
Research article

PORTABLE DEVICES FOR DELIVERING IMAGERY AND MODELLING AMONG NETBALL PLAYERS: A QUALITATIVE STUDY

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Abstract

Journal of Sports Science and Physical Education 3(1): 50–64, 2015 - The main objective of this study was to investigate the effectiveness of portable devices (Mp4) in delivering imagery based on video modelling (expert model) among 30 female netball players, examining their personal experience. In the pre-test-intervention-post-test study design, 15 participants were randomly assigned into each of the Mp4 (initial and repeated instructions). Participants practised the imagery for seven days and were interviewed at post-test. In interviews most of the participants in the Mp4 conditions reported that their confidence for shooting increased. They considered the Mp4 to be a useful device to practice imagery at any time and place, but imagery training routines varied among participants and were influenced by their personal life and free time activities. The results of this study signified that the Mp4 has the potential to be a reliable tool to deliver imagery training based on video modelling among netballers.

Keywords: *Portable devices, imagery, netball players*

Introduction

The process of creating and recreating images in the mind is common practice to almost every human being. Regardless of the reasons for the activities, many people, either through training and preparation or spontaneously, will evoke a mental plan for their future action (Weinberg, 2008). According to some researchers, images can become the most powerful tools to enhance performance (Munzert, Lorey, & Zentgraf, 2009). Thus, imagery training has become a popular psychological preparation technique for numerous important physical activities, such as sport events (Guillot, Nadrowska, & Collet, 2008), artistic performances (Morris, Spittle, & Perry, 2004), and even in medical surgery (Sapien & Rogers, 2010). The imagery mechanism has been related to more dynamic processes, such as the memory system, information coding, and image transformation. For example, MacIntyre and Moran (2007a) noted that imagery is a cognitive performance enhancement technique. Researchers have suggested that the definition of the imagery process should be expanded by reviewing imagery practitioners' knowledge of, and control over, their mental imagery ability and understanding (Morris, Spittle, & Watt, 2005).

A number of terms have been widely used among psychologists to examine different methods of how people learn various skills and behaviours by watching the skill being performed. These include modelling, demonstration, and, observation learning (Kernodle, McKethan, & Rabinowitz, 2008; Weiss, McCullagh, Smith, & Berlant, 1998). Some researchers also included imagery as another term that can be interchangeably used with the definitions mentioned above due to similar neurophysiological representation during all these activities (Holmes & Calmels, 2008; Shearer, Holmes, & Mellalieu, 2009). In relation to sport psychology, researchers have provided substantial empirical data showing how modelling can be a medium to review performance information and regulate the level of self-efficacy and current sport performance (e.g., Feltz, Short, & Sullivan, 2008; Law & Hall, 2009). Modelling is also known as social comparison information and the main source of vicarious experiences. Bandura (1986) proposed that when an individual compares their own sport capabilities with the model they are viewing in the modelling intervention, the level of their self-efficacy is also determined by how similar the model is and whether they are capable of replicating the movement or not. Feltz, Short, and Singleton (2008) and Moritz, Feltz, Fahrback, and Mack (2000) explained that there is a close relationship between athletes' self-efficacy and their sport performance. According to Feltz et al., athletes who reported higher self-efficacy produced higher levels of sport performance. Moreover, researchers have recommended a self-modelling technique to enhance self-efficacy (Ste-Marie, Rymal, Vertes, & Martini, 2011). Most sport psychologists have, thus, highly recommended the use of self-modelling techniques to stimulate significant behaviour changes in sports

performers (Barker & Jones, 2006; Dowrick, 1983).

In anecdotal reports, researchers have stated that practitioners have regularly used a combination of imagery and modelling techniques with athletes in training, the main reason being to maximise their athletes potential (Bull & Shambrook, 2004; Porter, 2003). Most of the published studies related to the combined use of imagery and modelling in sports have been conducted with some intention of complementing one technique by inclusion of the other technique. For example, in some studies, an imagery intervention has been used as a core strategy and modelling has been used as a supplementary strategy (Glisky, Williams, & Kihlstrom, 1996), or a guided imagery has included modelling training component to clarify what the visual actions are (Fery & Morizot, 2000).

Imagery and modelling techniques have been showed in several studies to be used together. Ram, Riggs, Skaling, Landers, and McCullagh (2007) reported that lower level skill learners benefitted more when they used the combination of imagery and modelling in the acquisition and retention of some motor skills tasks compared to participants using modelling or imagery only. Some sport psychologists have designed and implemented the combination of imagery and modelling techniques in sports to maximise individual motor skills performance and not specifically to examine the effectiveness of this combination method (Atienza, Balaguer, & Garcia-Merita, 1998; Cumming, Clark, Ste-Marie, McCullagh, & Hall, 2005; Holmes & Calmels, 2008). Several studies that were conducted to examine the effects of imagery on performance based on the visuomotor behaviour rehearsal model or VMBR (Suinn, 1972) used the combination of imagery and modelling techniques.

The combination of imagery and modelling training has also been shown to

affect the sports skill learning and development process. The use of video modelling within imagery programs has been used to provide participants with essential information to perform sport skills. For example, in their study with skilled and novice soccer players, Blair, Hall, and Leyshon (1993), introduced a video session at the beginning of the imagery training program and found a significant skill enhancement, namely, faster response times for both groups at the post-test phase. Moreover, they recommended that these interventions can facilitate the acquisition of complex soccer skills (dribbling, passing, and shooting). Coelho, De Campos, Da Silva, Okazaki, and Keller (2007) found that the combination of imagery and video modelling training affected tennis players' closed skills performance. The combination technique has been recommended as effective in facilitating both closed and open skills during the learning process (Porter, 2003; Weinberg & Gould, 2007).

Imagery and modelling delivery processes normally involve two modes of human interaction. These are the trainer, who delivers the psychological skills (e.g., coaches, sport psychologists, practitioners) and the receiver who acquires the training (e.g., athletes, students, artists). Traditionally, a medium used to deliver psychological skills training to the receiver requires the trainer's participation. For example, guided imagery scripts can be planned and prepared by a sport psychologist (trainer) before an athlete (receiver) can read and employ the intervention (Chandler, Hall, Fishburne, & Shannon, 2005). Researchers have, however, reported the use of various devices to deliver psychological skills training, such as imagery and modelling, in many experiments (Shearer, Mellalieu, Shearer, & Davies, 2009; Weinberg, 2008).

Busy athletes with competing time demands have not always given priority to

video-based imagery training that involved substantial time commitment and effort to visiting stationary locations (Barker & Jones, 2006; Wright & Smith, 2009). The development of technology from VCR and DVD players attached to monitors, to laptop computers and recently to small hand-held devices such as mp4 players, tablet devices, and smart phones offers attractive alternatives. Several sport psychologists who have intensively used video equipment to facilitate individual target behaviour performance have proposed further exploration on the advantages in using highly mobile devices (Hars & Calmels, 2007; Ives, Straub, & Shelley, 2002; Nelson, Czech, Joyner, Munkasy, & Lachowetz, 2008). Moreover, the devices selected for use in sport settings must be portable enough to capture video footage of athletes' actions especially on the field.

Recently, sport psychologists have highlighted "meta-imagery processes" (MacIntyre & Moran, 2010) that have been evaluated using qualitative techniques. This assessment was conducted to understand imagery definitions not just on what imagery form is, but what happens cognitively after the individual processes the images according to their experience and information (MacIntyre & Moran, 2010; Wakefield & Smith, 2012). The insight gained from the meta-imagery data support the need for in-depth exploration of people's experience of imagery to help comprehend imagery according to differences in individual experience. In other words, the same imagery training procedures sometimes affect different athletes differently due to their unique cognitive ability.

The main aim of this study was to explore participants' subjective experience of using the MP4, using interviews. The data from this study were expected to provide information and guidance for the use of

portable devices to deliver imagery training. Information accumulated from qualitative analysis was expected to provide unique personal insights into the experience of using portable devices.

Method

Participants

Thirty female netball players aged between 19 to 39 years ($M = 24.9$, $SD = 5.60$) were recruited. These netball players had specific skills in shooting and experience playing in either of designated shooting position as a goal attack or goal shooter. The participants were active netball players competing in a local netball league ($M = 4.18$ years, $SD = 1.45$).

Study Design

The present study employed a qualitative study design. In the intervention phase, participants employed the imagery-training program, using either the MP4 for seven days. During this seven-day period, participants completed an imagery log each time they undertook an imagery session, ostensibly to provide feedback about the session. The log also acted as a manipulation check and a measure of imagery training adherence. A qualitative assessment was conducted, using a focused interview to explore participants' experience of the imagery training at the end of the seven day intervention.

Measures

Demographic form. A brief demographic form was designed to ascertain the participants' gender, age, height, psychological skill training experiences, and duration and frequency of participation in competitive netball.

Sport Imagery Ability Measure. The Sport Imagery Ability Measure (SIAM; Watt et al., 2004) is a 48-item self-report questionnaire that examines the experience of 60 seconds of

imagery of each of four sport-related scenes on 12 sub-scales, comprising: five dimensions, namely vividness, control, duration, ease, and speed of generation of images; six sense modalities, namely visual, auditory, kinaesthetic, tactile, gustatory, and olfactory; and the experience of emotion associated with imagery. The SIAM has internal consistency reliability ranging from good to very good with the alpha coefficient values from .66 (speed subscale) to .87 (gustatory subscale) and moderate to very good test-retest reliability correlations for specific subscales varying from .44 (speed) to .83 (gustatory).

Imagery log. An imagery log was used to monitor participants' adherence. Participants in the portable device conditions used the electronic notes application on the MP4 that automatically recorded the date and time of their imagery activities (electronic imagery log).

Post study interview. A semi-structured interview with open-ended questions was conducted after the intervention to gain as much information as possible from netballers' experiences when they employed the MP4 (Patton, 2002). Open-ended questions were asked first to examine the research questions. For example, participants were asked a question regarding their opinions about the content of the audio instruction and another question about the video modelling. When researcher thought that participants could provide more detailed information, researcher followed up the open-ended question by specific clarification probes, such as "what do you mean by...?", or elaboration probes, such as "please tell me more about...?" to stimulate participants' responses (Minichiello, Aroni, & Hays, 2008). In the interview, the participants were encouraged to ask for further explanation if they had difficulty in understanding specific terminology or

questions. On some occasions, the conversation began with an explanation of specific aspects of imagery. During the interview, if the participants were still having a problem understanding the explanation, researcher rephrased his words and simplified the explanation with an ordinary term and familiar example. Finally, all interviews were concluded by asking the participants to express their overall opinion about employing the MP4 as a portable device to deliver imagery training.

Equipment and Specifications

The audio instruction and video recording for the imagery training sessions were prepared using a JVC Everio Camcorder digital video camera (model GZ-HD300). The video footage was edited using the JVC Everio Media Browser software. Finally, the imagery audio instruction and video modelling were downloaded onto the portable device using iTunes software. An Apple iPod Touch was selected as the portable device (MP4) to deliver imagery training.

Interventions

In the intervention sessions the participants employed MP4 with audio and video functions. They were instructed to use the earphone for audio imagery instruction and to view the video modelling from the 5.1 cm x 7.6 cm MP4 screen. The imagery instructions were developed to direct the participants' attention to the correct techniques for performing successful shots in netball. The total duration of imagery and modelling interventions for all conditions were developed around seven minutes.

The video modelling employed an expert female netball player model (Victoria state player), shooting with the correct techniques recommended by experienced netball coaches as in the Netball Australia high performance goal shooting notes. The netball shooting video model displayed 100%

success. The selection of model shooting examples and audio instructions were made with advice from two experienced netball coaches (Netball Australia, advance coaching accreditation). The imagery instructions and video modelling were downloaded onto the MP4. Participants were advised to use the portable devices, depending on their assigned research condition as imagery training at least once a day. There were two conditions. One MP4 condition involved imagery instructions at the start only (initial instructions), another MP4 condition involved instructions before each video modelling example and associated imagery rehearsal activity (repeated instructions).

Initial instructions condition. Participants in the Initial Instructions Condition (II) employed the imagery and modelling video with a set of audio instructions for the format of presentation of the imagery and modelling. The audio instruction was presented only at the beginning of the imagery program and involved an explanation of the sequence of video of a netball shooter performing a successful shot from nine specific angles and distances, each location being repeated five times.

Repeated instructions condition. Participants in the Repeated Instructions Condition (RI) employed the imagery and modelling video with short sequences of audio instructions for the format of presentation of the imagery and modelling that were presented before each set of five video trials from one of nine locations, as in the II Condition. The audio instructions involved an explanation of the sequence of video of a netball shooter performing a successful shot from nine specific angles and distances, each repeated five times. Participants were instructed that during a period of 5 seconds following each video-modelling example, the mobile device screen would be blank, and at this time they were to

engage in imagery specific to the shooting position and technique shown in the preceding video.

Procedure

Voluntary participation was invited from among the netball shooter players participating in a local netball competition. After approval from the Victoria University Human Research Ethics Committee (VUHREC) recruitment was conducted by inviting the netball players and access was gained through the team managers and coaches. After completing the consent process participants were asked to complete a demographic form.

The SIAM was administered to screen for at least moderate levels (average of 150 scores) of self-reported imagery ability on the visual, kinaesthetic, vividness, and controllability subscales that were considered to be the key aspects of imagery for this task. Only players who reported moderate and high ability (from 150 to 400) on the SIAM were invited to participate in this study; those who were not selected were thanked for their time. This imagery ability screening procedure was used to ensure that all those who participated had the capability to benefit from the imagery training (Watt et al., 2004). Before any further testing commenced, participants were randomly assigned to one of the two imagery conditions, with equal numbers of participants in the Initial Instructions Condition and the Repeated Instructions Condition.

Participants were provided with the portable devices and instructed to perform the imagery training at least once a day for the duration of seven days. Participants were also advised to record their imagery training activities (completed imagery and modelling session) using the electronic notes application on the portable devices. On Day 7, when the intervention finished a focused interview was conducted individually at the end of the study with all 30 participants in the II and RI

Conditions to acquire participants' feedback regarding their perceptions of the delivery of imagery using the portable devices and different instruction formats. Interview sessions were conducted in a quiet room at Victoria University and a digital audio recorder was used to record the conversation. Finally, all participants were debriefed and thanked for their participation in the study.

Analyses

Inductive content analysis was employed to examine the interviews, particularly regarding participants' unique experiences employing the Mp4 to practice imagery based on a modelling video. Based on this analysis procedure, raw data were organised according to the recurring words, examples, patterns, and themes emerging from the interview text; this procedure is also known as open coding (Patton, 2002). This content analysis was the only part of grounded theory procedure applied because the main purpose of this study was only to explore participants' experience and not to develop new theory regarding the technique to deliver imagery training (Patton, 2002). First, the audio-recorded interviews were transcribed verbatim. Researcher read and reread the text while listening to the audio-recorded interviews to check the content accuracy. Applying members' checking procedure to enhance the reliability of the text, participants were provided with the interview text and requested to verify the precision of the content.

Results

Interview Analysis

Overall five major themes emerged from the inductive content analysis: (1) general experiences related to using the portable device; (2) participants' opinion on audio and video content; (3) preferred location to employ the device; (4) device practicality; and (5) the relation of imagery training to performance. Thus, the interview analysis

results based on participants' opinions and experiences are presented according to the five themes.

General experiences. An overview of participants' experience of the 7-day intervention was explored in this section. Overall, participants who used the portable device to practice imagery (II and RI Conditions) provided encouraging and positive feedback. Predominantly, 15 participants stated that they had a good experience because the device was interesting, accessible, and assisted them to practice imagery particularly through the audio and visual information. For example, participant 25 from the II Condition stated, "I like it because you can see and you can hear the sound of the ball, and you can see the model's shooting, the skills and techniques". Several of the participants thought that the imagery training was good because it helped them to improve their shooting technique. One of the RI participants (28) said, "...because after watching it, I can feel, I can watch the correct technique for shooting, we can see the correct technique and practice it". Other participants also mentioned that the imagery training was accessible at any time and the portable device was easy to operate. Participant 7 from the II Condition stated, "It was very accessible, it was easy, you just need to press and play it, it is quite good". Nonetheless, two of participants (one each for the II and RI Condition) mentioned having some difficulties and suggested some alternatives method to practice imagery. For example, participant 22 from the RI Condition commented, "I got impatient with the blank screen, so while you were giving the instruction I was imagining it then before I saw it [video modelling], so I imagine, watching". Participant 29 from the II Condition said, "A down thing I think for me is having a bigger image; I think, like,

you probably would benefit more if watching on television or something instead, because you see a full image". In conclusion, although there were some minor technical issues regarding the device, all participants in the II and RI Conditions suggested that they had a valuable experience and were highly motivated to practice imagery during seven days of employing the portable device.

Audio and video content. There are three common issues in this section encompassing: participants' general opinion regarding the content of the imagery training; participants' feedback on the audio instruction; and the specific aspects of the video footage. Almost all participants recommended that the imagery training content was useful. They gave several reasons, including that it helped them in training, there were straightforward audio instructions, and participants could view the correct technique and the video showing the real netball range for shooting situations. Participant 6 in the RI Condition suggested that the imagery content was interesting and affected her memory. Another participant (II Condition) argued that imagery training alone was not enough; she said, "Content it's ok, yet for me ... I think imagery alone is not enough your need to train. ... but it helps a lot". In addition, four participants raised some concern specifically on the imagery duration given between each of 5 shots (video model). All four participants (two participants each in the II and RI Conditions) explained that they needed more time to imagine the action after viewing the video footage. In terms of audio instructions, all participants in the portable device conditions (30 participants) had similar opinions. According to most of the participants, the audio instructions were clear and easy to understand. Several of them mentioned that the audio instructions

were consistent, a useful positive reinforcement to them, and helped them to focus. In a different situation, a few participants in the RI Condition recommended that they were more interested in watching the complete cycle of shooting action, and the audio instruction should be separate from the video. There was only one piece of negative feedback referring to the audio instruction content. Participant 8 from the RI Condition stated “I think I have some problems with it [audio instructions] because I just can use it without a chance to ask someone”. Concerning the video footage, all participants provided positive responses. For example, they thought that the video footage was good because it was sharp, showing high quality shooting technique and the actions were presented from multiple angles. Nonetheless, a few participants recommended that the video could be more beneficial by using participants’ own video footage (self-modelling) and the video focusing on the “zoom-in” (close-up) shooting actions (e.g., hands, elbow, lower back). The information retrieved from the interview analysis suggested that the video was a beneficial tool for practising imagery and the audio instructions were sufficient to provide imagery training information. In relation to the two different instructions procedures (II and RI), participants in the initial instructions condition identified no problems, but one participant in the repeated instructions condition found the repetition boring.

Preferred location and time to employ the device. The intervention routine data was obtained using a direct question focusing on the location and the time participants selected to employ the MP4. Participants’ favourite location was at their own house (mostly in their bed room). Moreover, 24 of the participants who employed the portable

device preferred to do imagery training in a comfortable and non-distracting environment. According to some participants, home was a peaceful, relaxing location, and their concentration in practising imagery was higher at home. Conversely, six participants claimed they had no specific preferred location in which to utilise the device because they were busy. In commenting on being busy, a few participants found that by using the MP4 they could practice imagery training wherever they wanted to (e.g., bus, train, work place).

In relation to choice of time of day, from participants’ explanations, there was no specific time of day that was widely chosen to employ the device. The time range when participants decided to employ the device was from morning to late evening, and it varied between individuals. There were some common factors associated with participants’ preferred time. For example, main reasons why participants favoured any particular time were mostly related to their own leisure time, when they were in non-distracting situations, and when they experienced a relaxed state of mind. Overall, from statements provided by the participants in the II and RI Conditions, there was no specific time or location chosen to employ the portable device. The most interesting finding was the MP4 has several qualities to accommodate individual differences between the imagery training requirements or preferences of netball players.

Device practicality. The participants’ view on the use of the portable device to practice imagery training was explored using another question followed up by further probes. Participants predominantly suggested that use of MP4 was a good idea. According to some participants, by employing the MP4 they could imagine the shooting technique correctly and from this advantage they

improved their imagery capability. Several participants explained that they liked the audio video functions of the MP4 device. A number of participants thought that the most essential criteria satisfied by the device were mobility and accessibility. For example, one of them stated, "The device is easy to use and we can bring it anywhere... because it's portable once you think about using it, just take it out and use it at any time". There was a recommendation from participant 2, who was in the RI Condition, that use of the portable device would be more beneficial for a long-term training program. In summary, according to most of the participants, the MP4 was considered to be a practical tool to practice imagery and they had many valuable experiences from the imagery training.

The relationship of imagery to shooting performance. Various opinions emerged when participants were asked to describe their experiences concerning the imagery training with their shooting performance. Many of the participants believed that the imagery affected their shooting performance. One participant stated, "I think it will affect my shooting [imagery]... Usually before any game, I never imagine the situation. After this training, I have an opportunity to practice the imagery training". Another participant stated that from employing the imagery training their shooting performance keeps improving, "I saw in the video and try to do exactly like in the video ... It's really, really, really affected an improvement in my shooting performance". Several participants, believed their confidence level increased during the imagery training. For example, one participant explained "It gives you confidence mentally, and when you are playing most important things you have got to have this confidence mentally"

A small number of participants argued

that the imagery training should be prolonged to maximise its potential. All participants in the II and RI Conditions responded that practising the imagery training using the MP4 has affected their shooting performance. Around 95% of the participants agreed that their shooting performance increased after employing the MP4.

In conclusion, during interview participants provided relevant information regarding how the portable device will affect their self-efficacy and sport performance. All participants stated various experiences and opinions regarding the use of the MP4. These participants' experiences are unique. Thus, the information regarding each athlete's psychological state, current performance, personal opinion, and self-beliefs is essential prior to imagery training. Specifically, the imagery-training program must be tailored according to each individual's requirements to generate optimal performance improvement.

Discussion

The key purpose of this study was to explore participants' experiences during the imagery training. Almost all participants presented positive feedback regarding their experience employing the MP4. Nonetheless, each participant expressed unique thoughts and comments about their own style of using the MP4. A few participants also volunteered ideas about how iPods and similar devices might be used in performance enhancement in netball. Participants made various suggestions regarding the imagery content, preferred times to use the device, the practicality of the device, and the relationship between use of MP4s for delivering imagery training and subsequent performance.

Portable Device (MP4) and Stationary Device (DVD) to Deliver Imagery Training Program

In this study, the portable device was found to be a beneficial technique to deliver imagery training for netball players. From the interview analysis, many participants mentioned that one of the main reasons why they used the device regularly was because the MP4 is accessible at all times and in most locations. Participants who used the portable device were also divided into two imagery instruction conditions: initial instructions and repeated instructions. The two types of instruction were compared to examine whether regularly reminding participants of the procedure to use the MP4 for imagery training in the RI Condition would enhance imagery effectiveness compared to the initial instructions only in the II Condition.

The portable device, namely the MP4 player equipped with the audio and video functions, was a useful practical means to deliver imagery. This imagery training procedure is akin to what has been recommended by several sport psychologists (Holmes, Cumming, & Edwards, 2010; Weinberg & Gould, 2007). In addition, according to Ramirez (2010), the mastery experience provided by viewing (video modelling), facilitated the imagery training process among athletes. The MP4 used in the present study has accommodated this video modelling requirement (Wakefield & Smith, 2011). The portable device (MP4) should be an effective tool to deliver imagery because it has been shown to provide a high level of accessibility and mobility. Moreover, in this study the MP4 being a portable device appears to stimulate a high frequency of usage among athletes who employ it. Conversely, the study results also indicated that the use of the devices to deliver imagery did not lead to a statistical difference in the level of individual self-

efficacy, which contradicted previous research findings that asserted that modelling and imagery can elevate self-efficacy (Bell, Skinner, & Halbrook, 2011). This contradictory situation should be an interesting point for further investigation and a study design that examines a prolonged imagery-training program, using the portable device should be considered.

Experiences of Using the Portable Device for Imagery Training

Participants were interviewed about their experiences of using the MP4s to deliver audio and video aspects of imagery training related to netball shooting. Participants reported many positive experiences of imagery training through employing the portable device. All participants found the MP4 was effective and stated that it assisted them to employ imagery. Most of them also suggested that the device was useful for them to improve their netball shooting performance. These positive experiences created a positive belief, that is an essential characteristic that can facilitate the success of any psychological skill training program (Bandura, 2006; Law & Hall, 2009). Also, participants generally found that the device was easy to use. The portable device selected in this study, which was the MP4 is a popular technological innovation. Many of the participants explained that they had substantial experience of using MP4 and similar devices before. In relation to the participants' previous experiences with the MP4, researchers have recommended that acclimatisation is an essential factor in any training program (Lee, Chamberlin, & Hodges, 2001). Thus, familiarity with use of the MP4 could have been another key factor that facilitated imagery training.

Participants were also asked to describe the time and place they chose to employ the portable device. They made a range of comments in relation to these two

related factors. Interestingly, many participants agreed that the MP4 they were given created freedom of choice about when and where to do imagery training. Moreover, the portable device was easy to use and presented important information clearly and simply, which, participants said, motivated them to use it more often. The current findings about participants' subjective experiences of using the MP4 corresponds with the self-regulation model suggested by Zimmerman (1989). Researchers have proposed that individuals who have some opportunity to regulate their own training are highly motivated and perform with greater attention and effort than those who have little control over the selection of their training structure and content (Ste-Marie et al., 2011; Zimmerman, 1989).

Finally, other interesting issues that were explored during the interview session were the time and location chosen by athletes to employ this device. Most of the participants in this study employed the portable device in their free time and at a location that was conducive for them, especially in their house. Many sport psychologists have recommended guidelines regarding the most advantageous ways (time and location) of employing imagery. Imagery has been suggested to be used: specifically before, in between, and after competition or training; during competition season and off season; and at the location where athletes are normally training or compete (Morris et al., 2004; Wakefield & Smith, 2012). Although, a few participants expressed similar opinions, most of the participants were not aware of the importance of the location for the effectiveness of imagery. In conclusion, there is a need for simple and clear guidelines on the most beneficial time and location for athletes to employ imagery prior to any intervention program and for further research to clarify whether multiple

locations work effectively with portable devices.

Future Research

Sport performance is a key factor measured in this study and, as expected, this portable device was recognised as an effective technique for delivering imagery demonstrated by the significant improvement in the athletes' closed skill performance (netball shooting). Imagery training is also well known for the breadth of functions for which it can be used, such as to facilitate performance in different games and for athletes from various skill levels (McCarthy, 2009; Olsson, Jonsson, & Nyberg, 2008; Seif-Barghi, Kordi, Memari, Mansournia, & Jalali-Ghomi, 2012). Essentially, the capacity of the MP4 to enhance sport performance should be explored on various sport skills and on athletes from different skills levels. For example, the application of the MP4 should be tested among elite and competitive athletes, specifically with the athlete who possesses a higher skill level. This type of research should provide more information regarding the versatility of the method.

In the current study, an expert performer was used to model imagery training. Results from previous studies regarding the use of expert models compared to self-modelling video to enhance athletes' self-efficacy have shown that self-modelling is more effective than expert models (Hars & Calmels, 2007; Winfrey & Weeks, 1993). Thus, the function of portable devices, such as the MP4, to deliver imagery training should be developed in future research by examining the effect on athletes' self-efficacy of the use of their own video footage as the model.

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