

Full Length Research Paper

Psychological skills development and maintenance in professional soccer players: An experimental design with follow up measures

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Psychological skills training and Psychological well-being (PWB) are two essential concepts not only for general mental health but also for athletic performance in sport settings. However, the effects of problems in Sport Training Scale (PSTS) on sport performance and general psychological well-being have not been systematically examined through experimental designs, especially in professional soccer teams. Consequently, the goal of this research was to investigate the relationship between performance related psychological skills (team cohesion, confidence, and anxiety) and PWB and the effects of twelve weeks of cognitive-behavioral conceptual framework-based PST program on psychological skills of a professional soccer team. Results showed improved psychological skills and PWB after 12 weeks of PST. Follow up measurements indicated that improved psychological skills were preserved up to six months. Finally, psychological skills and PWB were found to be interconnected parameters, with congruence components. Overall, the PST program improved athletes' team cohesion, self-confidence, anxiety and PWB levels.

Key words: Psychological skill training, psychological well-being, soccer.

INTRODUCTION

Over the years, many trainers, coaches and sport scientists have acknowledge the fact that psychological characteristics of athletes are one of the primary determinants of success and sustained performance in sports (Whelan et al., 1991; Gould et al., 1999; Ritz, 2012). In today's elite level sport contexts, daily alterations in athletic performance are mostly attributed to psychological factors, such as lack of concentration, having poor arousal management, low motivation,

confidence and high trait anxiety, rather than physical training parameters (Orlick and Partington, 1988; Van Raalte et al., 1994; Ravizza, 2001; Vealey 2005). In this regard, specific mental preparation practices aims at adjusting and improving certain psychological skills which has become an essential components of current training regimens in many professional and semi-professional sports (Bacon, 1989). As defined by Weinberg and Gould (2007), PST means the "systematic and consistent

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practice of mental skills for the purpose of enhancing performance, increasing enjoyment, or achieving greater self satisfaction in sport and physical activity”.

Initial PST applications in professional sport contexts have mostly focused on practicing single psychological skills including physiological and cognitive arousal, use of mental parameters, sustained attention, self-talk, confidence, goal setting and motivation (Wann and Church, 1998). However, such unidimensional approach to psychological skill training was criticized for having conceptual limitations and, thus, subjected to reconsideration by later studies (Williams and Davids, 1998; Tenenbaum and Eklund, 2007). More recent studies, for example, suggested that package PST programs training multiple set of psychological skills in a coherent manner produce more promising results than unidimensional PST programs in terms of reaching and maintaining optimum psychological performance (Hanton and Jones, 1999; MacDougall et al., 2001; Thelwell and Maynard, 2003). The main argument underlying multidimensional approach to PST is to provide both broaden and in-depth practice opportunities for combined set of task relevant to psychological skills, and thus, improve different aspects of sports performance (Edwards and Steyn, 2008). Previous research in team sports, for example, indicated that team players need to develop not only individual psychological characteristics such as ‘self-confidence’ and ‘anxiety management’ but also psychosocial skills facilitating optimum inter group interactions such as ‘team cohesion’ (Green, 1992; Weinberg and Williams, 2001; Morgan, 2006; Paiva, 2006).

Probably the most important question about PST is the effectiveness of it. Comprehensive reviews of the psychological skill training literature have supported the effectiveness of PST in improving the performance and personal growth of athletes (Tenenbaum and Eklund, 2007). Reviews examined all published studies using either group or single subject research designs. Checking within hierarchical order, the first review was published by Greenspan and Feltz (1994). They aimed to test effectiveness of various psychological interventions in sport settings, including golf, karate, skiing, boxing, basketball, volleyball, gymnastics, baseball, tennis and figure skating.

The result of this study indicated that 17 of the 20 studies had positive effect on intervention groups’ performance. In the second review related with effectiveness of PST interventions on performance and personal growth, Vealey (1994) analyzed studies that performed on until 1992. In her study she stressed that 75% (9 of 11) studies employing psychological interventions improved performance in a variety of team and individual sports. Within that same year Weinberg and Comar (1994) analyzed 10 more studies using PST to develop competitive performance. The study’s results showed that 8 of 10 had a positive effect on performance and personal growth (Cox, 2007).

While these studies have provided valuable insights regarding the effectiveness of package programs on relevant psychological skills, longitudinal studies with experimental designs are still very limited for team sports, especially in developing countries like Turkey (Miçooğulları, 2013). Although, for example, professional soccer is the mainstream team sport in Turkey, no experimental studies have been conducted to examine long term effects of package PST programs on performance related psychological skills. Moreover, most of the previous research was conducted with adult and elite athletes providing no research data on the psychological development of young and promising athletes (Jones and Hardy, 1990; Locke and Latham, 1990; Burton et al., 2001; Orlick and McCaffrey, 1991; Miller and Kerr, 2002; McCarthy et al., 2010). Finally, previous meta analyses on PST programs have indicated lack of follow up measures on longitudinal designs, leaving open the question of whether acquired psychological skills can be maintained in athletes. Therefore, the prior goal of this research is to evaluate long term effects of PST program on selected set of psychological skills in young professional Turkish soccer players.

Theoretical basement of Well Being phenomenon showed that it has subjective part (hedonic tradition) and objective part (eudaimonic) (Ryff, 1989). The concept of PWB has been defined – in eudaimonic part - as the realizing potential through some form of struggle (Edwards and Steyn, 2008). As mentioned earlier, PST is directly related with mental health process also PWB draws on mental health too. In addition to practical applications in the sport contexts, researchers have also emphasized the importance of training psychological skills in PWB.

In one of their earlier study, Bacon (1989) found that the essentials of psychological skills can be learned, and also the perspectives acquired from skills can be converted into domains in daily settings. Moreover, in another study -it has been also emphasized- learning psychological skills and employing positive mental perspectives can enhance not only athletic performance in specific but also psychological well being and perceived quality of life in general (Orlick and McCaffrey, 1991). Previous PST studies, however, have seldom focused on well being outcomes of the interventions in professional athletic populations (Edwards and Steyn, 2008).

Therefore, the secondary goal of this research is to examine changes in PWB parameters as a function of PST interventions in young professional Turkish soccer players. Based on the previous studies among track and field (Kirschenbaum et al., 2005), basketball (Edwards and Steyn, 2008), volleyball (Morgan, 2006), rugby (Maynard and Howe, 1987), karate and jogging (McGowan et al., 1991), swimming (Berger and Owen, 1998), it was predicted that PST programs will improve mental health and PWB in soccer players.

METHODOLOGY

Participants

Forty eight male soccer players aged between 16 to 28 years old ($M_{age}= 20.9$, $SD=3.2$) voluntarily participated in this study. None of the participants had previously worked with a PST consultant. Participants were selected from two professional soccer teams in Turkish Football Federation Spor Toto 3. League. The teams were selected purposively. Same category teams were chosen for not having any bias between teams. Initially, there were totally 48 athletes; 24 athletes for the experimental group and 24 athletes for the control group. At the end of the study, there were 48 participants in total, 24 athletes for experimental group with an average of 3.80 years ($SD=0.42$) professional sport experience and 24 athletes for control group with an average of 5.33 years ($SD=3.12$) professional sport experience.

Measuring instruments

Group environment questionnaire

A group environment questionnaire (GEQ; Carron et al., 1985) was used to assess cohesiveness. In this research, GEQ was utilized to investigate cohesion level of professional soccer players. The 18-item GEQ assesses four dimensions of cohesion: individual attractions to the group–social domain reflects an individual's personal desire to remain within the group for social reasons (ATG-S; five items); individual attractions to the group–task assesses an individual's attraction to the group's task, productivity, and goals and objectives (ATG-T; four items); group integration– task measures of the individual's perceptions of the similarity, closeness, and bonding within the group around the task (GI-T; five items); and group integration–social reflects the perceptions of similarity, closeness, and bonding within the group around social orientations (GI-S; four items). All items were rated on Likert scale from 1 (*strongly disagree*) to 9 (*strongly agree*). Responses for each of the four concepts were calculated separately, providing an average score for ATG-S, ATG-T, GI-S and GI-T. The original Cronbach's alpha values of the four scales were 0.70 for (ATG-T/S) and 0.73 for (GI-T/S). The adaptation process of the Turkish version of the Group Environment Questionnaire (GEQ) was applied by Öcel and Aydın (2006). The Cronbach's alpha obtained for total values and sub-dimensions' scores ranged from 0.69 to 0.79. Internal consistency values for the present research showed acceptable values of the four scales were ranged between 0.70 (ATG-T/S) and 0.76 (GI-T/S).

Trait sport-confidence inventory

Trait sport-confidence inventory (TSCI) was designed to evaluate self-confidence level of athletes. TSCI is a measure of the degree of certainty how confident athletes generally feel when they compete in their sport. The TSCI is comprised of 13 items measured on a 9- point Likert scale anchored by *Low* (1) and *High* (9). Adequate internal consistency (0.93) has been reported (Vealey, 1988). Reliability and validity of the Turkish version of the Trait – Sport Confidence Inventory was determined by Engür et al. (2006), and TSCI was used on high school graduate students and internal consistency values were found 0.78 for the their sample.

State-trait anxiety inventory

In this study, trait anxiety was measured by trait form of the State - Trait Anxiety Inventory (STAI) which includes 20-items (Spielberger,

1970). Participants responded to each item according to how they generally feel using a four-point scale ranging from “Almost Never” (1) to “Almost Always” (4). The original Cronbach's alpha value for the trait anxiety scale was 0.83. Original scale was developed on 982 high school and collegiate students but the scale is reported as reliable (internal consistency 0.80) for young players by Carter and Kelly (1997), Griciūtė and Cibulskaitė (2009). Adaptation study of the Turkish version of the State-Trait Anxiety Inventory was applied on 1534 youth and adult, and its internal consistency reliability was 0.94 (Öner and Le Compte, 1983).

Ryff's psychological well-being scale

In this research, psychological well-being was evaluated by Ryff's PWB scale (1989a) on the six dimensions of psychological well-being: purpose in life, positive relations with others, autonomy, personal growth, environmental mastery and self-acceptance. The original version consists of six dimensions of 20 items each but however, the shortened version proposed by van Dierendonck (2004) was used in this research. Totally, there were 39 items for six dimensions. The subscale length varied between six items (Self-acceptance, Positive relations with others, Environmental mastery, Purpose in life), seven items (Personal growth) and eight items (Autonomy). A six-point answering scale was used for all scales, ranging from 1 (totally disagree) to 6 (totally agree).

Procedure

In this research, the cognitive – behavioral consultation model by Murphy and Murphy (1992) was used. An emphasis of Murphy and Murphy's model is designed to view the athlete as a person, not just a competitor, and the evaluation of the athlete's functioning in sports and general family life form all parts of the evaluation. This study used the evaluation of the athlete's functioning in sports.

The program was designed to reveal long term effects of PST on participants by follow up tests. Overall presentation of PST program with its specific time table is presented in Table 1. The program described here involved three different mental abilities: anxiety control, self-confidence and team cohesion (team building). The three psychological skills were selected in the current program because of two factors. Firstly, it is understood that these three skills are the lacking ones in soccer players. Secondly, these skills are particularly important for optimal performance in athletics (Singer et al., 1993; Wann, 1997; Weinberg and Gould, 2007). Components of the psychological skills training program were respectively team cohesion, self-confidence and anxiety.

Weinberg and Gould's (2007) PST program phases (education, acquisition and practice) were pursued to design the general structure of the study. In this part of the study, single psychological skill is explained by the structure of the PST program below. On the whole, author followed a-12-week psychological skills program during the season. Single psychological skill's application continued for three weeks. Weinberg and Gould's (2007) PST program levels were followed to apply skills. The 12 weeks PST program included 48 sessions totally. For single psychological skill, 16 sessions were made. The first four sessions of each skill were for the education phase, 10 sessions were for the acquisition phase and two sessions of the program were for the practice phase.

For each skill, the initial phase of the PST program was the educational phase because many athletes were unfamiliar with theoretical part of the psychological skills and how psychological skill can enhance learning and performance (Weinberg and Gould, 2007). The education phase helps the athlete in identifying basic psychological skills/methods, and realizing their own personal use or patterns regarding each skill/method (Vealey, 1988). The important part of the education phase involves improving athletes'

Table 1. The macro time schedule of procedure.

Week 0	Week 1 – Week 12	Week 13	Week 17	Week 25
Pre-data team cohesion self-confidence anxiety (PWB)	Intervention time period	Post -data	First retention	Second retention

awareness of the role that psychological skills play in performance and personal life's excellence (Ravizza, 2001).

The educational sessions of the program were made in the meeting room of the Club facilities. First weeks (four sessions) for each skill are separated for educational phase. Every educational session was set for twenty minutes. The curriculum of the educational sessions was set to give theoretical basement of the skill (for example; definition of skill), importance of the skill, determinants (for example; correlates of skill) of the skill and relationship between related skill and performance (Self-Confidence and Performance).

The second phase of the PST program is the acquisition phase that adjusts on strategies and techniques for learning various psychological skills (Weinberg and Gould, 2007). While choosing techniques for participants, some scientific clues were followed including shorter training sessions, simpler verbal instructions, and turning the exercises into games. Moreover, some of the related assignments were given to the participants to have regular practice. Detailed information related to those processes was given within each skill's explanation. The acquisition phase continued for ten sessions for each single skill. The last phase of the PST program was the practice phase. The practice phase has three primary objectives:

1. To automate skills through over-learning.
2. To teach players to systematically integrate psychological skills into their performance situations.
3. To simulate skills that athletes will apply in actual competition (Weinberg and Gould, 1997).

PST program phases ranged from 15 to 30 minutes per session. Within this study, it was expected that certain cognitive-behavioral techniques would be utilized, such as team building, goal setting, self-talk, pep talk, breathing, imagery. By this way, athletes' and coaches' inputs guided the development of the PST program.

Data analysis

Obtained data from participants questionnaires' were analyzed and exhibited. Initially, arithmetic averages (means) and standard deviations for demographic information and scale scores were calculated and presented. In this research, only team cohesion skill has sub-dimensions and because of this detail, a mixed design multivariate analysis of variance (MANOVA) was utilized to analyze possible changes from pre-season to post-season and follow up tests. In order to evaluate changes in the measures for self confidence and anxiety skills from pre-season to postseason and follow up tests, a mixed design analysis of variance (ANOVA) was utilized (Thomas and Nelson, 2001). Before applying MANOVA and ANOVA, four assumptions of those were controlled independent observation (Wilks Lambda), multivariate normality, homogeneity of population (Box M test) and interval/ratio scale on DVs (Levene's test). Within-Subjects analysis was used to evaluate the effect of time on experimental and control group. Pairwise comparison was conducted for further analysis within-subjects effects. Between-Subjects analysis was used to measure effect of group between experimental and control group. Follow-up Tukey post-hoc was

used when needed. Significant level was determined as $p < .05$.

RESULTS

As it was stated earlier, the relationship between selected psychological skills and psychological well-being was examined in this current study. Moreover, the impact of a twelve-week psychological skills training program (PST) was assessed. This PST program was constructed on cognitive-behavioral conceptual framework on the team cohesion, confidence, anxiety and psychological well being of an intact team. This part provided results according to their applied rank.

Initially, the effect of PST on team cohesion level was analyzed using a mixed model Multivariate Analysis of Variance. The analysis (4 (time; pre- post-test follow up 1 follow up 2) x 2 (group)) showed a significant time x group interaction effect; *Wilks' Lambda* = .39. $F_{(4, 43)} = 16.61$ $p < .05$. Moreover, time; *Wilks' Lambda* = .30. $F_{(12, 35)} = 6.96$, $p < .05$ and group main effects; *Wilks' Lambda* = .15. $F_{(4, 43)} = 16.98$ $p < .05$ were found to be significant. Follow-up pairwise comparison test for both experimental and control groups in four subscales (ATG-T, ATG-S, GI-T and GI-S) were conducted. The result revealed that whereas ATG-T for experimental group significantly changed from pre-test ($M = 5.24 \pm 1.73$) to post-test ($M = 6.65 \pm .96$), from pre-test to follow-up 1 ($M = 6.72 \pm 1.09$), from pre-test to follow-up 2 ($M = 7.31 \pm 0.62$) ($p < .05$), ATG-T for control group did not significantly change among four measurements (Figure 1).

The other subscales of group cohesion, ATG-S, also displayed similar findings to ATG-T. That is, ATG-S for experimental group changed significantly from pre-test ($M = 5.45 \pm 1.85$) to post-test ($M = 7.02 \pm 1.44$) from pre-test to follow-up 1 ($M = 6.96 \pm 1.21$), from pre-test to follow-up 2 ($M = 6.78 \pm 1.19$) ($p < .05$). However, this pattern was not observed for control group (Figure 2). The third subscale, GI-T and the fourth subscale, GI-S, of group cohesion had also the pattern like ATG-T and ATG-S subscales. The result for GI-T for experimental group significantly changed from pre-test ($M = 6.07 \pm 1.82$) to post-test ($M = 7.46 \pm 1.26$) from pre-test to follow-up 1 ($M = 7.53 \pm 0.83$), from pre-test to follow-up 2 ($M = 7.52 \pm 0.80$) ($p < .05$). However, the result of GI-T for control group did not display a significant difference among 4 measurements (Figure 3). Similarly, although the result for GI-S for experimental group significantly changed from pre-test ($M = 5.92 \pm 0.87$) to post-test ($M = 6.23 \pm 0.87$), from pre-test to follow-up 1 ($M = 7.33 \pm 0.74$), from pre-test to follow-up 2

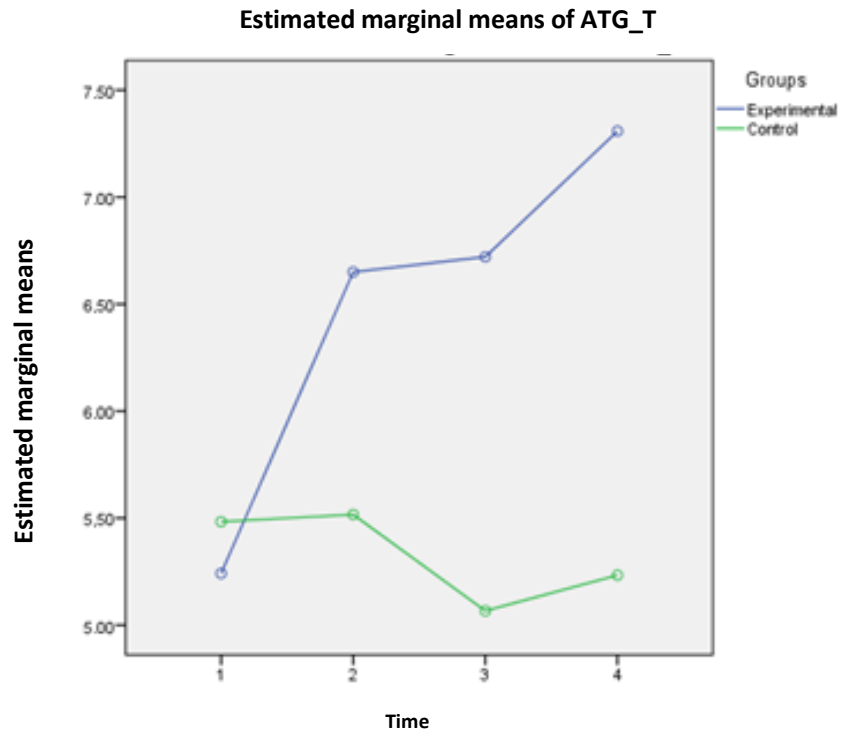


Figure 1. Estimated marginal means of ATG-T between experimental and control group over measurements

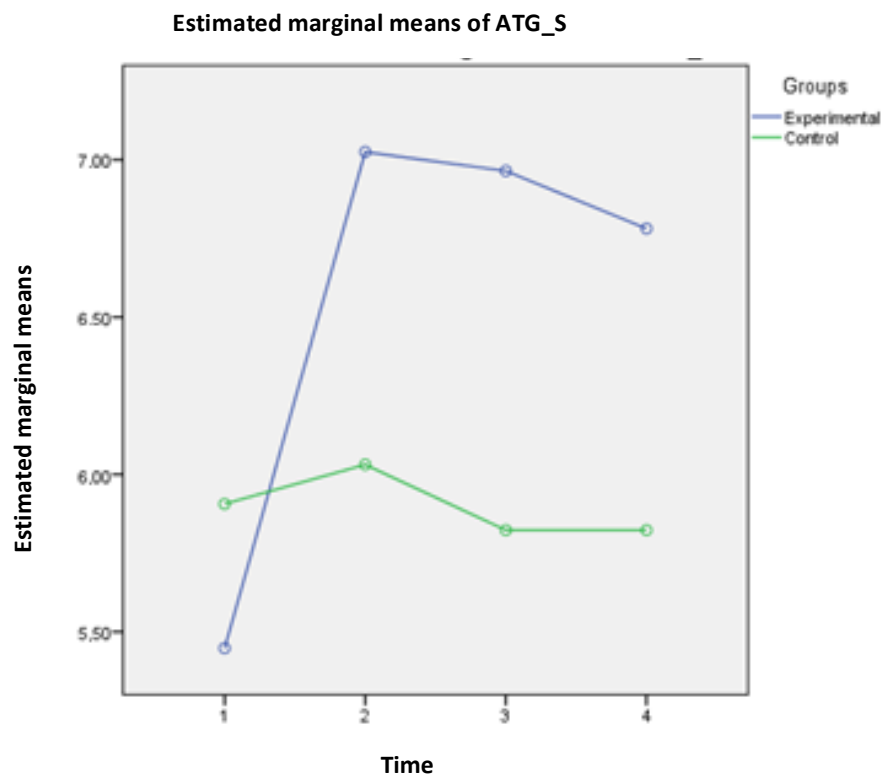


Figure 2. Estimated marginal means of ATG-S between experimental and control group over measurements.

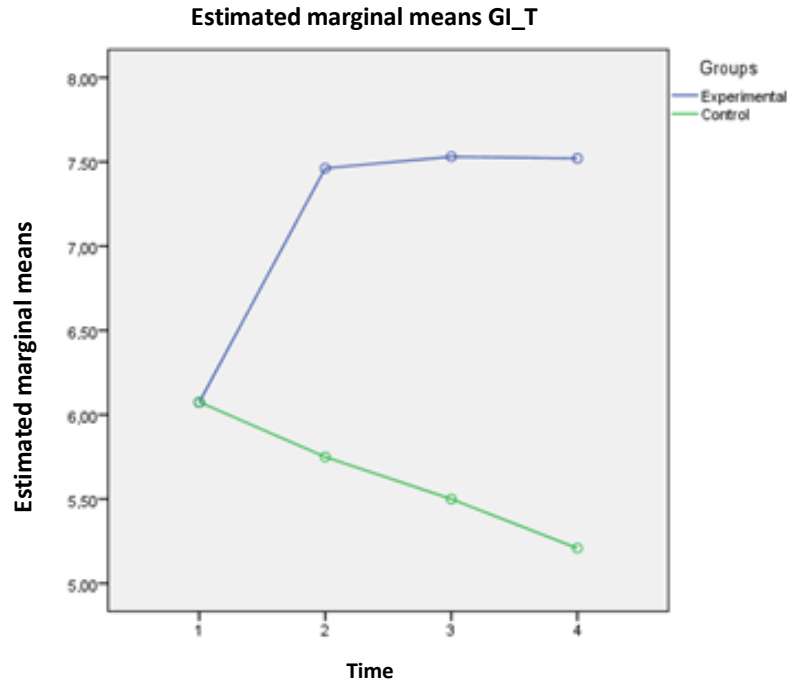


Figure 3. Estimated marginal means of GI-T between experimental and control group over measurements.

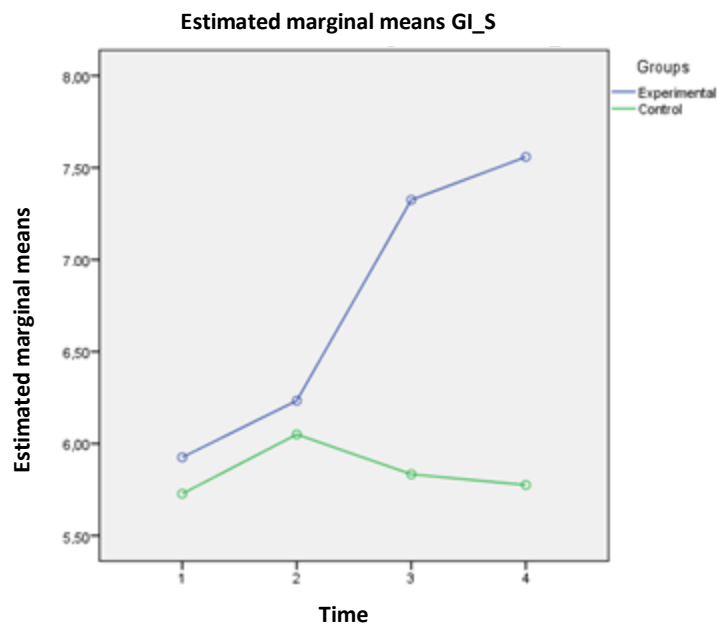


Figure 4. Estimated marginal means of GI-S between experimental and control group over measurements

($M = 7.55 \pm 0.55$) ($p < 0.05$), and the result of GI-S for control group did not significantly change among 4 different measurements (Figure 4).

Secondly, another statistical analysis was conducted to

find out the effects of PST on SC. The result of this analysis displayed a significant group x time interaction $F_{(3, 44)} = 6.39, p < .05, \eta^2 = .30$, and significant time $F_{(3, 44)} = 3.93, p < 0.05, \eta^2 = 0.21$ and group $F_{(1, 46)} = 6.37, p <$

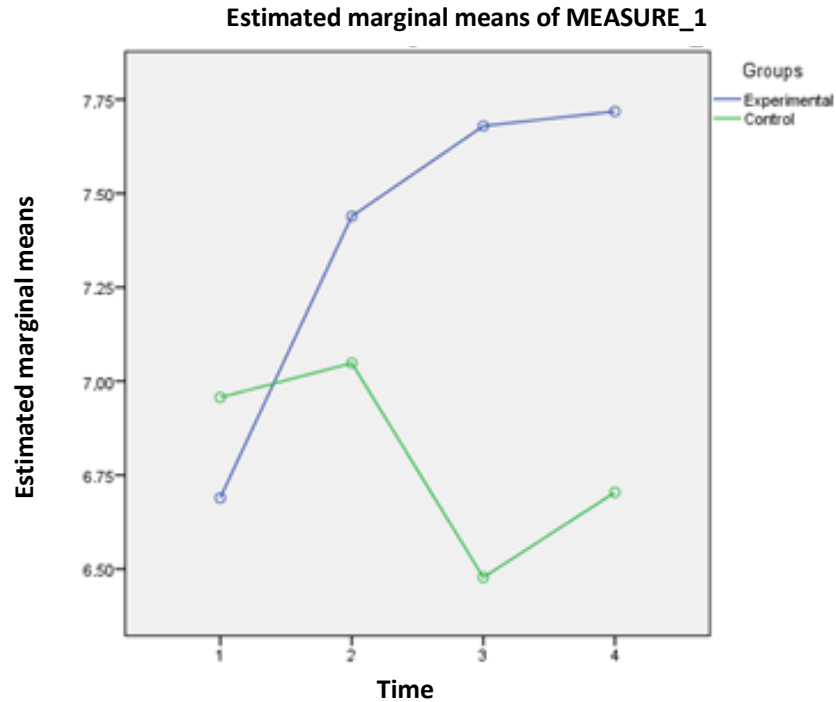


Figure 5. Estimated marginal means of SC between experimental and control group over measurements.

0.05 $\eta^2 = 0.12$ main effects. According to the result of group x time interaction, experimental group obtained positive implications about SC. Follow-up pairwise comparison displayed a significant change for experimental group from pre-test ($M = 6.69 \pm 1.30$) to post-test ($M = 7.44 \pm 0.95$), from pre-test to follow-up 1 ($M = 7.67 \pm 0.70$), from pre-test to follow-up 2 ($M = 7.71 \pm 0.68$) ($p < .05$). Nevertheless, the result of SC for control group did not display a significant difference among 4 measurements (Figure 5).

Thirdly, a mixed design analysis of variance was conducted to test the effects of PST on anxiety. The result for this analysis revealed a significant group x time interaction $F_{(3, 44)} = 4.50$, $p < .05$ $\eta^2 = 0.24$, and significant time $F_{(3, 44)} = 8.60$, $p < .05$ $\eta^2 = .37$, and group $F_{(1, 46)} = 18.54$, $p < .05$ $\eta^2 = .29$, main effects. Significant time x group interaction refers that experimental group obtained positive implications about anxiety. Follow-up pairwise comparison displayed that whereas anxiety for experimental group significantly dropped from pre-test ($M = 2.33 \pm 0.21$) to post-test ($M = 2.30 \pm 0.22$), from pre-test to follow-up 1 ($M = 2.14 \pm 0.23$), from pre-test to follow-up 2 ($M = 2.14 \pm 0.15$) ($p < .05$), and anxiety for control group did not show any significant change among 4 measurements (Figure 6).

Final statistical analysis was conducted to test the effects of PST on PWB. The result for this analysis revealed a significant group x time interaction $F_{(3, 44)} = 220.01$, $p < 0.05$ $\eta^2 = .94$, and significant time $F_{(3, 44)} =$

267.17, $p < .05$ $\eta^2 = 0.95$, and group $F_{(1, 46)} = 18.11$, $p < 0.05$ $\eta^2 = .28$, main effects. Significant time x group interaction refers to the fact that experimental group acquired positive implications about PWB. Follow-up pairwise comparison displayed that although PWB for experimental group displayed significant improvements from pre-test ($M = 16.21 \pm 1.87$) to post-test ($M = 18.14 \pm 1.87$), from pre-test to follow-up 1 ($M = 18.97 \pm 1.78$), from pre-test to follow-up 2 ($M = 18.49 \pm 1.66$) ($p < .05$), PWB for control group did not show a significant difference among 4 measurements (Figure 7).

DISCUSSION

After implemented interventions of psychological skill trainings, results revealed that players in experimental group significantly increased perceptions of team cohesion over the intervention time period more than control group. That is to say, soccer players who took part in the Psychological Skill Training had a significant improvement in their perceptions of team cohesion in general from pre-test to two follow-up tests. In particular, results indicated significant improvement in all subscales of team cohesion which is ATG-T, ATG-S, GI-T and GI-S. The increasement of ATG-T scale showed that implied PST program significantly enhanced athletes' individual perceptions about having enough motivation to be a part of team and team's tasks and shared belief to success.

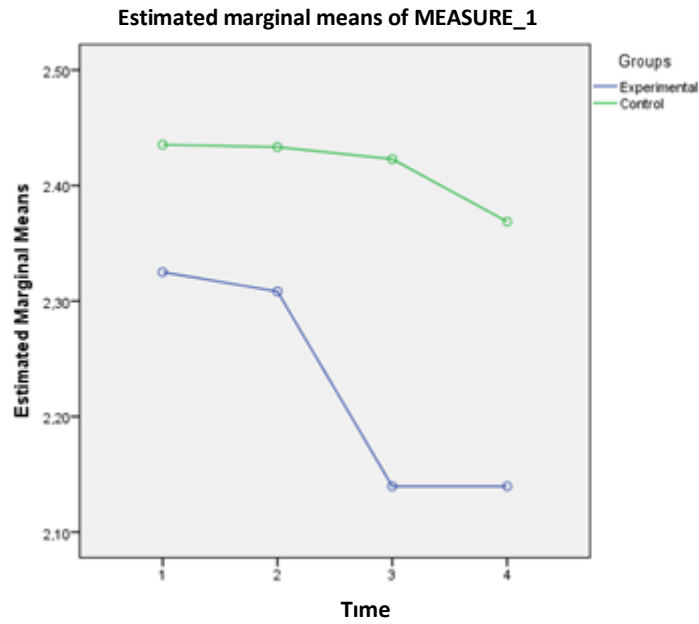


Figure 6. Estimated marginal means of Anxiety between experimental and control group over measurements

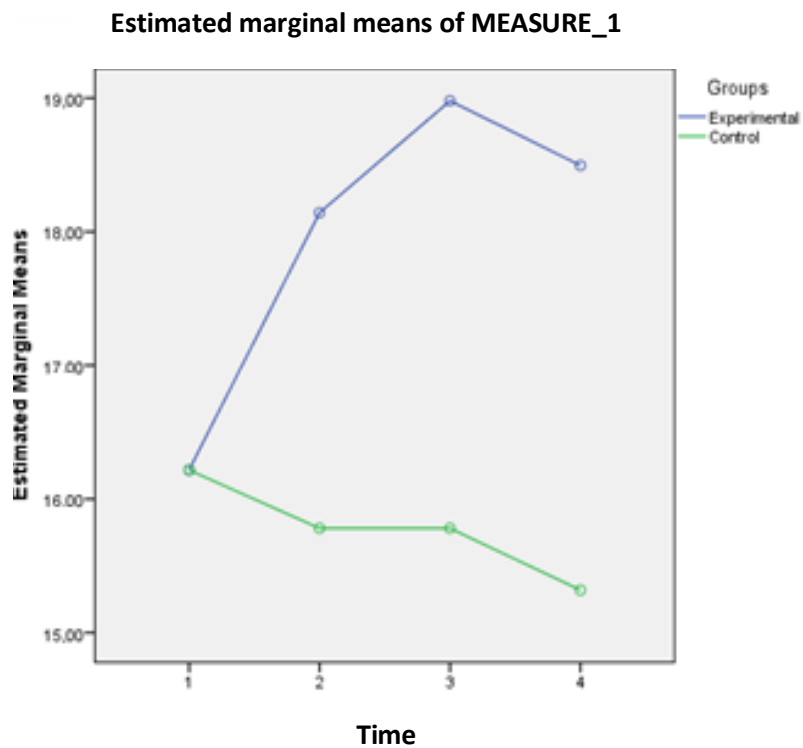


Figure 7. Estimated marginal means of PWB between experimental and control group over measurements

The enhancement of ATG-S scale approved that there was a significant enhancement on athletes' individual

perceptions about having a good social interaction. The improvement of GI-T scale showed that practiced

strategies related with team cohesion have significantly enhanced athletes' individual perceptions about having a support from other team members. In consistent with the hypothesis of this study, the development in GI-S subscale was significant. This means that goal setting and communication interventions did affect the experimental groups' perceptions about being a social unit as a team.

In relation to the study hypotheses, the findings with regard to the significant increase in team cohesion were generally supported by other researches. Studies indicated that enough long duration PST program significantly increased experimental groups' team cohesion through the use of and the realization of the importance of setting common goals, and other methods applied could enhance the team cohesion level by putting all athletes in the exact ways (goals) to reach the teams goal (Burton, 1989; Brawley et al., 1993; Cogan and Petrie 1995; Voight and Callaghan 2001; Carron et al., 2002; Stevens and Bloom 2003; Senecal et al., 2008).

Results also lend support to the perceptions of self-confidence level of soccer players in experimental group significantly increased over the intervention time period. The level of self-confidence of control group remained stable. Follow up tests results showed that experimental group had a significant increase in perceptions of self-confidence from pre-test to post-test. The study also indicated that the increase in the perception of self-confidence was maintaining over two follow-up tests.

The positive change of self-confidence revealed that applied psychological interventions to improve self-confidence significantly enhanced athletes' perceptions and feelings about living and acting in a more secure sportive environment, being more encouraged to behave according to soccer principles, having a better ability on performing motor skills, and having a better ability to deal with stressful sportive situations. These results could be attributed by some reasons which include; creating enthusiastic sportive environment with the help and support of all athletes, developing perceptions of athletes about inspiration for success, trying to establish more positive manners in a team, and directing the athletes to have better level attentional focus within all sport settings.

The results of the current study with regard to the significant increase in self-confidence have been indicated by various researches (Gipson et al., 1989; Cohn et al., 1990; Daw and Burton, 1994; Savoy and Beitel, 1997; Zinnser et al., 1998; Garza and Feltz, 1998; Hanton and Jones, 1999; Hatzigeorgiadis and Morgan, 2006; Edwards and Steyn, 2008; Gucciardi et al., 2009).

Conclusion

Findings from the present investigation lend support for the notion that athletes in experimental group significantly decreased perceptions of their anxiety level over the intervention time period. The perception level of anxiety

of control group remained stable. Follow up tests results showed that experimental group significantly decreased in perceptions of anxiety from pre-test to post-test. The study also indicated that there was a decrease in the perception of anxiety maintaining over two follow-up tests.

The decreasing of anxiety indicated that implied psychological strategies to reduce anxiety significantly enhanced athletes' feelings about being more powerful in front of a stressful sportive environments, being more comfortable to behave according to soccer principles, having a better ability on performing motor skills, and having a proper acceptance opinions to deal with win-lose understanding in sports. These results could be attributed by some reasons which include; applied strategies may modify perceptions of anxiety and those help the athletes achieve a relaxed state of body and mind; also interventions associated with improving self-esteem levels of athletes affected levels of anxiety; and lastly, efficiency of cognitive-behavioral interventions in decreasing anxiety could be explained by athletes' better ability to calm their mind and body by implying relaxation techniques.

The results of some studies with regard to the significant decrease in anxiety have been indicated by various researches (Meyers et al., 1982; Romero and Silvestri, 1990; Holm et al., 1996; Shaffer and Wiese-Bjornstal, 1999; Poland 2007; Wadey and Hanton, 2008). The results produced by the study revealed that athletes in experimental group significantly improved in perceptions of their psychological well-being level over the intervention time period. The level of psychological well-being of control group remained stable. Follow up tests findings showed that experimental group significantly increased in their psychological well-being levels from pre-test to follow up tests.

Intervention implications developed PWB levels significantly. The findings of the various studies with regard to the significant enhance in PWB have been indicated by various researches. The underlying mechanisms accepted to be responsible for results could be applied strategies, and interventions may positively changed constructs of psychological well-being by improved independency and self-determination levels; by helping to develop more efficient ability to manage their life; by having a chance to be open to new experiences; by facing high quality relationships; by believing theirs and others' lives are meaningful and trying to show positive attitudes towards their and others' past life and lastly participants' good intentions to have new approach about their life (Ryan and Deci, 2001; Hair et al., 2003; Marchetti-Mercer, 2003; Abbott et al., 2006; Edwards and Steyn, 2008; Zheng et al., 2014).

Conflict of interests

The author has not declared any conflict of interests.

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