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**A Holistic Psychological Skills Training Program for  
Table Tennis Athletes: Practical Inquiry**

by

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## Literature Review

### Psychological skills training in sport

Sullivan and Nashman (1998) assert that elite athletes have applied strategies and techniques aiming for enhancing mental skills and general performance since the late 1970s. The potential achievement of change in the mental and behavioural part of the athlete has led to the development of sport psychology as a distinct field of scientific research and practice (Vealey, 1994). Gould and Maynard (2009) defined psychological preparation in sports, in general, as anything athletes do to prepare themselves for sport engagement and as techniques athletes use to ready themselves for specific athletic tasks.

Table tennis players confront an immense need for selective attention and fine-tuned motor skills. It is assumed that interfering cognitions provoke this emotional tension (Krohne and Hindel, 2000). Psychological assistance is important in sports. Coaches should use psychological skills training concerning technical and physical training for attaining optimum self-confidence and peak performance of athletes (Heydari et al., 2018). It is a significant asset for athletes to achieve a state where they are "in the pilot" or, else, "in the zone" (Judge et al., 2011).

Using the EBSCOhost, SCOPUS and Web of Science data basis, we reviewed studies investigating the topic of psychological skills training in sport, as we searched in all three data bases. The methodology between them varied; 7 studies made psychometric testing through questionnaires, five studies used interviews, while researchers in another

seven studies made interventions and another one study combined interviews, observations and questionnaires.

Vealey (1988) distinguished between psychological skills or achievable states for the athlete (e.g. self-confidence, stress management, concentration) and the behavioural methods or strategies athletes use in order to arrive at these states (e.g. goal-setting, imagery, relaxation and self-talk). Most literature on PST use the expressions “psychological skills” and “mental techniques” more or less interchangeably. In a definition given by Birrer and Morgan (2010), a psychological skill is an ability someone learns in order to actualise a specific task. A technique is a procedure used to enhance that capacity to be able to complete this task. Staying in line with the latest definition, in this paper, the term "techniques" is used to refer to the means or the plan of action used to achieve the enhancement of psychological skills.

"Psychological skills training (PST) refers to the systematic and consistent practice of mental or psychological skills to enhance performance, increase enjoyment, or to achieve greater sport and physical activity self-satisfaction" (Weinberg & Gould, 2007, p. 250). Although considerable scientific evidence is available regarding the efficacy of traditional psychological performance enhancement methods, some authors claim that sport psychology interventions have not been critically examined, and most studies investigating the efficacy of PST do not meet the criteria for evidence-based empirical support (Gardner & Moore, 2006).

Eleven reviewed studies investigated the effects of psychological skills training (PST) and general mental strategies programs to both male and female athletes. Two of them aimed at soccer players, while the rest ones were addressed to athletes of other sports or general categories: rugby players, NCAA basketball players, volleyball athletes, swimmers, ballroom dancers, endurance athletes, young athletes, injured athletes, and athletes from various sports combined.

Four studies were related to the practical implementation of mental support services in sports. Correctly, one study implemented PST in a soccer academy, and another study provided two different models of sport psychology support services to the British Amateur Gymnastics Association, the third one applied the self-talk technique to volleyball athletes and examined the effect it had on service skill and self-efficacy. The fourth and final study of this category implemented and evaluated the effectiveness of a brief training program for table tennis players in cognitive-behavioural anger management that aimed at changing their non-effective anger reactions.

The last five reviewed studies were related to conversations and mental management planning. In one study the researchers spoke with experienced sport psychology consultants, in other three studies, they surveyed national coaches and elite athletes' perceptions about sport psychology and how it can be applied in New Zealand, U.K. and U.S respectively. The last study developed an approach to be used by teachers and coaches for the acquisition of mental management skills.

A survey conducted by Jackson in 1992 revealed that 16 national champion figure skaters with at least 13 years of skating experience mentioned having a positive mental attitude, a positive precompetitive and competitive effect, the right level of focus and physical readiness as crucial in their effort to achieve flow states. The proper mental preparation in case of any emergency before it happens ensures that athletes will not be impacted in competition when such situations arise (Judge et al., 2011). As Sinclair and Sinclair convey their thoughts in their study in 1994, young athletes and too many older athletes start to realize at some point that they need to develop their awareness. To reinforce the stated importance of PST, a study conducted by Gould in 1991 showed that sport science and medicine staff members, national team coaches and athletes from various sports had a positive perception about sport psychology consultants. In order for consultants to better assist athletes, respondents in the study conducted by Gould in 1991 identified the need to individualize sport psychology strategies.

## Efficient psychological skills training

Fundamental to the effective delivery of any psychological support service is the expectation that the consultant will deliver what is required when it is requested (Hardy & Parfitt, 1994). As the same study indicated, this demands from the sport psychologists to adopt many roles: facilitator, educator, mediator, counsellor, problem-solver, and sometimes general "odd-job" person. In the same study, the researchers concluded that main characteristics of a sport psychology intervention program are flexibility and readiness to collaborate, the ease with which performers can relate to the sport psychologists, and clarity and practicality of the strategies that the sport psychologists suggest.

However, if we wish to define psychological skills in a precise scientific way, we will take a similar but distinct direction. Acquiring the proper psychological skills through proper training, to which we will refer from here on as PST, an abbreviation of psychological skills training, is believed by researchers to be a great asset that athletes can use to achieve proper mental preparation and problem-solving. According to a review conducted by Birrer and Morgan (2010), high-intensity sports demand the systematic use of “personal development and life skills, arousal and regulation skills, volitional and pain management skills, motivational and recovery skills”. In the same review goal-setting, self-talk, imagery, relaxation techniques, pre-performance and performance routines, stress management and mood enhancement strategies are proposed as coping methods. Several authors (Gould, Murphy, Tammen, & May, 1991; Sullivan & Nashman, 1998;



Vealey, 1988, 2007), state that the specific techniques of goal-setting, self-talk, imagery and relaxation have been the focus of most of the PST research.

Hardy, Jones, and Gould (1996) illustrated that all three athletes, coaches and sport psychologists use psychological skills such as imagery and self-talk as fundamental components of their mental management plan or as auxiliary parts of advanced psychological strategies to achieve higher levels of cognitive restructuring. Some purposes for using each psychological skill are specific to training or competition across each time frame (before, during, and after), whereas purposes differ from environment to environment (Thelwell et al., 2008).

Psychologists experience challenges unique when applying PST to youth populations but also have developed content and delivery strategies to overcome these (Foster, Maynard, Butt, 2006). Orlick and McCaffrey (1991) made the point that children should be treated as exclusive group members. They suggested some guidelines for intervention effectiveness, including using simple strategies, keeping it fun, using strategies with concrete and physical components, and, wherever possible, involving parents. Most research shows that psychological strategies can reduce anxiety or reduce the interpretation of symptoms of performance anxiety as debilitating (Page, Sime & Nordell, 1999).

Athletes themselves tend to define PST in many and different ways. Some athletes tend to regard thinking or daydreaming about their sport as psychological

training (Sullivan & Hodge, 1991). This perspective of mental training by the immediately involved people, the athletes, is crucial in sport psychologists' effort to understand their needs so as to address them better. For example, a survey conducted by Sullivan and Hodge in 1991 highlighted the importance of sport psychology in the training of elite athletes for both coaches and athletes in New Zealand.

In a study conducted by Freitas and his colleagues in 2013, elite Portuguese soccer players mentioned a greater use of psychological techniques in competition setting when compared to the training set. There was also found a variance in the reasons why elite and youngster athletes use those techniques. Elite athletes prefer using goal-setting, self-talk, imagery and relaxation techniques aiming for the proper execution of technical and tactical skills, while youngster athletes set as the goal of PST their further improvement. A final sign of this study is that it would be advantageous to integrate all those four skills within a single and systematic PST program, an integrated methodology that we applied in our intervention.

In a study conducted by Hanton, Wadey and Melalieu in 2008, coaches used self-talk and imagery for similar purposes: for verbalization of coaching points, for emotional control, for rational thinking enhancement, for giving instructions, for reinforcing athletes. A distinct purpose of imagery use was reported to be recreating experiences through images stored. In a study published in 1990, Gould and his colleagues concluded to some rigorous methods for transmitting relaxation, imagery, goal-setting and general mental preparation information to wrestling athletes: group sessions, individual

consultations, and during training sessions PST. The importance of PST during training was also pinpointed in the study conducted by Sullivan and Hodge in 1991. Another essential element of the methodology Hanton and his colleagues suggested was the continuation of PST after the predefined end of the initial intervention. They also mentioned the importance of educating the athlete's coach with regard to PST and proposing him to incorporate those skills into the athlete's training program.

Meyers, Whelan, and Murphy in a study conducted in 1996 found that focus on preparation for the competition, managing performance anxiety, using imagery to enhance performance were all crucial reasons for seeking psychological intervention for elite ballroom dancers. At the same study centering breath, breathing through the nose were mentioned by athletes as techniques which offer them a readiness to perform through finding their center of mass and thus feel grounded and physically ready. In the same study, the imagery was found to raise athletes' vividness, controllability, self-awareness and self-confidence. Finally, this study made clear that distractions should be incorporated into a mental and physical practice session since reduced distractibility is linked to better performance a finding also confirmed in a study conducted by Moran in 1996.

Video analysis and simulation training are two other techniques that we integrated into our intervention and were scrutinized in past researches. Video analysis of past performances is a method which can be used to increase kinesthetic and visual awareness, two significant sources of sensory information which are necessary for high performance

(Morris, Spittle, & Watt, 2005; Murphy & Martin, 2002). Real performance indicators should be helpful also in table tennis to confirm the findings under real playing conditions (e.g., from video observations) (Steffgen, 2017).

Simulation training gives the proper room to athletes to simulate both external conditions, such as crowd noise and competitive rivals, and internal conditions, such as anger and competitive anxiety, associated with performing in a competitive event or match, which usually are not present to the same degree, or even at all, in the training environment (Hardy, Jones & Gould, 1996). This advanced psychological strategy aims to physically and mentally stimulate the competitive environment as closely as possible so that athletes can practice and learn to perform successfully under such stressful conditions. In the study conducted by Hardy and his colleagues, the simulation training strategy was expressed by participants bringing their anxiety-response under their control.

In a mental training program managed by Diment in 2014 addressed to young soccer players and coaches, success varied across the nine clubs and was influenced by factors such as the club's willingness and capacity to adopt new concepts, the presentation of sport psychology in the specific sport it addresses to, that is soccer in our case, language, and time constraints.

Another vital element of the psychological support in sports services is the recognition that the athlete is often best served by the sport psychology consultant

engaging in a broader range of athlete-determined psychological activities than is implied in PST. Hardy and Parfitt in their study published in 1994 found the provision of such a service to be much more demanding than the provision of consultant-prescribed PST.

On their paper in 2016, Foster and his colleagues suggest a more child-centred philosophy for any intervention aimed at youngsters, which is a term that includes children and adolescents. They further develop some fundamental concepts of this philosophy which are interpersonal skills, establishing rapport, using proper delivery medium including visual, physical, technological means and accomplishing PST in physical practice, as well as maintaining engagement and concentration through making those activities fun, simple, personalized and changing them often.

## Purpose

The primary purpose of our study is to delve into the ways young athletes practically use the skills related to the mental part of their gameplay that they train with a sport psychology specialist. We investigate the ways youngsters use psychological skills with relation to attention focusing and management of anxiety and other emotions that are evoked during training. A secondary purpose of our study is to investigate the general psychological needs of each athlete and to try to help them understand and manage those needs through a person-oriented but at the same time holistic approach. The sport investigated is table tennis. Table tennis is the specified field of their life activities that we tried to train and apply psychological skills alongside the athletes. The holistic context of psychological skills' application is their lives in total.

The definition of the central purposes of our study clarifies the main research questions to be answered:

Which are the psychological requirements of table tennis youngsters specifically in their sport? How and through which psychological skills do they try to manage those requirements? How can we transmit useful psychological skills to young athletes intuitively and amusingly? Furthermore, last but not least, which is the most helpful way for athletes to use psychological skills in order to handle matters that generally emerge in their lives?

## Practical Inquiry

The theoretical approach we are going to follow in our study is the practical inquiry, a distinct research method. First and foremost, as Richardson (1994) clarified, "practical enquiry aims for improving practitioners' practice of the relevant field." Applicability is the main feature that distinguishes this method, especially when compared to formal research which does not delve so deeply into day-to-day scheduling and implementation of scientific theories in work fields. The knowledge earned through practical inquiry can then be used by other professionals of the relevant field of practice (Kitano & Pedersen, 2002), which constitutes the central goal of our survey as well. In our case, we interfere with and study young table tennis athletes in order to amplify the existing knowledge for the psychological skills needed not only for table tennis youngsters but for athletes also in general. This kind of knowledge can then be used by other sport psychologists who study and apply psychological support services for athletes.

Narration is an integral part of practical inquiry. Narrative is preferable for creating a brief and densified summary out of many events relating each event with the whole. This method contains further expression and analysis of the feelings of the individuals and favours empathy through communication with the person in front (Elliott J., 2005). "The sum of knowledge that is produced through the interconnection of those events offers insights about the issue investigated" (Hinchman L. P., Hinchman S. K., 1997). In our case, the storytelling of each athlete's PST trajectory creates a significant sum of knowledge that facilitates our procedure of coming up with results and

conclusions and clarifies to the audience table tennis athletes' psychological needs and manners to develop their psychological skills.

## Limitations

Significant limitations still exist in PST related research. Lefingwell, Right and Williams (2001) in their study applying the transtheoretical model of change on NCAA basketball players claim that proper mental training programs have not been implemented and surveyed on athletes, a limitation which indicates the need for PST interventions and research. Compared with the extensive research on elite, and therefore predominantly adult, populations the literature concerning performance enhancement and PST with youngsters are ready for further development (Foster et al., 2016). "There seems to be little genuinely detailed literature on the 'what, who, when, why and where' that relate to integrating psychological skills developmental practices in youth sport programs" (Harwood, 2008).

Additionally and in relation to the content of PST, besides the roles of self-talk, imagery, relaxation and goal-setting, the effects of distractibility and emotional control should be taken into account when considering athletes' mental training programs (Kruk et al., 2017). Additional research is also required to inform practice further. Weiss (1991) argued for using both "a theory-to-practice and practice-to-theory approach when trying to understand children's experience in sport". This approach could be taken further in understanding what children and adolescents might be capable of in terms of engaging



with psychological skills and methods. As Gould and his colleagues concluded in a chronologically close study conducted in 1991, research and experiential knowledge are needed on the role of sport psychology consultants at competition sites and the effectiveness of such on-site consultations.

There has been a lack of scientific research in the psychological dimensions related to table-tennis. In a manner of specifically speaking about table tennis, there has been a lack of investigation on the distinct aspects of table tennis athletes' performance. Research by Georges Steffgen published in 2017 evaluated a cognitive-behavioural program on 18 young table tennis players aiming to work on feelings of "annoyance, frustration and anger" provoked on many occasions. Although this intervention tried to cover the psychophysiological, cognitive and social interaction procedures involved when practising psychological skills (Deffenbacher, 2011; Steffgen, 2014), there were some limitations admitted by the researcher. The assessment of more personal characteristics would help explain why people differ in terms of their positive response to treatment. Notably, this quantitative research does not delve deeply into the analysis of the general mental needs expressed by the athletes as well as the range of psychological changes that can be achieved by such an intervention.

A sport-specific approach is needed, whereby PST is delivered as a part of the athletes' daily training using sport-specific drills (Harwood, 2008; Henriksen, Diment, & Hansen, 2011). At the same time, almost all studies have failed to show a definite impact on performance (Gardner & Moore, 2006). This lack of proof of the precise impact of

sport psychology related interventions to performance can be attributed to many reasons, one of them being resistant to change, which still exists and affects the efficacy of sport psychology interventions despite the extensive literature and the growth of sport psychology (Diment, 2014). Some negative thought association, such as "psychology is just common sense", or negative perceptions of seeing a sport psychology consultant, are present mainly in massive sports such as soccer (Pain & Harwood, 2004).

Gould and his colleagues in their study in 1990 found a dissipation in wrestlers' perceived use of psychological skills after the completion of a 1-week intervention program. Initially, the wrestlers mentioned an increased intention to use the skills covered but later on that volition decreased. It can be quickly concluded that a significant limitation in the intervention mentioned above was the short-term ending of PST, which lead the researchers to suggest that it would be advantageous to modify the intervention in the future so that athletes can become more involved in using goal-setting and mental preparation during the actual training sessions. More time can be devoted to these topics.

Another limitation is related to the quality of the researcher role to the sport psychologist in an active role when those two roles are conveyed to the same person. One crucial element that may simplify this confusion of roles is the recognition that the aims of observations and evaluation are frequently in direct conflict to provide a sport psychology support service (Hardy & Parfitt, 1994).

## Methodology

### Participants

After obtaining institutional ethics approval, the mental support services were proposed to both men and women members of Pefki, Attikis, table tennis team. In the end, the ones who took part in the whole psychological skills training program were five young male athletes aged from 11 to 16 years old. Those five youngsters, along with their three coaches, participated in the interviews evaluating the intervention. The coaches had worked and were working with both adult (18+ years) and youth (< 18 years) table tennis athletes.

### Procedure

In line with sport psychology studies that have conducted exploratory-based research in domains lacking clear conceptual distinctions (e.g., Hays, Maynard, Thomas, & Bawden, 2007; Slack, Maynard, Butt, & Olusoga, 2013), this study adopted a qualitative design. As Hancock, Ockleford & Windridge (2009) assumed, qualitative research tends to focus on how people or groups of people can interpret reality differently.

Theoretically, this study is underpinned by fundamental principles of a practical inquiry approach Reflection on practice, done systematically and thoughtfully, offers an

approach to research which can extend to "wisdom of practice (Adler, 1993)." Richardson (1996) refers to such research as "practical inquiry." The practical inquiry aims at producing knowledge which may help us think about, understand and improve intervention strategies in any field of practice. This method generates the kind of activism needed to implement and evaluate ideas (Balboa, 1997) in a specific setting (Schubert, 1986). As Schubert claims, induces "increased capacity to act morally and effectively", since it enables readers to appraise the advantages and disadvantages of the ideas and actions implemented and shared in case of putting them into practice in their setting. In the case of sport psychology, and especially in the sport of table tennis, there has been a dearth of practical examination of intervention ideas.

Initiating the connection with Pefki table tennis team on April 2018, six months before the PST individual sessions, I acquainted myself with the team coaches, athletes and parents through training sessions' observation. This procedure lasted until August 2018. On September 2018, concurrently with training sessions and games' observation, I provisionally applied psychological skills to people not participating in regular PST individual sessions, I started providing psychotherapeutic support to a team athlete not participating in the intervention, and I conducted a group presentation regarding parents' role in sports connecting to parents.

On October 2018, the training sessions' and games' observation was continued, I conducted an introductory group presentation regarding sport psychology to the athletes, I responded to youngsters' enquiry for individual sessions regardless of PST sessions, and

the implementation of the PST program started every week for a total period of five months. Initially, a two-session-long performance profiling procedure with each athlete took place. It is critical for the athlete who is in the learning procedure to begin to develop an active awareness of the cognitive and psychological skills associated with physical activity at the beginning of the procedure which creates the ability to control the psychological factors that cause the level of performance to vary (Sinclair & Sinclair, 1994). The assistance of coaches was crucial to the completion of the performance profiling procedure through in-person discussions and filling in of documents with relevant content.

On November 2018, individual PST sessions were continued with content related to the psychological techniques of goal-setting, self-talk and imagery. After the more or less theoretical presentation of those basic techniques, I conducted a group presentation with regards to self-confidence in table tennis. On December 2018, our PST intervention was continued with simulation training exercises. The main goal of this procedure was to help athletes increase their in-game coping with distractors and focusing abilities. The exercises we executed comprised of the card deck, Jenga and table soccer games, including the simulation training exercises' completion of a session assessment form. Besides, relaxation techniques were shown during individual sessions to the youngsters.

On January 2019, individual PST sessions containing simulation training with a card deck, Jenga and table soccer games with the presence of different stimuli disrupting each youngster's during competition concentration ability were conducted including the

simulation training exercises' completion of a session assessment form. Additionally, video analysis of performance's psychological parameters and routines' technique individual sessions were provided. On February 2019, intervention's final month, individual simulation training sessions with higher intensity stimuli presented and a session assessment form to be completed after the completion of the session were carried out along with individual psychological parameters' video analysis sessions and game observation were the services provided to Pefki table tennis team.

Conducting in-depth, one-on-one interview one-month after the completion of the PST intervention enabled a detailed understanding of young athletes' and coaches' experiences when working with youngsters. For the interview process, a semi-structured interview guide with open questions was preferred because this type of questions provide consistency and flexibility, which ensures that the elicited information keeps to the area of the study without restricting participants' responses (Langdridge, 2007). Upon initiation of interviews, standardized instructions reminded interviewees of the broader aims of the study and issues surrounding anonymity and possible discomfort in recollecting any potentially unpleasant experiences when working with youngsters. The difference in terminology between “psychological skills” (e.g., the attribute of motivation) and “psychological methods” used to obtain these (e.g., the technique of goal-setting) were clarified in advance of the interview (Vealey, 1988). All interviews were conducted at a place chosen by the interviewee, which was usually the room at which PST sessions had taken place. Last but not least, after the completion of the results' analysis, a detailed group presentation of the results was provided to Pefki team's athletes

and coaches. According to Savenye and Robinson (1996), results' publication to the participants and the feedback received by them are two essential methods for the reduction of subjectivity's influence and the increase of validity.

## Interview Guide

Our research aimed to follow the parameters establishing trustworthiness in qualitative research. First, there is a clear description and documentation of procedures used "in a publicly accessible manner", as cited by Yin (2011), so that other people can review and try to understand them. This objective offers to others, whether peers, colleagues, or participants, the opportunity to examine and inspect all interviews and study data. Secondly, methods used in the research in general, such as data triangulation through questions referring to a similar aspect of PST asked to different participants, prolonged engagement in the Pefki table tennis community and member checking, that is discussing with study participants on the accuracy of the interview findings, further reinforce study's credibility (Rodgers, 2008). As far as the last method is concerned, Smith and McGannon (2017) argued that member checking result in the creation of a precise and fortified with additional insights data interpretation and also induce the promotion of ethical practice.

Another crucial aspect of any qualitative research is validity and reliability. Hammersley (1990) defines validity as "the truth of the study". (Hansen, 1979) noted that

reliability depends on the effective resolution of internal and external design problems. (LeCompte & Goetz, 1982) define external reliability as the same results' discovery by independent researchers in similar constructs, and internal reliability as evoking the same results in identical constructs.

Studies directed by Peltó and Peltó (1978) and Hansen (1979) distinguish between reliability and validity; reliability refers to the repetition of scientific findings, while validity refers to the accuracy of scientific findings. According to LeCompte and Goetz (1982) internal validity is concerned with the degree to which scientific observations and measurements are real-time representations, while external validity refers to across groups comparisons of representations. (Wolcott, 1994) explains the methods he uses to establish overcome validity's menace; "talk a little, listen a lot...begin writing early...let readers 'see' for themselves...report fully...be candid...seek feedback...try to achieve balance...write accurately" (pp. 348–356). To make ends meet, all the aforementioned methods were used to establish validity and reliability in our current study.

The interview guide was distinguished into two distinct types; one aimed for youngsters and one aimed for coaches. Although distinguished, the interviews were semi-structured with appropriate probe questions to facilitate both clarification and elaboration. Regarding athletes, the full interview guide was split into four main sections: (a) general information (e.g., How long have you been playing table tennis? Which are your most significant achievements? ); (b) integration of psychological skills in their table tennis daily routine and everyday life (e.g., What interested you the most from the sum of our



sessions? Do you use self-talk, imagery or relaxation techniques before, during or after training sessions? Where do you think you can apply what we did in table tennis?); (c) their behaviour interpretation (e.g., What do you keep from your behaviour in everything we did together?) and (d) evaluation and suggestions for improvement of PST sessions' delivery (e.g. What would you redress in what we did and how would you like to do it? Is there anything we did not do while you have detected a specific need where we could work together on?).

Regarding coaches, the full interview guide was equally split into four main sections: (a) general information (e.g., How long have you been involved in table tennis? Do you make a living from table tennis?); (b) comparison with previous psychological intervention's experience (e.g., Do you have any previous experience of psychological training and support in sports?); (c) challenges experienced when working with youngsters and ways of management (e.g., Have you experienced any particular challenges in the delivery of PST with youngsters? Describe a typical training session. How do you deal with psychological factors?) and (d) evaluation and suggestions for the improvement of PST intervention (e.g., In which domains and to what extent do you believe the intervention actualised during these months helped you and the youngsters? Would you like this intervention to continue? In which way and aiming for what?).

## Data Analysis

The following steps were used for the content analysis of the data generated by this study:

- The interviewer transcribed all of the eight smartphone-recorded interviews.
- The investigator read and reread all the pages of my personal diary and the transcribed interviews to identify meaningful topics that characterised the significant ideas raised by the personal diary and the interviews.
- Subthemes or second-level categories were identified to provide further information related to the topics raised from the personal diary and the interviews.
- The interviews were carefully and extensively reviewed.
- Nicknames were used in order to preserve participants' right for privacy and anonymity when presenting a personal diary's example or an interview's extract.

## Results

I have used distinctive topics as the organising principle for presenting results from the two primary data sources: my diary and the individual semi-structured interviews-evaluations. Those two primary data sources are separated into three subcategories: personal diary's topics, athletes' interviews topics, and coaches' interviews topics. All those topics' subcategories are related to the main research questions as exhibited in the introduction chapter.

### Personal diary's topics

In the next pages, the topics stemming from my personal diary will be presented. The central criteria for the division of the topics were, first, the chronological order and, secondly, the people involved in each topic. Three prevailing topics were detected and separated into subcategories. The separation of each topic into subcategories aims to comprehensibly designate details contained in each topic to avoid generating any misunderstanding or confusion to the reader. The first topic complies with the criterion of chronological order and is divided into five subcategories. The second and third topics obey to the second criterion of people involved but to the first criterion as well and are divided into three subcategories each.

## Progressive integration in the team

The first topic established by my personal diary affiliates with the progressive integration inside the table tennis team before the onset of the PST sessions. This integration was a procedure divided into separate stages. First, the interaction and the communication between me and the coaches, the athletes and the team executives, hereto athletes' parents, led to higher intimacy in our relation, contributed to the clarification of the content and the goals of the intervention to the coaches, athletes and team executives but also helped me to assess better the psychological needs of the team. The first highlight of this early-stage interaction was my participation in a basketball game after the completion of a training session, which entrained better bonding between the team members and me.

Second, I attended training sessions regularly, beginning from a training session on the starting month of the season complemented by medical checkups, which offered me the opportunity to further bond with parents and team executives. I continued observing training sessions during the rest of the intervention period, but, at the time before the PST, this activity constituted the principal way to understand better and to end up with precise psychological needs both on an individual and a team level.

A third stage of the integration procedure included the implication of some skills to friends-non table tennis athletes but also to a friend who is a professional table tennis athlete. This phase provided specific actions aiming for reformation and enhancement of the methods to be used later on the intervention with the athletes. A great example

indicating the contribution of this phase to increase the quality of the intervention is the correction made by a friend in some words used to direct the athlete to execute the progressive muscle relaxation technique better. Her scientific background and working experience as a physiotherapist helped transform a somewhat uncertain part of the directions into an understandable guide.

Attending competitive team games from the fans' seats was also an essential part of my integration procedure. Although this observation stage helped me define the general psychological needs of the athletes, but also their specific needs during game time, the most concrete conclusion was related to my suitability for the case behaviour. Given the facts that, firstly, it is quite common for team athletes to compete on different tables concurrently and that, secondly, athletes tend to have eye contact with me during their games, I have to adjust my body language depending not only on the criticality and the turn of the game but also in accordance to the mental state of each athlete on any given time.

Finally, connection with athletes' parents included not only brief chats during random meetings but also well-organised and in-depth conversations. My inaugural presentation related to parents' role in sports gathered a significant number of young athletes' parents. Another unique form of interaction with parents took place when we jointly watched from the fans' seats a match-day with their kids playing. In this occasion, I observed parents' bodily and verbal reactions and interventions during their kids' games and on the intervals between the games and I had conversations with them answers to

their questions on how to cope with psychological issues rising both in kids and parents during match-days. All these forms of interaction suggest reinforcement of my bonding with the athletes since I managed to earn the trust of crucial people in their lives, their parents. These findings chime with previous research considering that, apart from the athletes and the coaches, the sport psychologists collaborate with the administrative staff of a team and the athletes' families (Sullivan & Nashman, 1998).

Communication with team coaches, parents, rest of team athletes

Having presented the stages of the integration procedure, I will go on to display the second topic arising from my diary; the communication between the team coaches and me, parents and the team athletes not participating in the PST sessions from the first day actualising those sessions till the completion of the intervention. In the next few paragraphs, I will specify the different ways of communication with those team members and the effects they induced.

A female adolescent athlete, not participating in the psychological skills sessions, requested individual psychotherapeutic support. We started those sessions early in the season and continued till the end of the season regularly. Given my scientific background in psychology and my training in psychotherapy, we dealt with unresolved thoughts and feelings, leading to troublesome situations in her life in general and not involving only around table-tennis. This type of intervention further points to the holistic model of support offered to the team aiming to cover any needs emerging in the psychological

spectrum, eliciting modifications in my interaction with team members. What I changed was that, when watching team games as a spectator where this particular female youngster participated, I adjusted my type of feedback to the type of relationship we had established through our psychotherapy sessions; I carefully observed and temperately encouraged.

One-on-one, sincere and in-depth conversations with team coaches before, in the course of or after training sessions and competitive games moulded the mental needs and reshaped the type of my intervention in order to address better the deficit emerged individually or on a group level. A great example of the positive contribution is the case of an eccentric spectator during game-time we worked on simulation training with a youngster. My primary source of information for the detailed description of the necessary spectator's behaviour was the athlete experiencing this situation, but coaches' perception of this specific spectator would serve as an essential source as well. The confirmation and further details they offered me on a personal discussion enhanced my role as a simulator for this scenario practised with the athlete.

The progression of individual PST sessions offered a unique opportunity to end up with conclusions regarding parents' role and enhance communication with them. Notably, on the course of a video analysis session with a youngster where we watched together a video filmed by his father from the fans' stand, I focused at some point on his father's repeated reactions. I assumed that this parent was excessively emotional and expressive on the course of the game. This conclusion motivated me to discuss with this

parent, but also with team coaches on the proper type of parental intervention during game time.

Intervention directed to the youngsters

The third and potentially most intriguing topic arising from my diary concerns distinctly the intervention oriented towards the six young athletes of Pefki table tennis team. In the next few paragraphs, I will present the results deriving from the three methods used in this intervention; group presentations, individual PST sessions, and individual sessions beyond scheduled PST sessions.

The first method of group presentations took place during the early stage of the season and was not continued mostly due to lack of coordination, although it was a permanent demand by some athletes and coaches. Those meetings increased youngsters' knowledge concerning the content of sport psychology and to the parameters of self-confidence generally in sports and specifically in table tennis. Additionally, the questions during those meetings set to the youngsters separated in groups presumably motivated them to develop their skills of collaboration and problem-solving, much anticipated in a team sport such as table tennis.

The second method of individual PST sessions occupied the most significant part from the sum of my collaboration with Pefki team. Practical obstacles occurred in the course of those sessions but were overcome. The shifting from the initial meeting room,



the offices next to the training ground, where we confronted many disruptions, to a quiet classroom on another floor inside the school building where the training was taking place, led to comparatively higher levels of concentration on the content of the meeting and to bigger easiness to disclose thoughts, feelings and behaviours since there was no interjection.

Apart from practical issues as those above, I faced technical issues as well. I had to find a way to overcome them so as to enhance the overall quality of the sessions offered. Regulating the athlete's body posture during a card deck exercise is a clear example of an issue of technique I had to manage more efficiently. In the initial repetition of the exercise I gave the freedom to the youngsters to decide on their own whether they should remain seated or standing as the exercise evolved. After they had got acquainted with the content of the exercise, I explained to each one of them on a break between repetitions why standing up helps them be more energetic and simulate better table tennis conditions, given that they remain standing during a table tennis game and not seated. This theoretical explanation and the consequential application of the advisable body posture seems to have resulted in higher benefits gained by both the athlete and me; each athlete would potentially be more committed to the exercise, and I would come up with more salient conclusions about their behaviour.

The last method of individual intervention to athletes was the unscheduled individual sessions. Responding to a request by the athletes or their parents, we operated sessions with some youngsters for a while with content related to troubling issues

appearing in table tennis or other domains of their life such as school obligations. A common request was expressed as follows; "How should we cope with extreme anxiety and stress resulting from high pressure for flourishing results in table tennis games or even both in table tennis games and school grades?" The basic principle transmitted was the necessity of keeping a clear mindset of focusing on the procedure and their performance and not on the results, and that the best way to achieve that is through giving their best try on training sessions and through the constant practice and enhancement of psychological skills both on their table tennis related activities and on other activities such as preparation for school exams and exam days. This sort of advice suggests that modern-day youngsters are rushed to show results such as constant wins and good grades and that psychological skills and a clear mindset arising from basic sport psychology inceptions may help them to deal effectively with those challenges.

Apart from the methods used throughout the PST sessions alongside the athletes, I often kept track on my diary of some critical findings I would come up regarding youngsters' personality's characteristics. A trait I commonly detected in a couple of athletes was their tendency to compare their performance with the performance of their fellow athletes, asking me quite a few times whether they scored better or worse than the rest of athletes on a specific simulation training exercise. Another behavioural pattern commonly found among the youngsters when asked about their feelings was their proneness to answer with thought mechanisms rather than feelings, conceivably indicating a difficulty to pinpoint and express pure feelings. Personal need for compliance with my suggestions seems to have been another commonplace among youngsters. In the

assessment form, and most notably the question asking what the athletes did not like in the exercises concerning the content, most of the times the athletes would answer that they liked every part of the exercise. This answer highlights the shared need for compliance probably deriving from fear of rejection or even punishment in case of showing their disagreement with exercises' content and, as a result, with me.

Additionally, youngsters would equally display another feature; they would tend to contrast between minimisation and maximisation of anxiety admission and the example following is enlightening. Quite possibly during the same individual session or even the same repetition of an exercise, athletes would admit being highly anxious but at some point later on they would confess being not anxious at all or "just a bit". This opposition between minimal and maximal anxiety arguably demonstrates instead, the existence of anxiety than the non-existence. Keeping in my mind, common personality interpretations like the ones mentioned above would help me better define the psychological needs and adjust my type of intervention to youngsters' needs.

Besides personality characteristics commonly detected among youngsters, I also pinpointed personality characteristics unique to each athlete. John often tried to think of a scenario of his own during simulation training exercises to increase the pressure put on himself so as to boost his internal motivation. Increased pressure created either by the difficulty level of the exercise or by himself alongside my reinforcement presumably strengthened John's motivation and confidence during simulation training exercises. Another youngster, Jim, had a firm intention to train his ability to remain focused on his

performance and not on the external stimulus of someone watching him. Sometimes this stimulus would not even be physically present. Solely the idea that someone watches and somehow judges him for what he does or he does not would be enough for Jim to become anxious and even lose his temper during games. Despite the potency of the stimulus on his mentality, Jim was strong-willed to find the tools he needed, since he mentioned many times both verbally and in written form his desire to cope with anxiety. Those two examples signify two critical factors leading to athletes profiting the most out of the PST; strong internal motivation on their part and willingness to show empathy and support on the part of the sport psychologist.

Another major issue we had to work on, especially with a particular athlete was the management of the feeling of guiltiness. John would repeatedly feel very guilty following a bad loss or a poor performance on a match-day. Another athlete, Bill, would be more often on the other far end; he would frequently be very confident about his abilities on table tennis regardless of results on match-days. These findings suggest that it is crucial to discover and work on coping mechanisms for various emotions both as an athlete and as a sport psychologist. The commonplace in dealing with all sorts of emotions is to be able, as a sport psychologist, to transmit to the athlete a mindset with the core value of trying to interpret a fact emphasising on reality and not on emotion while always being supportive towards him no matter the game result or the objectivity of his perception.

At the same time, other significant findings concern the enhancement of two abilities of the youngsters gained through our PST sessions; first, the ability to recognise the psychological parameters of their performance and, second, the ability to take initiatives in PST. These results suggest that the upcoming findings stemming from individual cases answer to the primary purpose of our study; to delve into the ways young athletes practically use the skills related to the mental part of their game-play.

In the next few paragraphs, I will present in chronological order the findings from the individual sessions relating to young athletes' behavioural interpretations. Starting with the initial need assessment sessions, Jim had pinpointed his need to manage better the anger and anxiety that deprived him of performing consistently well, while he would not stop celebrating his winning points, an essential aspect of the psychological domain of his game-play. Moving on to the goal-setting sessions, John's goal of personal reflection before games suggests that he pays much attention to the mental part of his game-play. Touching the imagery sessions, Jim stated by his own volition that using imagery before the next point during a game would help him a lot. On his part, John wrote an admittedly thorough scenario with many details enclosed. Besides, Bill had the idea of videotaping himself practising an imagery scenario of his own and felt comfortable enough to share this video with me so as to get some feedback on it.

Moving on to the simulation training sessions, the similarities between Jenga game and table tennis game came quickly to the attention of Bill, who explained that both those games demand "concentration and sober mind." After a couple of simulation

training sessions completed, James took the initiative to use positive self-talk before each repetition of the card deck game. John, on his part, drew a parallel between table tennis and table soccer, marking the differences in his behaviour when being “in the defensive” and “in the offensive state of the game”. Furthermore, on the occasion of table soccer simulation with me impersonating an opponent provocative towards him, John managed to recognise his inner feeling of anger directed towards the opponent and progressively find ways to convert this anger from a feeling that destabilises him to motivation for him to win. These spontaneous interpretations and actions made by the youngsters illustrate their inner need and eagerness to find a way to adjust the psychological skills on their game-play.

After that, video analysis sessions resulted equally in youngsters demonstrating their willingness to shape their way of using psychological skills. First, Jim changed his initially negative opinion about video analysis, mostly due to the provoked feeling of disgrace, to positive through admitting watching videos of his games and accepting to share and analyse a video with me. John significantly improved his ability already from the second video analysis session to observe behaviours and especially body language details. As it can be seen, as the individual psychological skills sessions evolved, athletes would become gradually more aware of the mental aspects of their performance and act steadily towards enhancing their overall performance in table tennis through improved management of the mental part of table tennis.

The last topic coming from my diary connected to PST sessions relates to the appropriate ways sport psychology consultants should use in psychological skills transmission. First, it was proven to be helpful to have a predefined general schedule for each session. The most common one would be to initiate by commenting upon the last week's games, then to move on to a discussion about how does the use of psychological skills evolve, and then train the new psychological skill, with the last phase of each session being the completion of the session assessment form. Throughout our sessions, I ascertained that this form is a handy tool both for the youngsters and for me giving the chance to record thoughts and feelings right after the completion of the session leading to an equally important analysis and interpretation of the recorded staff. Another critical component of my methodology would be the transference of the psychological skills in a way that would motivate them to integrate those skills into their everyday routine. A compelling case is the transmission of relaxation techniques to the youngsters right before, on the course of or right after the training session to make them think about the usefulness of the techniques trained on their everyday performance.

As the individual simulation training sessions evolved, the idea of training jointly the athlete's ability to manage specific anxiety and loss of concentration provoking stimulus and his ability to use a previously trained psychological skill, goal-setting could be fulfilled. Goal-setting on the final score of repetition on a one-on-one table soccer exercise coming along with the permission given to take the initiative to use any other performance-enhancing psychological skill in the game is an interesting example of motivating an athlete to practically apply a combination of psychological skills while he

remains autonomous. This finding suggests that simulation training exercises are a strong motivational factor for the application of psychological skills in different domains of life.

A significant theoretical idea to follow for the definition of stimuli to train with methods of the simulation was the constant search for further information specifying the space, time, words and movements surrounding the stimulus. The print form regarding distracting factors on table tennis that each athlete had initially completed would not describe every aspect of each stimulus. Reexamining and asking the athlete for more details or even previously unfound distracting stimuli during the individual sessions seems to be the most efficient way to define the needs of the athlete better. Another compelling case is the modification of an exercise to the distinctive features of table tennis, including the application not only of the classic edition of Jenga game using the tower but also of the Jenga Pass Challenge, which had a handle looking a lot alike table tennis paddle. Besides, I set a specific time limit of 8 seconds for each simulation game move, and I added a short imagery scenario describing a game situation according to the preferences of each athlete. I would read the imagery scenario right before the beginning of an exercise asking from the athlete to keep his eyes closed in order to better adapt to a table tennis game situation.

While the discussion in the preceding paragraphs referred to individual sessions, in this paragraph, I will present the results coming from a simulation training session with the simultaneous participation of two youngsters. First, the session was a triggering event, and youngsters were able to exchange thoughts on the session's context as well as



on their reactions and behaviours. In this manner, they feel reassured by the fellow athlete's admission of similar thoughts or behaviours, and they may even think about a specific anxiety-provoking situation in another perspective, their teammate's perspective. Second, from the sport psychologist's point of view, I could figure out the similar and different effect a particular stimulus or situation could simultaneously have on two different athletes. Finally, my unprecedented alternation between different types of stimuli during the same repetition, moving from imitating a coach and a fan to the final imitation of a parent, apparently made the exercise more exciting and more realistic, given the fact that all these types of stimuli coexist during a real-time game.

Moving to some findings coming from another session, I will attend to different domains related to the sessions. In addition to the findings pertaining to stimuli handling, it is quite relaxing and helpful for the athlete to try to taunt and make fun on a temporary rather than a permanent basis, with the necessary respect shown towards the athlete and the person the stimulus involves. During table soccer exercises, it proved to be useful me taking a timeout. At that time, I would discuss and explicate with the athlete behaviours and feelings experienced till that point in the exercise as well as the impact of the timeout I called and the ways the athlete could make use to overcome any obstacle on the psychological spectrum. As far as the assessment form is concerned, I assumed that it is really helpful for athletes to read their answers after completing the form with the aim to discuss on them. This recitation procedure benefited both the athletes and me, enabling us to self-reflect once more on the answers.

Further modifications applied from session to session will be exposed in the current paragraph. Continuous reinforcement of the stimulus presented is a central concept of the simulation training sessions. In order to attain the main goal on every session of making the athlete leave with a positive general impression, I had to let the athlete win at the final repetition of the exercise or give him positive feedback. In one occasion, an athlete understood and mentioned my underperformance in order to let him win. I shared with him the real reason for doing so, and he arguably accepted it. Hence, the findings pinpointed on the above paragraphs presumably provide answers to the crucial question demanded to be answered in this research regarding the ways a sport psychology consultant can use in order to transmit engaging and purposeful psychological skills to young athletes.

## Athletes' interviews' topics

Three main topics emerged from the interviews accomplished after the completion of the intervention with the five young athletes participating in the PST sessions. In the next few paragraphs, I will present those topics along with the sub-topics included in each topic. For each topic and sub-topic, long or short extracts will be displayed in order to illustrate athletes' perceptions regarding my intervention.

The first topic arising from the interviews assessing the intervention pertains to the understanding and improvement of psychological skills' use in the context of table tennis. Regarding the goal-setting skill, all five athletes set competition-related goals both individually and as a team. Bill, clarifying his goals a lot, set the short-term goal of "training hard and correcting his mistakes" and the long-term goal of winning the championship with the team. Steve, on his part, beyond result-oriented goals, also set the mentally-oriented goal of reducing the anxiety he experiences during a game. A finding common to all the athletes is that they did not systematically use goal-setting after our first individual sessions regarding goal-setting.

Concerning the psychological skills trained apart from goal-setting, imagery attracted all five youngsters. Jim cited using imagery in a game against a theoretically inferior athlete, which was a special occasion causing him anxiety. In the imagery scenario he applied before that game he was describing his actions in several possible situations arising during the game; "If I am left behind in the score", "How can I regain focus after losing it", "If I miss a spin shot", "If I win and I want to sustain the same

pace." Another psychological skill trained, self-talk, was mentioned by four youngsters as one of their favourites. John referred to counting conversely before a point as his way of integrating self-talk in his game-play.

Progressive relaxation and routines were two other psychological skills that gathered the interest of two and three athletes, respectively. Bill had been making use of the breathing control along with many routines both in training and in-game days ("I use many routines. Many times my whole day is defined by some kind of routine"). Steve mentioned that after our sessions, he consolidated the use of a specific routine related to the towel during games; he would move towards the towel on each in-game timeout after missing the last played points. Another skill trained was video analysis of the psychological aspects of a game taped with a camera. Jim was the only youngster mentioning this skill as really important in his preparation for a game. He mentioned watching videos before games in order to pinpoint both psychological and tactical details, most of his opponents and secondly of himself ("I still do that. I watch past videos of specific opponents and try to learn them, to see which are their weak points in order to know how to move").

Three athletes commonly mentioned simulation training as a favoured skill. John mostly liked table football and hockey, since they motivated him to cope with intense feelings, while he did not like much the card deck exercises, given his general indifference towards card games ("It was really good. I could improve so many things through those games. I could see how I feel since I experienced the same feelings I have

experienced in a real-time table-tennis match"). Card deck exercises was a favourite of Steve, who correlated practising his ability in both the non-stimuli and stimuli integrating exercises with increasing his ability to remain focused to a specific task ("It helped me a lot to concentrate"). However, we should also consider that Steve mentioned not being able to adequately manage his reactions when faced with the stimulus of me imitating the opponent's coach ("Basically it got me down a little bit"). Moreover, when asked about the parts of the intervention that engaged mostly their attention, the two youngsters mentioned in this paragraph commonly declared their willingness to continue individual counselling sessions.

Moreover, when asked to describe sport psychology in a few words, youngsters mostly referred to the words "concentration", "self-confidence" and specific psychological skills such as "imagery", "self-talk" and "relaxation", suggesting that those two psychological parameters along with the psychological skills are central in youngsters' perception of table tennis. "Safety", "stability", "calmness", "tranquillity" were also mentioned, indirectly referring to anxiety management. "Self-control" and "pride" were words mentioned that potentially chime with the perception of self-confidence. Finally, a youngster cited the word "receptiveness", indicating his eagerness to accept other people's perceptions and his potential failures.

A second topic emerging from the youngsters' interviews correlates to the degree the psychological skills are applied generally in domains of their lives other than table tennis. Two athletes mentioned using psychological skills they learned during our

sessions on school activities and inside their family's environment. Regarding school activities, and in particular, before exams, Jim highlighted using a specific self-talk phrase; "Given that I know the subject why should I get anxious?" Referring to familial disputes, John mentioned using relaxation techniques aiming for controlling his feeling of anger ("In family disputes, I may use breath control to calm down and not get angry"). In general, youngsters presumably referred to potential situations of psychological skills' use and not situations where they have already used psychological skills. At the same time, an athlete mentioned no use of psychological skills at all in domains of his life other than table tennis.

The third and final topic stemming from athletes' interviews enters into the intervention's assessment with three sub-topics emerging; comparing the present intervention with potential previous interventions, assessing their behaviour and citing both the highlights and the deficiencies of our collaboration. Given that only one youngster had prior experience of sport psychology related sessions, the referral to alternative applied forms of sport psychology will be restricted to this particular youngster's appraisal. According to his statement, the present intervention covered already known sectors, including routines, mental preparation for serving the ball, relaxation techniques and games' video analysis. At the same time, he focused on his unprecedented experience of simulation training exercises ("We did not play table soccer which was experiential nor card deck games"), and the lack of focus on defining and analysing feelings in his prior experience ("I was not writing down how I was feeling"), which was a pivotal part of our simulation training sessions.

While the evaluation of differences between the present and previously applied sport psychology interventions must not be discounted, the next sub-topic refers to youngsters' points of view regarding the adequacies and the deficiencies of our coexistence. One athlete stated being satisfied by the intervention, while all the athletes were pleased with my ability to coherently convey information. Regarding intervention's insufficiencies, athletes declared specific psychological skills, simulation training exercises and general psychological issues as domains to be further developed. First, Jim asked for increased video analysis sessions "against more opponents", confirming his shifting from negation to enthusiasm towards this skill. Second, an athlete demanded more focus on relaxation techniques while admitting the satisfying application of the self-talk skill. On the contrary, two athletes expressed their desire for intensified self-talk training, both through separate sessions and through simulation training. Regarding simulation training sessions, another athlete designated more intense and realistic imitation on my side of a specific person or stimulus. Finally, the same athlete declared the need for intensive work on anxiety management.

While the discussion in the previous two paragraphs evolved around youngsters' assessment of the adequacies and inadequacies of the intervention, the central theme of the current paragraph is related to young athletes' perceptions concerning their behaviours both positive and negative. When answering to the relevant questions, Jim referred to his anxiety and ambiguity regarding the importance of psychological support services in table tennis; "I had not done anything like that before", "At the start, it felt quite strange."

Nevertheless, he admitted that, as the sessions evolved, he started feeling satisfaction from the intervention; "Some of those things help". Another athlete acknowledged his deficiency in managing his anger during the simulation training sessions. Regarding the expression of positive behaviours during the sessions, two athletes declared satisfaction from their reactions, while another athlete pinpointed his "increased self-confidence" and "improvement" as the sessions evolved.

### Coaches' interviews' topics

In addition to interviews with athletes, post-intervention interviews with Pefki table tennis team coaches constituted an equally significant source for the extraction of their perception of sport psychology and the evaluation of the quality of the psychological support services provided to the team. This third and final subcategory of the data source provided three distinctive topics which will be developed in the next few paragraphs along with their sub-topics.

The first sub-topic coming from the interviews with youngsters' coaches, all three of them having spent the most significant part of their years as table tennis athletes and coaches in Pefki team, pertains to the importance of psychological management, examining their intertemporal perceptions about sport psychology with relation to table tennis. Starting with coaches' goals, they referred to developing athletes into ambitious professionals to be reckoned with. In particular, coach D aspires to contribute to the production of athletes becoming even national champions, while coach T set an arguably



more holistic goal of transmitting knowledge to young athletes in a manner differing from the "terror regimen" his coach when being a young athlete used. Distinguishing themselves considerably from youngsters' answers to the similar question of goals set, the three coaches mentioned mostly long-term goals not directly connected with short-term results.

Referring to previous possible interventions from sport psychology experts, all three coaches declared having participated in such a collaboration in the past as athletes, with one of them being a fragmentary follower of the past intervention, while the other two coaches following the previous intervention in its total two-year duration. One of the coaches highlighted the importance of personal honesty and willingness to get involved in this type of intervention seriously. In contrast, coach D emphasised the "highly competitive level of the team" at that time, making a comparison assumably with the currently lower team levels of competitiveness.

Further searching coaches' perceptions of the mental part of table tennis identified the usage of different vital words describing sport psychology while referring to different aspects of sport psychology. "Concentration", "self-confidence", and "stability" were crucial words commonly mentioned by youngsters and coaches. In contrast "endurance", "stability", "patience", "correct decisions" and "anxiety management" were only mentioned by the coaches, indicating their particular interest in the mental aspects that will facilitate long-term success. With relevance to the potential future of a psychological support intervention, all three coaches were favourable to a possible continuation of our

collaboration. Coach D focused on the need for "consistency" on the part of the athletes and proposed that the aim of a future collaboration should be, first, the acquisition of mental self-management techniques by the "three theoretically most talented athletes" and, second, athletes' sufficient distinction and equal interest for individual and group responsibilities.

Moving on to the second topic extracted from the interviews with coaches, we will delve into the primary descriptors of youngsters' behaviour and the ways to manage them, as delineated by coaches. Two coaches subtracted anxiety management, concentration and emotional stability as most crucial from the spectrum of mental competencies demanded in table tennis. Coach D firmly believed that the young age of athletes constitutes a significant hindrance in the feasibility of improvement of all three domains and especially of emotional management ("Emotion demands excessive load of work. I believe it is complicated to manage it"). Coach T specially referred to game anxiety, differentiating into several causes provoking it; "the great desire to prove yourself", "the great desire to win", "the fear of what is going to happen in case of losing". Furthermore, all three coaches agreed that young athletes' anxiety levels are lower during training sessions.

Finally, coach A focused more on parents' intrusiveness during the competition as a negative factor generating an increased need for psychological management of the athletes and reframing of coaches' relations with parents. While recognising that the first need is manageable, provided the fact that the coach has developed a close relationship

with each athlete and knows which techniques are mostly compatible in order to help him relax, the second need is demanding and challenging to cope. As can be seen, team coaches have secluded specific psychological factors related to both the athletes and their environment and evolving mainly around competition.

Coaches have presumably defined means to handle those factors. Individualised, "case by case" as mentioned by coach D, management was reported by all three coaches as being valid. Coach D explicated adjusting his reactions ranging from severity to looseness correspondingly to each athlete's personality peculiarity. Given the three coaches' long-lasting coexistence with the young athletes, two coaches mentioned knowing well their athletes' personality, a factor which facilitates mutual understanding. An equally significant aspect of their means of management relates to higher focus on concentration management, as named by one coach.

At the same time, there is available evidence that additional focus has been set by two coaches on the amendment of athletes' training patterns to competition patterns, including the psychological spectrum, successfully or not. As coach A declared, he encourages the youngsters "to apply the same things they would during a game. Many times they do not achieve that, but they try." Moreover, coach A described his methods to accurately manage athletes' anxiety during games, including time-outs, advising parents for calmness, and mental tricks appealing to the athletes, varying from moving his core of focus from the opponent athlete or coach to him, to prompting him to change pace.

Having considered the two main topics from the interviews with the coaches, in the next paragraphs, the third topic referring to the benefits they derived from the intervention and the improvements they propose. Given the limited interaction with the coaches, when comparing with the interaction with the youngsters, the coaches' tendency to mention rather athletes' profit than their one is reasonable. Even though the young age of athletes limited the maximum possible gain for them, youngsters were highly enhanced on competition-related performance features, according to two coaches. As coach A designated, reminding to the athletes the content of our meetings during games could enhance their management of feelings and psychological reactions, even though he pinpointed fluctuations in the level of mental preparation among the athletes.

Nevertheless, coaches detected advantages resulting from the intervention that affected them as well. Coach D presented the activation of athletes' thought procedure and the facilitation of communication with the youngsters as the main assets of the intervention. Correspondingly, two coaches highlighted the improved individualised mental management that this intervention enabled. Accordingly, coach T observed increased mental preparation of the youngsters for both training sessions and games, satisfying his desire for "automation" of many features pertaining to both training sessions and games.

However, we should also consider the deficits of the intervention as expressed by the coaches. First, two coaches disagreed with my intervention regarding anxiety management to a youngster. Explicitly, my suggestion for making a short break and

moving towards the towel between points was rejected as game rhythm disruptive. One coach accentuated the need to reinforce motivation for mental preparation for training. In contrast, two coaches recommended the establishment of individual psychological support provided to the athletes regularly, a proposal that suggests the positive impact of the intervention.

An equally significant aspect of the coaches' criticism relates to group activities. Expressly, all three coaches agreed for increased collaboration and group sessions not only with athletes but also with athletes' parents. Coach A pinpointed parental education regarding indicated behaviour during a competition, while he demanded higher willingness on their part for collaboration both with the team coaches and the sport psychologist. Accordingly, coach T suggested youngsters' group sessions regarding team conflicts and cohesion issues. All the coaches' observations chronicled in the last two paragraphs may be applied in a potential future collaboration.

## Discussion

Aiming to summarise the intervention's results, in the next few paragraphs, I will correlate them with this study's central purposes. Regarding the primary purpose of pinpointing the ways table tennis youngsters use psychological skills in training and games, the sessions elicited athletes' high need for compliance, contrast between minimisation and maximization of anxiety admission, internally generated scenarios acting as boosters for their motivation during simulation training exercises and dealing with the feeling of guiltiness as the most significant conclusions regarding youngsters' personality. Other findings coming from the personal diary indicated improvement in athletes' interpretations of their behaviours and actions along with their improved management of the mental part of table tennis through the PST sessions.

Furthermore, the frequently common between athletes and coaches citation of "concentration", "self-confidence" and of specific psychological techniques as keywords describing sport psychology showcases youngsters' and coaches' need and willingness to enhance their competence to mentally manage their anxiety, attention focusing and other emotions evoked on their table tennis-related activities. Moreover, the possible application of psychological skills in domains other than table tennis, namely school activities and family issues alongside the expressed satisfaction of youngsters regarding the intervention and the information conveyance reinforces their perception of the intervention as being helpful towards the management of their psychological requirements. Last but not least, young athletes' mostly positive personal behavioural

criticism partially counters to coaches' articulated deficit of "stability" in youngsters' general performance and need for "consistency" in future collaboration.

About the secondary purpose of this study, the observation of training sessions and team games along with conversations with team coaches contribute to the better definition of youngsters' psychological needs and better collaboration with coaches. Similarly, the intervention's deficiencies on training specific psychological skills following individual requirements, varying from self-talk, relaxation and video analysis to more intensity in stimuli's presentation during simulation training and coaches' expressed need for increased youngsters' and parents' group meetings pinpoint the highly effective youngsters' and coaches' psychological requirements during our collaboration.

The contribution of observing and even participating in team activities while discussing with parents led to better need assessment but also bonding and proximity with team athletes and coaches, enhancing the third purpose of this study, the discovery of intuitive and amusing ways to transmit useful psychological skills to youngsters. The regular psychotherapeutic support provided to a team athlete, the unscheduled individual sessions with youngsters and the group presentations with the participation of athletes leading to a better knowledge of sport psychology and higher cohesion levels between athletes covered the need for a simultaneously person-oriented and holistic approach in psychological support services provided to a team. The pre-intervention implication of psychological skills to non-athletes and athletes, overcoming practical and technical issues during PST sessions reformed and improved the methods to be used.

Essential findings about ways to better transmit psychological skills as sport psychologists included the predefined schedule of each session, useful both for me and for the youngsters, the motivation to use psychological skills in everyday life aspects, the need for further information extracted from the athletes regarding their needs, the usefulness of PST with two athletes simultaneously and of time-out time during simulation training. The comparison with previous experiences from sport psychology interventions by one youngster accented simulation training and feelings' analysis as first-time innovations and contributions of sport psychology services. Meanwhile, coaches' ways of individualised management and during-game management of parents and athletes alongside the benefits and the deficits of the intervention indicated appropriate ways to enhance psychological skills' transmission.

The direct benefits of psychological preparation are related to “those cognitive, emotional, and behavioural strategies athletes and teams use to arrive at an ideal performance state or condition that is related to optimal psychological states and peak performance either for competition or practice” (Gould, Flett, & Bean, 2009, p. 53). Sullivan and Nashman (1998) noted that sport psychologists, apart from psychological techniques' diffusers, also act as counsellors having to deal with various domains of the athletes' lives beyond their sport-related activities. The findings regarding the positive impact of the provision of holistic psychological support services provided to a team in the current research's intervention are consistent with previous research findings who reported that psychological methods used in the field of sports enhance performance not



directly but mainly through creating a positive experience for every athlete (Hall & Rodgers, 1989; Halliwell, 1989; Orlick, 1989). Considerations of this intervention as complete are generally compatible with the six-step youth sport consultation model assumed by Visek and his affiliates (2009) including practitioner considerations, initiating contact, doing sport psychology, wrapping up the season and consultation, assessing the continuing relationship, and termination and suggestion for continuation.

Seeking for similarities and differences between the personal diary's notes and the interviews, a few points can be highlighted. First, in both data sources, an enhancement of goal setting skill was detected, indicating greater realism and a higher need for self-confirmation on the part of the athletes. Second, as confirmed by youngsters both on sessions' assessment forms and on interviews, simulation training exercises were very similar to table tennis in-game situations of intensity, pressure, distractors' effect leading to higher youngsters' habituation to the distractors affecting their performance negatively. The simulation training exercises' positive impact is further reinforced by youngsters' expressed desire for similar sessions' continuation. Second, both young athletes and coaches were satisfied with the intervention's influence on their concentration levels. Having mentioned concentration as being a crucial factor of their in-game performance, consistent training of this competence during stimuli's demonstration on simulation training exercises with the additional contribution of psychological techniques trained on earlier sessions, along with personal evaluation through assessment forms and regular discussion boosted youngsters' mechanisms to cope with distraction of concentration.

Both my diary and the interviews proved the importance of the psychological technique of imagery. The allocation of three individual sessions per youngster on imagery training and the integration of imagery scenarios on simulation training sessions increased athletes' eagerness to make use of this technique since all five of them pinpointed imagery as a crucial technique on their interviews. It could also be said that simulation training sessions were perceived as highly interactive and therefore, engaging. This conclusion is verified by both youngsters' statements on individual sessions' assessment forms and by interviews, predominantly through a youngster's validation of simulation training's vivacity when comparing the current with his previous experience of sport psychology intervention.

It is essential, however, not to overemphasise the similarities detected among individual interviews and personal diary's notes and equally address the discrepancies between them. Firstly, intervention's insufficiencies chronicled on youngsters' and coaches' interviews were not reported on the personal diary. Interviews accented youngsters' enquiry for the increased practice of specific psychological techniques, simulation training exercises, along with coaches' enquiry for reinforced focus on group sessions with the participation of athletes, coaches or parents and for provision of stable individualised psychological support to youngsters. These queries were not noticed during the PST sessions and, hence, not marked on the personal diary.

Having considered the discrepancy in requests' record between personal diary notes and interviews, it is also reasonable to look at another imperfection of the

intervention pointed only on coaches' interviews. Explicitly, two coaches expressed their objection regarding an in-game practice commonly concluded by a youngster and me. In the final analysis, the combination of personal diaries and interviews proved to be affirmative enhancing self-criticism and assessment of the intervention by the participants, the people directly involved in the intervention. Thus, the combined application of those two methods boosted the current study's validity and credibility.

The comparison between personal diary and interviews and predominantly deficiencies' detection further affirms this study's limitations. A first limitation is the deficient allocation of youngsters' and coaches' psychological needs indicating the proper solution of constant need question addressed to athletes and coaches on the onset of the intervention and not just on the initial need assessment sessions. The insufficient coverage of young athletes' individualized needs and coaches' enquiries may be attributed to the intervention's time limitations. A possible intervention's continuation may favour enhanced responsiveness to these demands with the prerequisite of intensive discussion with youngsters and coaches in order to better detect their needs as they evolve during the intervention.

The findings of my study regarding comparison with different psychological support's interventions in sport settings are limited, given that only one youngster had previous experience of psychological support. Therefore, the assessment of the quality of the intervention addressed to athletes is confined. However, the precedent experience of psychological support on the part of all three Pefki table tennis team's coaches slightly

balances this deficiency, since they considered more spherically the importance and the best possible content of the services provided to a table tennis team by a sport psychologist, being able to establish this intervention's pros and cons. Finally, this study's finding cannot make claims about, for instance, the prevalence of views in the table tennis community as a whole. Conclusions regarding PST can solely be addressed to table tennis youngsters.

This research included a range of people with different but interdependent roles and responsibilities inside the table tennis team. This stratified purposeful sampling (Patton & Cochran, 2002) was established through the participation of both athletes and coaches, aiming to illustrate characteristics of particular subgroups of interest and to facilitate comparisons. Additionally, criterion sampling was succeeded through the in-depth investigation of a particular "type" of case, table tennis youngsters, and through the identification of all sources of variation interviewing all the athletes participating in the whole PST process.

Despite the significant limitations mentioned in the previous paragraphs, this study offers suggestive evidence for the implication of a similar PST intervention on an individual or team level to table tennis youngsters and other sports youngsters in general and school settings as well. Regarding this last suggestion, as stated by a couple of youngsters, psychological skills training and use can be proven useful in different age school classes aiming to address students', teachers' or professors' and parents'

psychological demands. Psychological skills' adaptation is a requirement in any potential sport or school environment's application.

While the aim of any study was not to be able to generalise statistically, it was necessary to minimise sample bias. This simply means that you need to recognise that the people to be selected for the intervention will not constitute the sum of the sport team or school population, as in our study the participants were not the total of Pefki team's youngsters and coaches. Furthermore, a similar methodological combination of personal diary's notes and interviews can be applied to other qualitative studies relevant or irrelevant to sports.

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