

# Psychological Skills Training Applied to Soccer: A Systematic Review Based on Research Methodologies

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## Abstract

The purpose of this study was to provide a systematic review of studies on psychological skills training (PST) applied to soccer from 1980 until the end of 2012. A total of 28 studies were evaluated and reported in five sections: year overview and journals, research designs, data collection, sample characteristics and PST focus category. PST articles applied to soccer were spread throughout a wide range of journals and had a considerable growth during the 2008-12 period. Results also indicated that most of the research on PST applied to soccer was experimental, longitudinal and combined quantitative and qualitative data. Furthermore, the majority of studies focused on non-elite players with a age under 16 and were conducted in North American countries. Critical and innovative reflections were made in order to highlight potential research gaps and to suggest new perspectives for further investigation.

**Keywords:** psychological skills training, soccer, research design, data collection, sample characteristics

## 1. Introduction

Soccer is undoubtedly one of the most popular sports in the world, engaging people worldwide as players, spectators and TV viewers (Haugaasen & Jordet, 2012). A survey by the *Fédération Internationale de Football Association* (FIFA) in 2006 reported that 265 million people regularly play soccer (FIFA, 2007b), making soccer one of the most highly participated sports in the world. In addition, large soccer events have in recent years drawn more TV viewers than most other sporting events. The world cup tournament of 2006 had 27 billion accumulated viewers and the final alone attracted an audience of more than 700 million (FIFA, 2007a). For Joseph S. Blatter, FIFA president, soccer popularity remains undiminished and is actually increasing (FIFA, 2007c).

This global access to soccer requires an optimal performance from all of its practitioners, particularly, soccer players. In order to boost soccer players' performance, researchers all over the world have actively studied these practitioners in different areas of sports sciences, including sport psychology. In this context, Psychological skills training (PST) research has emerged as an important tool to support the psychological preparation of soccer players in the accomplishment of higher performances (Thelwell, Greenlees, & Weston, 2006, 2010).

The development of any profession relies on research, training programmes and innovations in practice (Gilbert & Trudel, 2004). A detailed analysis of the published research provides a resource for those conducting research in the area and for those reading the body of literature (Silverman & Skonie, 1997). In order to overcome the limitations of traditional reviews or narrative summaries, several authors (Littell, Corcoran, & Pillai, 2008; Noblit & Hare, 1988) had promoted the development of systematic methods (i.e., systematic reviews and meta-analysis). Craig et al., (2008) stressed the benefits of conducting systematic reviews in developing interventions and designing future studies. According to Craig et al., systematic reviews allow researchers to use the best available evidence and appropriate theories to develop future research directions and intervention strategies, as well as to raise awareness of the range of research methods employed in the study area. However, systematic reviews analyzing research methods employed in PST studies applied to soccer are clearly undeveloped. In fact, to our knowledge, no research was identified with this specific purpose.

There are different ways to conduct research (i.e., experimental or descriptive; cross-sectional or longitudinal;

qualitative or quantitative), and different research designs can provide different views about the same research topic. Therefore, when it comes to answering specific questions, researchers have to be critical about the advantages and disadvantages of each research methodology and decide about the most appropriate research tools. In addition, research quality is influenced by sample characteristics, particularly the level of competition, nationality, gender and age of participants. If research trends exhibited their focus on only one type of sample characteristic instead of setting the parameter characteristics of the wider population, the research data would have to face several limitations, since poor sampling is unhelpful for the researcher (Cohen, 2007).

Given the above, it seems useful to conduct a systematic review of PST studies applied to soccer in order to identify current knowledge of area under study and future research directions. Thus the purpose of this study was to provide a systematic review of studies on PST applied to soccer, focusing on research designs, data collection methods, sample characteristics and focus category. It should be noted, that we do not intend to appraise the quality or suitability of the research methodologies developed by the investigators but to examine the multiplicity of approaches employed.

## **2. Method**

The current research design was based on similar recent systematic reviews of literature on athletes' career transition out of sport (Park, Lavalley, & Tod, 2013) and self-talk-performance relationship (Tod, Hardy, & Oliver, 2011).

### *2.1 Search Strategy*

The search strategy included the use of the following electronic databases: Google Scholar, PsycARTICLES, PsycBOOKS, PsycINFO, SPORTDiscus, and Web of Knowledge. In addition to the computerized database search we conducted a manual search of journals, including International Education Studies, International Journal of Sport Psychology, International Journal of Sport and Exercise Psychology, Journal of Applied Sport Psychology, Journal of Clinical Sport Psychology, Journal of Sport Behavior, Journal of Sport & Exercise Psychology, Journal of Sports Sciences, Psychology of Sport and Exercise, Research Quarterly for Exercise and Sport, and The Sport Psychologist. The following search terms were used in combination with "football" or "soccer": psychological skills training, mental training, psychological preparation, psychological strategies, psychological techniques, psychological skills, imagery, self-talk, relaxation, and goal-setting

Inclusion criteria for the present investigation were as follows. Studies had to be: a) related to PST on soccer, b) based on soccer population (groups of soccer populations), c) written in English; and d) published in peer-reviewed journals.

The focus of this search was only on research published in journals, because it represents "a record of an area's scholarships and provides a foundation to understand research trends" (Silverman & Skonie, 1997, p. 300). We acknowledge that other sources (e.g. dissertations, books, conference proceedings) exist and should not be overlooked when seeking to understand, or study the PST process. Nevertheless, "master's theses and doctoral dissertations are not easily accessible, and a rigorous review process is not always required for books" (Gilbert & Trudel, 2004, p. 389). Finally, based on the previous recommendations on conducting systematic reviews (Knipschild, 1995), we do not include the studies that had been published as abstracts or conference proceedings.

### *2.2 Procedure and Analysis*

Hard copies of studies were collected and assessed against the inclusion criteria. Once studies met the selection criteria, we analysed their content based on similar systematic review procedures used by several authors (Goodger, Gorely, Lavalley, & Harwood, 2007; Park et al., 2013; Sallis, Prochaska, & Taylor, 2000; Tod et al., 2011).

Each study was listed alphabetically according to the first author and assigned with a reference number. All papers included in the current systematic review are indicated in the reference list with an asterisk (\*). Data tables were developed to reflect published research articles, research designs, sample characteristics and PST focus category.

Three authors familiar with the field of PST and with experience at employing a variety of qualitative analysis techniques coded the data independently and crossed results. Every time disparities were spotted, the researchers discussed the most suitable changes. Through discussion, a consensus and final coding of the data were agreed between all three researchers.

## **3. Results**

Results are presented according to: (a) year overview and journals, (b) research designs, (c) data collection, (d)

sample characteristics, and (e) PST focus category.

Table 1. Year overview and journals

Characteristics	Reference of studies	Articles n (%)
<b>Year Overview</b>		
• 1992 – 1995	1, 23	2 (7.1)
• 1996 – 1999	7	1 (3.6)
• 2000 – 2003	2, 28	2 (7.1)
• 2004 – 2007	9, 10, 13, 16, 19, 20, 25	7 (25)
• 2008 – 2012	3, 4, 5, 6, 8, 11, 12, 14, 15, 17, 18, 21,	16 (57.2)
Note: The years were delineated into 4-year periods for comparison across equal periods of time		
<b>Journals</b>		
• <i>Journal of Applied Sport Psychology</i>	3, 5, 6, 10, 23, 25	6 (21.4)
• <i>The Sport Psychologist</i>	7, 9, 17, 18	4 (14.3)
• <i>Journal of Sports Science</i>	1, 14	2 (7.1)
• <i>Journal of Sport Behavior</i>	26, 28	2 (7.1)
• <i>Asian Journal of Sports Medicine</i>	8, 24	2 (7.1)
• <i>Psychology of Sport and Exercise</i>	15	1 (3.6)
• <i>European Journal of Sport Science</i>	16	1 (3.6)
• <i>Journal of Sports Science and Medicine</i>	4	1 (3.6)
• <i>Journal of Applied Behavior Analysis</i>	2	1 (3.6)
• <i>International Education Studies</i>	22	1 (3.6)
• <i>Perceptual and Motor Skills</i>	19	1 (3.6)
• <i>Journal of Human Movement Studies</i>	20	1 (3.6)
• <i>Imagination, Cognition and Personality</i>	13	1 (3.6)
• <i>Journal of Education and Practice</i>	21	1 (3.6)
• <i>Physical Education and Sport Pedagogy</i>	12	1 (3.6)
• <i>Procedia- Social and Behavior Sciences</i>	27	1 (3.6)
• <i>Scottish Journal of Arts, Social Sciences and Scientific Studies</i>	11	1 (3.6)

Studies' reference numbers: 1 (Blair, Hall, & Leyshon, 1993); 2 (Brobst & Ward, 2002); 3 (Burton, Gillham, & Glenn, 2011); 4 (Edvardsson, Ivarsson, & Johnson, 2012); 5 (Gucciardi, Gordon, & Dimmock, 2009a); 6 (Gucciardi, Gordon, & Dimmock, 2009b); 7 (Hale & Whitehouse, 1998); 8 (Hashim & Yusof, 2011); 9 (Johnson, Hrycaiko, Johnson, & Halas, 2004); 10 (Jordet, 2005); 11 (Kerkez, Kulak, & Aktas, 2012); 12 (Maitland & Grevis, 2010); 13 (Munroe-Chandler & Hall, 2004); 14 (Munroe-Chandler, Hall, & Fishburne, 2008); 15 (Munroe-Chandler, Hall, Fishburne, Murphy & Hall, 2012); 16 (Munroe-Chandler, Hall, Fishburne & Shannon, 2005); 17 (O & Munroe-Chandler, 2008); 18 (Pain, Harwood, & Anderson, 2011); 19 (Papaioannou, Ballon, Theodorakis, & Auwelle, 2004); 20 Papanikolaou, Nikolaidis, Patsiaouras, & Lazou, 2004); 21 (Papanikolaou, Voutselas, Mantis, & Lapidis, 2012); 22 (Sadeghi, Omar-Fauzee, Jamalis, Ab-Latif, & Cheric, 2010); 23 (Salmon, Hall, & Haslam, 1994); 24 (Seif-Barghi, Kordi, Memari, Ali-Mansournia, & Jalali-Ghomi, 2012); 25 (Thelwell, Greenlees, & Weston, 2006); 26 (Thelwell, Greenlees, & Weston, 2010); 27 (Veraksa & Gorovaya, 2012); 28 (Voight & Callaghan, 2001)

Table 2. Research designs

Characteristics	Reference of studies	Articles n (%)
<b>Research design</b>		
• Descriptive	3, 6, 12, 14, 22, 23, 27/1	7 (25)
• Experimental	1*, 2, 4*, 5*, 7, 8, 9, 10, 11*, 13*, 15, 16, 17*, 18, 19*, 20*, 21*, 24*, 25, 26, 27/2*, 28	22 (78.6)
• Cross-sectional	3, 6, 7, 12, 14, 22, 23, 27/1	8 (28.6)
• Longitudinal	1, 2, 4, 5, 8, 9, 10, 11, 13, 15, 16, 17, 18, 19, 20, 21, 24, 25, 26,	21 (75)
• Qualitative	6, 12, 22	3 (10.7)
• Quantitative	3, 4, 5, 7, 8, 14, 19, 21, 23	9 (32.1)
• Mix Methods	1, 2, 9, 10, 11, 13, 15, 16, 17, 18, 20, 24, 25, 26, 27 <sup>1</sup> , 28	16 (57.2)

Notes: \* Studies using experimental and control group / Paper 27 reported multiple studies and consequently we assigned it with an additional the same sub number: 27/1 (Veraska & Gorovaya, 2012, study 1), 27/2 (Veraska & Gorovaya, 2012)

271 - 27/1 + 27/2

### 3.1 General Findings

Following the aforementioned search strategy, 46 studies were initially identified as being potentially relevant for the review. However, an initial screening procedure excludes 18 papers for the following reasons: i) book chapters (3), ii) unpublished dissertations (3), iii) unpublished documents (4), iv) non-English written papers (8). Consequently, a final count of 28 studies was considered for the purpose of the data collection.

### 3.2 Year Overview and Journals

Table 1 provides an overview of the publication year and journals. PST articles applied to soccer were spread throughout a wide range of journals. The first PST articles applied to soccer emerged in the early 1990s. Since then, this kind of study clearly experienced a large increase in the annual publication mean, from 0.5 articles published yearly in the early 1990s to 4.0 articles published annually most recently. During the 2008-12 period the number of articles published had considerable growth. PST articles applied to soccer were spread throughout a wide range of journals.

### 3.3 Research Design

Table 2 depicts results regarding the research design employed in the selected studies. The present review highlighted a marked imbalance between the experimental and descriptive studies, with a large predominance of the former over the latter. At this level it is also important to note that eleven of the experimental studies did not use a control group (i.e. quasi-experimental studies). Investigators used longitudinal designs more frequently than cross sectional methods. Over half of the PST studies applied to soccer employed mixed methods. In addition quantitative methods were used in nine studies while only three studies employed qualitative research methods.

### 3.4 Data Collection

As seen in table 3, the majority of the studies collected data via questionnaires and observation. The most frequently used questionnaire was the Sport Imagery Questionnaire (SIQ: Hall, Mack, Paivio, & Hausenblas, 1998; and SIQ-C: Hall, Munroe-Chandler, Fishburne, & Hall, 2009;) employed in three studies (Jordet, 2005; Munroe-Chandler, Hall, Fishburne, & Shannon, 2005; Veraksa & Gorovaya, 2012) and two studies (Munroe-Chandler, Hall, & Fishburne, 2008; Munroe-Chandler, Hall, Fishburne, Murphy, & Hall, 2012) respectively.

### 3.5 Sample Characteristics

The analysis of the PST literature applied to soccer allowed a clear picture of the types of samples that researchers have employed (see Table 4). As a result, we are able to highlight sampling gaps. The majority of the

studies included or relied exclusively on soccer players. Regarding the gender analysis, approximately one third of the studies did not provide gender information. When gender was identified, eleven of the studies contained male participants only, six contained both genders and seven contained female participants only. Inspection of table 4 also reveals that nearly one third of the studies (32.1%) employed samples with a mean age under 16, while none of the studies reported samples with a mean age over 25. With respect to the competitive level, the studies included a range of competitive levels, but focus was mainly on non-professional players. The majority of the studies were conducted in North American countries ( $n=11$ ) (particularly in Canada and USA). Eight studies had been conducted in Europe, while five studies did not identify where data originated.

### 3.6 PST Focus

An overview of the PST focus category is presented in Table 5. All of the PST studies were targeted at soccer players. In addition, the majority of the research occurred in a training or competition context, while only two studies occurred within laboratory conditions.

Table 3. Data collection

Characteristics	Reference of studies	A
<b>Data Collection</b>		
• Interviews	6, 9, 10, 12, 18, 22, 24	7
• Observation	1, 2, 9, 10, 11, 13, 15, 16, 17, 19, 20, 21, 24, 25, 26, 27/2,	1
• Questionnaires	1, 2, 3, 4, 5, 7, 8, 9, 10, 14, 15, 16, 17, 18, 23, 25, 26, 27/1,	1
OSSTPQ	3	
TSCI	3	
TEOSQ	3	
MPS	3	
SAS	3, 4	
OSDBQ	3	
LESCA	4	
ACSI-28	4	
AFMTI	5	
DRS	5	
DFS-2	5	
CEF	5	
CSAI-2	7, 14	
POMS-A	8	
SIQ	10, 16, 27	
SIQ-C	14, 15	
SEQ-S	14	
MIQ-R	15, 17	
MIQ	18	
FSS	18	
BMRI-2	18	
IUQ-SP	23	
TTCT	27	
CEF	28	
Questionnaire for social validation	2, 5, 25, 26	
Not validated	1	
• Others <sup>1</sup>	1, 4, 7, 11, 15, 18	6

Table 4. Sample characteristics

Characteristics	Reference of studies	Articles n (%)
<b>Participant type</b>		
• Players	1, 3, 4, 7, 8, 10, 11, 12,13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28	24 (85.8)
• Players and coaches	2, 9	2 (7.1)
• Players, coaches and parents	5, 6	2 (7.1)
<b>Mean Age</b>		
• Under 16	3, 5, 6, 8, 9, 15, 16, 20, 27	9 (32.1)
• 16-20	1, 4, 12, 17, 28	5 (17.9)
• 21-25	7, 10, 18, 19, 21	5 (17.9)
• Range Given	2, 11, 13, 14, 22, 23, 24, 25, 26	9 (32.1)
<b>Participant level</b>		
• Competitive travelling clubs	13, 14, 16	3 (10.7)
• High school / University	1, 2, 4, 7, 17, 18, 21, 22, 25	9 (32.2)
• Club		
Regional level	3, 9, 26, 27, 28	5 (17.9)
Youth leagues	5, 6, 15, 20, 24	5 (17.9)
• Professional / Elite	10, 12	2 (7.1)
• Mixed	19, 23	2 (7.1)
• Not Specified	8, 11	2 (7.1)
<b>Gender</b>		
• Females	1, 2, 3, 9, 13, 16, 28	7 (25)
• Males	5, 7, 10, 11, 18, 20, 21, 22, 24, 25, 27	11 (39.3)
• Both Genders	4, 12, 14, 15, 17, 23	6 (21.4)
• Not specified	6, 8, 19, 26	4 (14.3)
<b>Location</b>		
• North America	1, 3, 9, 13,14, 15, 16, 17, 21, 23, 28	11 (39.3)
• Europe	4, 7, 10, 11, 12, 18, 19, 26	8 (28.6)
• Asia	22, 27	2 (7.1)
• Australia	5, 6	2 (7.1)
• Not identified	2, 8, 20, 24, 25	5 (17.9)

Table 5. PST focus category

Characteristics	Reference of studies	Articles n (%)
<b>PST Target</b>		
Toward soccer players	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28	28(100)
Toward soccer coaches	-	0 (0)
<b>Environment / Context</b>		
Competition	5, 10, 18, 24, 25, 26	6 (21.4)
Training	1, 3, 11, 14, 15, 16, 17, 19, 20	9 (32.2)
Training and competition	2, 9,	2 (7.1)
Laboratory conditions	4, 8	2 (7.1)
Not specific	6, 7,12, 13, 21, 22, 23, 27, 28	9 (32.2)

#### 4. Discussion

The present study aimed to provide a systematic review of the research methodologies employed in PST studies applied to soccer. Although PST research proliferated in North America during the 1980s (Vealey, 2007), our findings showed that PST soccer research only had a consistent development since 2004. Indeed, before the Nineties, PST research applied to soccer seems to be almost non-existent. One possible explanation is that the majority of PST research until the 1990's was targeted for athletes in general rather than athletes of specific sports (Vealey, 1988). A further explanation may be related to the lower popularity of soccer in the USA (where the first sport psychology journals emerged). In a content analysis of PST approaches published in North America between 1980 and 1988, Vealey (1988) stated that 74% of the studies were targeted for athletes in general and only 26% were targeted for athletes in specific sports. PST approaches targeted for specific sports included golf (Keogh & Smith, 1985; Rotella & Bunker, 1981), body building (Kubistant, 1988), skiing (Loudis, Lobitz, & Singer, 1986), basketball (Mikes, 1987) and tennis (Weinberg, 1988).

Boutcher and Rotella (1987) emphasize that PST must be structured according to the specific characteristics and demands of a particular sport to be effective. However sport-specific programmes are more the exception than the rule (Birrer & Morgan, 2010). "This is remarkable, bearing in mind that the performance-relevant tasks of say a soccer player and a 200m breaststroke swimmer are very different" (Birrer & Morgan, 2010, p. 79). Toward this end, PST soccer articles have been published in several academic journals, particularly in the last few years. This can be considered a positive trend for researchers, as there appears to be a broad spectrum of journals from which to select when submitting PST studies applied to soccer. However, this increase of PST soccer studies also creates a new challenge for researchers and practitioners because new substantial contributions to specific scientific knowledge are required. Therefore, it seems important to assess current research methodologies employed in PST studies applied to soccer ("what was done") and to reflect on new directions or approaches that researchers may have to adopt to contribute to the growth of this field ("what needs to be done").

In terms of research designs our findings highlighted a prevalence of experimental over descriptive studies. Although experimental designs are a useful strategy for the examination of different variable relationships, they do not explain in detail the state of art about a specific phenomenon. Therefore, more descriptive studies are needed in the study of PST in soccer. Furthermore, descriptive research allows a measure of status, which is useful to develop the theoretical framework on which experimental research is based.

On the other hand, the examined studies pointed out a dominance of longitudinal approaches. Take into consideration the issue of the present review, i.e. PST, this finding can be considered a positive trend. Longitudinal studies provide rich data that can trace changes overtime with great accuracy (Cohen et al., 2007). These types of studies describe a variety of designs that are conducted over a period of time on the same sample group. For example, longitudinal designs are crucial to determine if the soccer players properly learned to use their psychological skills. In addition, longitudinal designs are also crucial to examine the influence and efficacy of PST interventions over time.

Over half of the PST studies applied to soccer used mixed methods, which is in agreement with the recommendations of several authors (Gratton & Jones, 2004; Page, Martin, & Wayda, 2001; Robbins & Dummer, 2001). Gratton and Jones (2004) stressed the importance of mixing methods combining quantitative and qualitative data. Triangulation of data (i.e. the use of multiple means of data to examine a single phenomenon) can strengthen the validity of the research. Another advantage is the complementary of both qualitative and quantitative methods, providing a global and in-depth exploration of the phenomenon simultaneously (Gratton & Jones, 2004). If research about a specific phenomenon shows an imbalance between the use of quantitative and qualitative methods, it is possible that findings may be biased.

The high reliance on questionnaires and systematic observation pointed out in the present review emphasizes the need for researchers in this field to use a more diverse array of research methods. A theoretical and applied context would be profitable with a diversity of multi-method approaches. Questionnaires and quantitative methodologies alone are not enough to completely understand this phenomenon (i.e. PST in soccer), and qualitative instruments must also be employed. The use of interviews, for example, provides the researcher with a more holistic and contextualized knowledge about the problem and produces relevant information which is not always provided by other assessment methods (Valles, 1999). For the Vealey (1988) "information such as this can facilitate the development of salient and appropriate PST approaches that truly meet the needs of athletes" (p. 332). The deep understanding of athletes' self-perceptions, beliefs and opinions about their knowledge of, use of, and importance placed on PST, could enhance the PST interventions and increase the number of soccer players

adhering to intervention programmes. *What is the importance assigned to the PST by soccer players? Which psychological skills they considered most important for their performance? What are the psychological strategies that they used in their soccer routines? Where, when and why do they use them? Are they receptive to PST interventions? What are their personal experiences regarding PST interventions?*

Regarding sample characteristics, the majority of reviewed studies comprised a sample composed of young and non-elite soccer players. Targeting youth soccer players can be considered a positive trend. According to several authors (Cruz, 1984; Vealey, 1988), the perspectives of adhesion and success of this type of programme will be radically different if, instead of focusing on experienced athletes, it is geared to younger athletes. In addition, "PST with younger athletes can be especially effective rewarding as a means of helping youngsters develop appropriate psychological skills for sport competition" (Vealey, 1988, p. 323). As Orlick (1982) stated "if we expose youngsters to stressful situations such as organized competitive sport, we have a responsibility to teach them strategies to cope with that stress" (p. 323).

On the other hand a possible reason for the lack of studies with elite soccer players could include the extreme difficulty for contact between researchers and these practitioners. Indeed the great popularity of elite soccer players make them practically inaccessible for the majority of the researchers. It should be noted however, that the study of elite athletes can provide useful insights into the current state of PST in a specific-sport (Calmels, d'Arripe-Longueville, Fournier, & Soulard, 2003; Fletcher & Hanton, 2003), as well as valuable information for practitioners (Bull, 1991; Leffingwell, Durand-Bush, Wurzberger, & Cada, 2005). Therefore, more studies with elite soccer players are needed in the study area.

The official survey of FIFA revealed that in 2006 only 26 million (10%) of the 265 million players actively involved in soccer, worldwide, were women and girls (FIFA, 2007b). Indeed women's football has shown slow growth, mainly due to social and cultural barriers that restrain women's participation in this sport (FIFA, 2007d). Surprisingly, the results from the present review showed a balance between the participant gender patterns. The considerable number of studies devoted exclusively to a female sample can be considered important to emphasise the need for PST, as well as to help this gender to overcome some of the social barriers that they still face. It should be noted, however that this finding may be connected with the high number of studies conducted in North America countries, specifically in Canada and USA, where women's football have large popularity.

Another relevant finding highlighted by the present review was the expressive interest that researchers have on PST studies targeted for soccer players. It is widely recognized that the soccer player is a central figure in the PST process. However we cannot forget that several other practitioners, particularly the soccer coach, have a large influence on this process. According to Vealey (1988), coaches "have been long viewed as a key in the PST process, as they must enthusiastically endorse the skills and techniques being taught and implemented with their athletes" (p. 323). Therefore, future research should try to overcome this evident lack of literature. *What is the opinion of soccer coaches regarding the training of psychological skills in soccer players and teams? What is their role in this process? How do they prepare their players psychologically? What psychological strategies and techniques do they often employ? Where, when and why they use it? Are they receptive to work with sport psychologists?*

Additionally, it should be noted that the coach also needs to maximize his own psychological state in order to enhance his coaching effectiveness. Gould, Greenleaf, Guinan, and Chung (2002) stated "that coaches are often required to deal with difficult situations (e.g., selection, tactics, team and athlete performance-related issues, decision making) while ensuring that their own psychological and emotional states remain optimal" (p. 38). It is clear that coaches have special needs of their own and would benefit from PST programming specifically designed for them (Vealey, 1988). Thus, a more detail understanding of this specific area of research (i.e., PST programmes toward to soccer coaches) is also necessary. *What are the soccer coaches' opinions about the PST toward to themselves? What else they do to prepare themselves psychologically for their job? Do coaches use psychological techniques in their coaching routines? Where, when and why they use it? Are they receptive to sport psychologist interventions?*

Finally, the results from our review showed a balance between the research employed in training and competition settings. This is an encouraging finding, because sport psychology research (Gould, Flett, & Bean, 2009) has exposed the equivalent importance of training and competition in psychological preparation. Further research should explore more fully the use and effects of PST in different time frames (before, during and after) of both environments.

There are a number of limitations associated with the current study that ought to be acknowledged. Indeed, the search terms employed and the exclusion of the non-English studies may have resulted in the omission of



relevant, high-quality literature. Furthermore, it is also possible that the exclusion criteria were too many or too restrictive.

## 5. Conclusion

Research in the area of PST applied to soccer has increased considerably in recent years, as reflected in the growing number of studies. To date, investigators have contributed to a better understanding of PST in soccer, however there is still much to explore and further research is needed.

The current systematic review reported the current research methodologies employed in PST soccer studies (“what was done”) and highlighted limitations in this field (“what needs to be done”). Suggestions for future directions for PST applied to soccer have been pointed out. These suggestions have included targeting expert and elite soccer players, targeting coaches in addition to soccer players, increasing descriptive designs to explore in detail the state of art of the PST process in soccer, develop multi-methods for examining the PST process, explore more deeply the use and effects of PST in training and competition settings. It is hoped that these suggested directions may facilitate productive growth and development in the PST applied to soccer research.

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