in sport psychology as a method of evaluating interventions or workshops and predicting consultations. However, the research conducted in this area is so new that instruments to assess stages of change related to PST are still being developed and validated. The need for additional research in this field is unarguably needed before conclusions about the applicability of the TTM to PST can be justified.

Grove et al. developed a Stages of Change Questionnaire (SCQ) in 1999 in an attempt to measure the effectiveness of a mental skills training program (MSTP) to educate and encourage use of MST. The SCQ is a four-item assessment of stages of change (e.g., I intend to begin using mental skills training as part of my overall baseball training program within the next 6 months) with one item representing four of the TTM stages (precontemplation, contemplation, action, and maintenance). Respondents to the SCQ are classified into a stage based on an algorithm approach. This approach is a way of classifying a person into a stage of change based on his/her response pattern to the four statements. For example, those who answered true to a statement stating that they had the intention of using PST in their overall training program, would be classified in contemplation. In this quasi-experiment, 37 male youth baseball players at an elite level were utilized. Those selected to an elite development squad received a mandatory 6-week MSTP and those not selected to the squad received a 6-week strength training program. The MSTP included education in weekly meetings on arousal regulation, concentration, imagery,

confidence, goal-setting, planning, analysis, and emotional control. The treatment group was given homework incorporating the mental skills and was required to keep a training log. The SCQ was given to both groups prior to the intervention, at the conclusion of the intervention, and at a 3-month follow-up.

Grove et al. (1999) found that the stage classification for each group did not significantly differ prior to the onset of the intervention. However, after the intervention and at the 3-month follow-up, significant differences in stage classifications were found between the two groups. Prior to the intervention, 40% in the treatment group and 47% in the control group were in the action or maintenance stages, whereas, after the intervention 90% of the treatment and 24% of the control group were in these stages. Similar discrepancies were found at the follow-up with 75% of the treatment and 48% of the control group in action or maintenance. The authors concluded that a stages of change measure could be more useful in detecting subtle changes and impact from a MSTP than an objective performance measure. It was also suggested that an ordered scale for assessing behavior changes, much like in the shape of a ladder, could be used instead of the algorithm approach to avoid potential confusion. The results of this investigation are promising; however, similar research involving different populations is warranted. Further, it seems that a mandatory PST intervention would force an individual to move into action if not already in it. Thus, the movement found in the treatment group to active stages might have been a result of the intervention; however, the authors did not comment on this point. The high percentage of those in the treatment group who stayed within the action and maintenance stages at the follow-up testing is more indicative of the benefits of a required program. Needless to say, a mandatory intervention is not often an available, ideal, or ethical option.

Another application of the TTM to psychological skills training was attempted by Leffingwell et al. (2001). In their study, the authors wanted to test the applicability of the TTM

to PST. In order to do this, they needed to create relevant instruments. They developed measurements of Stages of Change for Psychological Skills Training (SOC-PST), Decisional Balance (DB), and a Self-Efficacy (SE) applicable to PST. Each original measurement was administered to 308 NCAA Division I student-athletes and further amended to support their validity and reliability (see method section for more detail on the psychometric properties). The majority of athletes completed the measures and answered questions pertaining to their history of exposure to mental skills training prior to practice and others completed it in an introductory class. Additional information was obtained from the resident mental skills trainer regarding the services that had been provided to those athletes within the study.

Classification of the athletes into stages based on their standardized subscale scores revealed that 29% were in precontemplation, 25% in contemplation, 25% in action, and 21% in maintenance (Leffingwell et al., 2001). The preparation stage is not assessed in this scale as the authors felt that accurate assessment of a stage that may be very temporary and overlapping with other stages may not be plausible since high cross loading would be evident. Further results were as expected; significant differences were found in the pros and cons for those who were in precontemplation and contemplation. Those in precontemplation had more cons for adopting PST than pros and outweighed the cons held by those in action. Contemplators were found to have more pros than cons and the most pros compared to all other stages. Self-efficacy scores were consistent with previous findings with other health behaviors in that higher scores were found for those in action than those in precontemplation, contemplation, and maintenance.

Comparing stage classifications to reported contacts with the mental skills trainer (MST) revealed that those in later stages (contemplation, action, and maintenance) reported more previous experience than those in precontemplation with either consulting a MST or reading material in sport psychology to attempt to enhance their performance. Further, the MST reported

more contact (either in a team or individual session) in the previous year with those in later stages rather than those in precontemplation. Those individuals in later stages were also shown to have significantly more consultations than those in precontemplation with a MST in the following year, indicating the value in promoting positive movement in the stages for consultation purposes. Forty-nine percent of individuals in contemplation, 64% of those in action, and 36% of those in maintenance consulted a MST in that following year compared to only 19% of precontemplators. Although the athletes included in this study were not studied within their team, these results revealed the presence of different attitudes and behaviors towards mental skills training in a group of high level athletes. Even at the Division I level, there were a substantial (29%) number of athletes that were not planning or considering adopting PST into their training. The investigators called for additional research in this area with different populations, multiple-baseline intervention designs, and development of the processes of change measurement since no known study has looked at processes of change with PST.

An early version of the stages of change and decisional balance measures for PST were used by Zizzi and Perna (2003). In their study, they measured the effectiveness of changing stages of change and DB after a 45-minute workshop about PST given separately to seven women's and seven men's high school and collegiate sport teams. As expected, the workshops were successful in increasing pros and contemplation scores and decreasing cons and precontemplation scores. However, there were some inconsistent findings. Out of the 220 athletes, 71 shifted stages of change assignment after the workshop. Of those who shifted, 16% showed positive movement (from precontemplation to contemplation or action), but 16% showed negative movement (from action to contemplation or precontemplation and from contemplation to precontemplation). It was noted that a likely reason for these negative or inconsistent shifts (i.e., how could someone move into action after 45 minutes?) was that athletes' definitions of

mental skills training might not have been accurate prior to the workshop. More specifically, perhaps those who thought they were in action before the workshop realized after the presentation that they were not actually regularly practicing mental skills. Zizzi and Perna did test the *strong* and *weak* principles conceptualized by Prochaska (1994). After their workshops, the standard effect size estimates showed a $\frac{3}{4}$ standard deviation increase in pro scores and a $\frac{1}{2}$ standard deviation decrease in con scores. Unfortunately, a control group was not used in this study and no longitudinal data past one month was obtained. Thus, further investigations need to be completed to test the effectiveness of interventions on athlete's stage of change for PST and how these effects change over time.

Summary

In this review, research has been reviewed that highlights the effectiveness, importance, and utilization of PST. An overview of the stages of change, processes of change, decisional balance, and self-efficacy in relation to addictive and healthy behavior change has also been summarized. Further, the integration of PST and the TTM has just begun to surface in the literature and was explored. In this research, the importance of PST has been established with differences in use between elite and non-elite athletes. Moreover, the effectiveness of such programs has been tested and supported. Thus, given the importance and effectiveness of PST, one would assume that interventions based on teaching athletes these skills would result in compliance and adherence to PST by athletes. However, contrary to expectations, the utilization of PST is not a matter of being educated or even being concerned about the stigma surrounding its use. The transtheoretical model, decisional balance, and self-efficacy relating to behavior change for addictive and healthy behaviors have been applied to the behavior change of adopting psychological skills training. Grove et al. (1999) found that a stages of change measure can be used as an evaluation measurement of a PST intervention with a team. Leffingwell et al. (2001)

found that stages of change, decisional balance, and self-efficacy have similar relationships with PST that they do with addictive and healthy behavior changes. They also found that stages of change was related to those who contacted a sport psychology consultant. Is it the case that getting athletes to adopt PST and utilize sport psychology services is a matter of their readiness to adopt change, their pros and cons, and their self-efficacy? Research in this area is still in its infancy and further applications of the TTM and its related factors to PST need to be pursued. Confirmation of the relationship between stages of change, DB, and SE in a different population and without a mandatory PST program is necessary. Further, the exploration of the processes of change athletes use to adopt PST needs to be started so researchers may eventually tailor interventions to those athletes with whom they are working.

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APPENDIX B

Cover Sheet and Demographic Information

NAME: _____

4-DIGIT CODE # _____

(One that you can remember for further surveys e.g., day/year of birth; last 4 digits ss#, etc.)

You will be asked to complete a survey similar to this at the conclusion of camp and in 1 month and again in 4 months. Would you like the 3rd and 4th surveys to be sent to you via:

☐ EMAIL (Address: _____)

or

☐ GROUND MAIL Address: _____

Background Information

1. Age: ☐ under 23 ☐ 23-28 ☐ 29-34 ☐ over 34
2. How many years have you played rugby?
(e.g., 1 spring season and 1 fall season = 1 year) _____
3. How many, if any, caps have you received for the National 15's Team? _____
4. How many, if any, caps have you received for the National 7's Team? _____
5. Previous experience with a mental skills trainer or sport psychology consultant:
☐ Yes ☐ No
6. If you answered "yes" to question 5, briefly describe the type (e.g., individually or team) and estimate the amount (i.e., number of contacts, number of consultants) of contact:
7. Previous experience with mental training for sport other than a consultant (e.g., books, websites, classes, etc.) ☐ Yes ☐ No
8. If you answered "yes" to question 7, briefly describe this experience:

APPENDIX C

Stages of Change – Psychological Skills Training Questionnaire (SOC-PST)

MENTAL TRAINING ATTITUDES AND EXPERIENCES

Directions: The following questions assess your attitudes toward mental training and your previous experiences with mental training. Please indicate your agreement with each item as it applies to you personally.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Mental skills may help me perform, but I don't really think so.	①	②	③	④	⑤
2. It might be worthwhile to work on my mental skills.	①	②	③	④	⑤
3. I am really working hard to improve my mental skills.	①	②	③	④	⑤
4. I have been successful working on my mental skills, but I'm not sure I can keep up the effort on my own.	①	②	③	④	⑤
5. I have difficulties with my mental skills, but so do most other athletes. Why spend time thinking about them?	①	②	③	④	⑤
6. I'm hoping someone could help me improve my mental skills.	①	②	③	④	⑤
7. Anyone can talk about improving their mental skills. I am actually doing something about it.	①	②	③	④	⑤
8. I'm not following through with the mental skills I have already changed as well as I would have hoped, and I would like to continue working on them.	①	②	③	④	⑤
9. I would rather try to cope with my mental skills limitations than try to change them.	①	②	③	④	⑤
10. Maybe a sport psychologist will be able to help me.	①	②	③	④	⑤

11. I am actively working on my mental skills.
- ① ② ③ ④ ⑤
12. After all I've done to try to change my mental skills, every now and again I slip back into old habits.
- ① ② ③ ④ ⑤
- Strongly Disagree Disagree Neutral Agree Strongly Agree

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Leffingwell, T.R. (2001). Stages of change - psychological skills training questionnaire.

Retrieved September 3, 2003 from <http://psychology.okstate.edu/faculty/leffingwell/bcl/resources.html>

13. My attitude about mental skills training has _____ in the last five days/one month/three months. (Please check one)

- ☐ changed in a positive manner
- ☐ changed in a negative manner
- ☐ not changed

Why do you think this change (if any) has occurred?

14. My behavior in relation to mental skills training has _____ in the last five days/one month/three months. (Please check one)

- ☐ changed in a positive manner
- ☐ changed in a negative manner
- ☐ not changed

Why do you think this change (if any) has occurred?

APPENDIX D

Stages of Change for Decisional Balance (SOC-DB)

Directions: Please indicate on the following scale, how important each of the following items is in deciding whether or not to participate in a mental skills training program.

1	2	3	4	5
<i>not at all important</i>				<i>extremely important</i>

If I participated in a mental skills training program...

- ... my self-confidence would increase. _____
- ... my ability to concentrate would improve. _____
- ... I would be proud of myself. _____
- ... I would get an edge over my competition. _____
- ... I would perform better in pressure situations. _____
- ... I would enjoy my sport more. _____
- ... I would develop more as a person. _____
- ... I would know I was doing all I could to improve. _____
- ... I would come closer to reaching my potential. _____
- ... those individuals significant to me would disapprove. _____
- ... it might hurt my performance. _____
- ... my teammates would think I have an interpersonal problem with them. _____
- ... I wouldn't have enough time to study or socialize. _____
- ... it would make me think too much during competition. _____

1	2	3	4	5
<i>not at all important</i>			<i>extremely important</i>	

If I participated in a mental skills training program...

... my teammates would think I am weak. _____

... it would make no difference in my athletic performance. _____

... my coach would think I am not mentally tough. _____

... other people will think I can't handle my own problems. _____

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Leffingwell, T. R., Rider, S. P. & Williams, J. M. (2001). Application of the transtheoretical model to psychological skills training. *The Sport Psychologist*, 15, 168-187.

APPENDIX E

Stages of Change for Self-Efficacy (SOC-SE)

Directions: Please indicate on the following scale, how confident you are for each of the following situations.

1	2	3	4	5
<i>not at all confident</i>				<i>very confident</i>

I am confident in my ability to work on my mental skills...

... in the off-season _____

... even when I have limited time in my schedule _____

... even if people around me don't think it's useful. _____

... even when I don't see immediate benefits. _____

... even without instruction or guidance from a sport psychologist or coach. _____

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Leffingwell, T. R., Rider, S. P. & Williams, J. M. (2001). Application of the transtheoretical model to psychological skills training. *The Sport Psychologist*, 15, 168-187.

APPENDIX F

Processes of Change Checklist

Directions: The following are a list of thoughts or behaviors that can be experienced or utilized during behavior change. Please indicate if you have had similar thoughts or have done similar behaviors in relation to mental skills use in sport EVER and/or in the LAST 4 MONTHS.

EVER	LAST 4 MONTHS	
☐ Yes	☐ Yes	I have made an effort to seek new information and to gain understanding and feedback about mental skills training (e.g., read a book, etc.).
☐ Yes	☐ Yes	I have substituted mental skills training for alternative behaviors (e.g., relaxation training at night instead of watching television).
☐ Yes	☐ Yes	I have had intense emotional experiences (i.e., dramatic thoughts) related to using or not using mental skills training
☐ Yes	☐ Yes	I have considered and assessed how mental skills training affects the physical and social environment (e.g., teammates, interactions with coaches, etc.).
☐ Yes	☐ Yes	I have trusted, accepted, and utilized the support of caring others during attempts to change my use of mental skills.
☐ Yes	☐ Yes	I have changed or managed the rewards or punishments that control or maintain my use of mental skills.
☐ Yes	☐ Yes	I have made a choice and commitment to use mental skills, and believe that I can implement these skills.
☐ Yes	☐ Yes	I have emotionally or thoughtfully reappraised my values or self-image with respect to the use of mental skills training (i.e., I have reevaluated my self-image as an athlete who works on her mental game)
☐ Yes	☐ Yes	I have had an awareness, availability and acceptance of psychological issues related to performance enhancement
☐ Yes	☐ Yes	I have controlled situations and other causes which trigger the use of mental skills

Please list other common thoughts you have about mental skills training:

Please list other common practices (behaviors) you do regarding mental skills training:

APPENDIX G

Presentations Outlines, Team Building Outlines and Handouts: First Camp

First Session

- I. Research thank you
- II. Introduction
 - a. Personal background
 - b. Three roles on the team
 - c. Sport psychology (handouts)
 - d. Availability
- III. Icebreaker: Line-up by experience
- IV. Activity: *Human Scavenger Hunt*
- V. Team Dynamics: Linear Perspective Overview
 - a. Connection to activity
 - b. Team obstacles during event
 - c. Team goals for current event
- VI. Summary

Second Session

- I. Recap progress since last session
- II. Introduce “TEAM” theme with block letters
 - a. “ME” or “WE” in TEAM
 - b. How do we get cooperation form competition?
 - c. How do we progress through stages with high turnover rate and limited time?
- III. Small group activity demonstration: *Win As Much As You Can Tally*
- IV. Identify ideal team player characteristics

V. Strategies for making it happen (handouts)

- a. Self-talk
- b. Concentration
 - i. Routines
 - 1. Individual
 - 2. Team (create)

VI. Summary

Third Session

- I. Changes to ritual
- II. Process previous days implementation of ritual and behavior
 - a. Overview of assertive, aggressive and passive aggressive behavior
 - b. Connections to previous events
 - c. Personal identification of own behavior
 - d. Pattern of team behavior
- III. Recap ideal team player characteristics from first session
 - a. Sources of trust
 - b. Don't try harder - try different
- IV. Present focus - how to increase concentration for upcoming games

Team Building Activities

I. *Human Scavenger Hunt* (Adapted from Janssen, 2000)

- A. Goal: Ice breaker and promote interaction by searching for commonalities
- B. Objective: To work as a team to meet the required task first
- C. Group Size: Teams of 5-10 members
- D. Instructions: Teams are formed and asked to sit together away from other team(s). The leader of the activity will sit in the middle, equal distance from all teams. The leader reads a task (e.g., find two members who have the same middle name) and teams work together to complete it. Once the task has been completed, those individuals that satisfy the requirement come up to the leader. The first group to reach the leader earns one point. The team with the most points at the end of the activity will be the winner and receive a prize (e.g., a sports drink).
- E. Process Questions: How well did your team utilize its resources? How well do you know your teammates? How could you have communicated better? What roles were given, adopted, assigned?

II. *Win As Much As You Can* (source unknown)

- A. Goal: Lesson in rewards of cooperation
- B. Objective: To work with a partner to get “pay-offs”
- C. Group Size: Four pairs of two partners make one cluster. Unlimited amount of clusters.
- D. Instructions:
- E. Process Questions: What did you observe happening? What was your strategy? What strategies were developed as the game progressed within the cluster? How did you and your partner react to cluster strategies? What was the goal, assumed or instructed? What was the difference in how cooperation and competition were valued?

Handouts

WVU Sport Psychology

Linda Keeler, M.A. is a doctoral student in sport and exercise psychology and a master's student in counseling at West Virginia University. She currently works as a graduate assistant in the School of Physical Education teaching undergraduate courses in sport psychology, exercise psychology and sport sociology. She has consulted with college and high school athletic teams and individuals across multiple sports in areas of performance enhancement, team building, recovery from injury, and exercise adherence. After completing her bachelor's degree in Psychology at Colgate University, Linda obtained her master's degree in Kinesiology/Sport Psychology from the University of Maryland at College Park. Linda was a competitive rugby player for twelve years with multiple select-side competitive experience and a member of a nationally ranked club team.

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Dr. Jack Watson, a licensed psychologist and certified consultant with the Association for the Advancement of Applied Sport Psychology (AAASP), will be supervising Linda in her work with athletic teams this semester. Dr. Watson joined the West Virginia University sport psychology faculty in 2001 and has taught undergraduate and graduate courses in sport psychology, sport sociology, and group processes. Dr. Watson has several publications in both sport psychology and counseling psychology, and is listed on the United States Olympic Center Sport Psychology Registry.

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SPORT PSYCHOLOGY PROGRAMMING FOR ATHLETES*

Mental Skills are developed and used by athletes across sports, age, skill and experience levels. Athletes, coaches and sport psychologists who have worked with thousands of high performing athletes at the US Olympic Training Centers have learned the following:

Exceptional mental skills are needed to succeed at the elite level of sport.

Many athletes have been physically dominant at the junior, state, regional, and even national levels. However, high-level collegiate competition puts them up against other equally gifted athletes. To be successful at this higher level requires “metal toughness”.

Mental toughness can be learned in two ways: 1) trial and error, or 2) through a sound mental training program. Trial and error usually takes longer and is less efficient. Without mental training, athletes often miss opportunities to succeed and reach their potential because they are not mentally ready to do so, even if they are physically ready to perform under various pressures.

Mental training isn't easy. Some athletes have the ability to be mentally strong, but never develop that ability well, due to an unwillingness to train the mind along with the body. These are athletes who have some good performances and many sub-par performances. Athletes who do make the effort to train the mind discover that it takes time, regular effort, and persistence, just like physical training. However, just like physical training, the rewards can be great.

Sport psychology is not a “cure-all”

The bad news is that sport psychology **cannot**:

- Replace physical training
- Replace technical training
- Increase your physical potential to excel in a sport

The good news is that sport psychology **can**:

- Increase your ability to be more in control under pressure
- Increase the consistency of your performance
- Help you perform to the best of your ability at a particular time
- Help you perform to the best of your ability at big competitions

*Based on USOC Sport Psychology Staff's
Sport psychology mental training manual.

The Rugby Sport Psychology Mental Skills Menu

Athletic Coping Skills

- Assesses current use of mental skills
- Suggest areas for mental skills improvement

Attention and Concentration

- Awareness of your surroundings and maintaining intensity / focus
- Attention Control and Focus Breathing

Communication with Teammates and Coaches

- Improving interactions between athletes or between athletes and coaches
- Active Listening, Communication Skills, and Assertiveness

Confidence

- Believing in yourself and believing that you can be successful
- Self-talk, Pre-performance Routines, Visualization

Coping with Injury

- Learning to manage pain and return to competition
- Pain Management and Confidence Training

Energy Management

- Finding the optimal level of energy and intensity before performance
- Relaxation, Controlled Breathing, Self-talk

Imagery and Visualization

- Using your senses to re-create an athletic experience in your mind
- Imagery Development and Use

Team Building

- Forming and strengthening team bonds
- Cohesion Activities, Problem Solving and Crisis Intervention

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CONCENTRATION

What You Think Is What You Get

Focus and Attention

In your player profile, how did you rate your concentration skills? You may think that concentration may not be one of the areas you need to improve since you are capable of listening to directions or able to not let the crowd get to you on rowdy days. Those are vital qualities in a successful player; however, concentration is a little more complicated than that. Concentration is attending to relevant cues while blocking out irrelevant cues (Nideffer, 1985). However, knowing what is relevant can be tricky. It may be that you were able to block out the crowd that rowdy day, but you were so intent on watching the ball sail through your hands into your teammates hands that you completely missed picking up the defending bearing up the middle and picking off the pass. Have you noticed that you may not be able to focus or pay attention to as many things as one time as you did before your injury? Well, this is because attention is a fixed capacity compartment. In other words, your mind only has limited room for what it can focus on at one time. What you chose to fill up your attention compartment with can have an effect on your ability to perform certain functions, like a sport skill. Therefore, when performing a skill, the only way to perform it at your best is to essentially only fill up your attention compartment with things (cues) that are relevant to the task. The following are tools to help you focus on only relevant cues while performing an activity.

Determinants of Attention

To focus is basically to pay attention to the right things. What you focus on can be affected by other things like your motivation, physical fitness, and intensity. Have you noticed that late in the match when you are feeling fatigued that you may not make the right decisions? For example, you decide to chip kick down the line when you had clear open space to run. Or have you noticed that when you are not pumped up for a match, your mind may wander and you end up getting injured because you didn't maintain correct form or couldn't evade a tackle?

The Crazy Game of Rugby

Do you remember the first time you saw a game of rugby? Ever try to explain the utter confusion to a new sideline spectator? With 30 ruggers on the pitch at once all running around an odd shaped ball that is sometimes held, sometimes kicked, sometimes stepped over or passed, the game looks like sheer chaos. Well, to those untrained eyes it is chaos. Somehow us players have trained our minds to make sense out of the chaos and pay attention to only the chaotic parts that are necessary at the time. However, this ability is not as easy as it sounds and not everyone develops the efficient trained eyes. The good thing is that concentration can be taught and practiced.

Creating Routines

A way to help your concentration is creating consistent routines for performance. Although rugby is a dynamic game and there are many unpredictables, there are consistent elements like pre-game warm-ups, set pieces, goal kicking, lineout throwing, or lineout jumping to name a few. By creating a succinct routine for these applicable elements, you can decrease anxiety, build confidence, and maintain concentration (Weinberg & Gould, 1999). Neil Jenkins, flyhalf and leading point scorer for Wales, uses a consistent goal kick routine (Jackson & Baker, 2001). For example, the amount and direction of steps he takes away from the ball and the amount of glances he takes after his steps to the posts are highly consistent. You can incorporate deep breaths, imagery, cue words and positive self-talk to help your routine. Jenkins uses cue words like "rhythm" and a visual cue of a spot between the posts. He states, "You've obviously got to find a rhythm and a routine. There's no point in chopping and changing all the time." However, when creating routines make sure you account for situational differences. Jenkins takes more looks when positioning the ball and a longer time for more difficult kicks than easier ones.

Example of A Lineout Throw-In Routine

1. Take 2 deep breaths on the way to the mark
2. Retrieve ball, look at point of ball and position hands
3. Position right foot slightly in front of left foot and say "easy"
4. Raise hands above head, elbows in, hips straight
5. Make call
6. Imagine point of placement and snap at waist to throw.
7. Follow path of ball and get low to clean up loose ball

"I'm trying to eradicate the words 'what if' and 'if only' from my vocabulary"

"Visualise in your head exactly where you want the ball to go"

"I haven't a clue why I stand like I do before I kick the ball - I just found that, by focusing on the tiny details, that's the shape my body forms naturally"

-Jonny Wilkinson, England Flyhalf 1998

Changing Negative Self-Talk to Positive Self-Talk

Once you start recognizing your negative self-talk, you can practice reframing it to something positive. Changing your thoughts to *positive self-talk* will help reduce anxiety, increase confidence, increase motivation, and help you focus on relevant cues. There has even been evidence linking use of positive self-talk to better performance (Williams & Leffingwell, 2002). As you hear yourself say something negative, write it down in a notebook page like the one below and reconstruct it into a positive one.

Situation	Negative Self-Talk Identified	Positive Restructuring
Kick Off	"I don't want the ball to come to me"	"I will be able to field the ball successfully if it comes my way"
Injury Setback	"I'm never going to get better"	"Injuries take time, just stay positive & do my exercises"

APPENDIX H

Presentations Outlines, Team Building Outlines and Handouts: Second Camp

First Session

- I. Introduction (handouts)
 - A. Individual consultations options
 - B. Ongoing research
- II. Icebreaker Round: Answer 3 questions
- III. Recap sessions from last camp
 - A. Team formation
 - B. Aggressive/Assertive/Passive Aggressive behavior
 - C. Chain of command for issues
 - D. Concentration
- IV. Activity: *Group Stand-Up*
- V. Goals for present camp
 - A. Team input
 - B. Rate current status and set measurable goal
- VI. Overview of Team theme
 - A. Quick overview of Wooden's Foundation of Success (handouts)
 - B. Measurement of team's rating of foundation blocks
- VII. Summary

Second Session

- I. Introduction of Pyramid of Success
 - A. Can you name the last 8 NCAA Champions?

- B. Review Wooden's accomplishments
- C. Sandwich approach
- II. Review 5 foundation blocks (handouts)
 - A. How would they be shown?
 - B. Team's current rating
- III. Breakout group activity
 - A. Small group (5) discussion
 - 1. Groups of 5, one foundation block per group
 - 2. "What does it mean?"
 - 3. "Ways it is being shown on this team?"
 - 4. "Ways it can be shown in next year?"
 - 5. "Ways it can be shown in this weekend?"
 - B. Small group presentations to team
- IV. Summary

Third Session

- I. Camp evaluation (handout)
- II. Captains address
- III. Ritual revisited
 - A. Pros/cons
 - B. Vote to keep
 - C. Adjustments
- IV. Industriousness eagle email review
- V. Summary

Team Building Activity

I. *Group Stand-Up* (source unknown)

- A. Goal: Group problem solving with total involvement
- B. Objective: To work as a team to stand-up without pushing up with arms while back to back
- C. Group Size: Whole team, difficulty level increases with group size
- D. Instructions: Demonstrate back to back stand-up with one member modeling communication and contingency plan. Instruct team that they have to stand-up as a whole without pushing off from the ground and without locking arms with someone behind them. Everyone must be connected in a way that a current that touches the end person can travel through the entire group. Team must develop a contingency plan and word in case someone starts to fall to ensure safety.
- E. Process Questions: What strategies did you use? How was it decided upon? How was the strategy communicated? How did everyone know, if so, what the plan was? What changes could have made it more efficient? How does this relate to tasks on the field?

Handouts

FOUNDATIONS OF SUCCESS

John Wooden
www.coachwooden.com

Industriousness (cornerstone):

Industriousness? I mean very simply that you have to work and work *hard*. There is no substitute for work. Worthwhile things come only from work. Hard work is essential, and only you really know if you're giving it everything you've got.

Hard work is essential, and only you really know if you're giving it everything you've got. People who always try to cut corners will never come close to realizing their full potential.

So I chose work as the first cornerstone in the Pyramid of Success. I call it industriousness to make very clear it involves more than merely showing up and going through the motions. Many people who tell you they worked all day weren't really working very hard at all, certainly not to the fullest extent of their abilities.

Industriousness is the most conscientious, assiduous, and inspired type of work. *A willingness to, an appetite for, hard work must be present for success.* Without it you have nothing to build on. You can work without being industrious, but you can not be industrious without work.

Friendship:

For success, either individually or for your team, there must be a level of friendship. It is a powerful force that comes from mutual esteem, respect, and devotion.

It isn't friendship when someone does something nice for you. He or she is simply being a nice person. Friendship is mutual; doing good things for each other. There's no real friendship when only one side is working at it. Both must give for there to be friendship.

Friendship takes time and understanding. Rarely will you find in working toward a common goal that others will be able to resist friendship if you offer it sincerely and openly. However, you may have to prime the pump first. Be brave enough to offer friendship. Friendship includes others and adds strength to your foundation.

Loyalty:

My goodness, how can you work to the best of your ability unless you have someone or something to whom you are loyal? Only then do you gain peace and an increasing ability to perform at your highest level.

Loyalty to and from those with whom you work is absolutely necessary for success. It means keeping your self-respect, knowing whom and what you have allegiance to. It means giving respect to those you work with. Respect helps produce loyalty. *Loyalty is a cohesive force that forges individuals into a team.*

Loyalty is very important when things get a little tough, as they often do when the challenge is great. Loyalty is a powerful force in producing one's individual best and even more so in producing a team's best.

Cooperation:

In order to reach the full potential of the group, there must be cooperation at all levels. This means working together in all ways to accomplish the common goal. And to get cooperation, you must give cooperation.

You are not the only person with good ideas. *If you wish to be heard, listen.* Always seek to find the best way rather than insisting on your own way. All of this requires cooperation. It allows individuals to move forward together, to move in the same direction instead of going off in different directions.

Ten strong field horses could not pull an empty baby carriage if they worked independently of each other. Regardless of how much effort they exerted individually, the carriage wouldn't budge without their mutual cooperation.

Enthusiasm (cornerstone):

On the other side of the Pyramid foundation is my second powerful cornerstone: enthusiasm. By that I mean simply that you have to like what you're doing; your *heart* must be in it. Without enthusiasm you can't work up to your fullest ability.

Because if you don't enjoy your endeavors, it is almost impossible to have enthusiasm for them. And you must have enthusiasm to prepare and perform with industriousness. Enthusiasm ignites plain old work and transforms it into industriousness. Enthusiasm brushes off on those with whom you come into contact, those you work with and for. You must have enthusiasm, especially if you're a leader or if you wish to become a leader.

So as the cornerstones of the Pyramid of Success I placed these two essential qualities: industriousness and enthusiasm. You must be willing to work hard, to be industrious. You must join that with enthusiasm. Separately each is powerful in its own particular way. *Joined together they become a force of almost unimaginable power.*

You need those qualities within yourself. And if you are a leader, you will soon instill those qualities in those under your supervision by your example.

APPENDIX I

Final Manipulation Check

1. Were you present at the February Elite Camp? ☐ Yes ☐ No
2. Did you attend the team building presentations at the February Camp?
☐ Yes, both session ☐ Only the 1st session ☐ Only the 2nd session ☐ No
3. Did you attend the May WNT camp? ☐ Yes ☐ No
4. On a scale from 1 to 7, how approachable was the WNT mental skills trainer?
not at all approachable *very approachable*
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
5. Did you attempt to contact the mental skills trainer this year? ☐ Yes ☐ No
6. If yes, how many times did you attempt to contact the mental skills trainer by the following methods?

(please put the number of contacts in the blank; put a zero if you did not attempt to contact)

Phone calls _____ Email _____ In-person _____
7. If you did not use the mental skills trainer's services, what were the primary reasons you did not?

(please mark all that are relevant)

☐ lack of time ☐ problems reaching mental skills trainer
☐ not interested in topic ☐ did not feel you would benefit from services
☐ already performing at a high level ☐ concerned with how coach/team would react
☐ not comfortable with mental skills trainer
☐ other reasons *(please describe below)*:

8. In the past four months, have you contacted a sport psychologist other than the WNT mental skills trainer for the purpose of enhancing your performance? ☐ Yes ☐ No
9. In the past four months, have you read an article or book about sport psychology with the purpose of enhancing your performance? ☐ Yes ☐ No
10. In the past four months, have you attended a presentation on sport psychology or mental skills outside of those presented at WNT events? ☐ Yes ☐ No
11. In the past four months, have you taken a class on stress management or sport psychology? ☐ Yes ☐ No