

Research Paper

CONSTRUCTION OF THE QUESTIONNAIRE “EXERCISE IMAGERY PILOT QUESTIONNAIRE-GYM VERSION” FOR THE INVESTIGATION OF THE IMAGERY OF GYM MEMBERS DURING EXERCISE- A PILOT RESEARCH

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Introduction

Although the problem of physical inactivity consists a major concern for public health, an equally concerning problem is the reduced participation in exercise programs. As it was previously stated, although exercisers are experiencing better feelings after exercise, the widespread adherence problem could be linked with the feelings they are experiencing during the workouts (Welch, Hulley, Ferguson, & Beauchamp, 2007). On the other hand, it has been found that the use of distinct types of mental imagery (MI) while exercising produces higher enjoyment than just exercising (Stanley & Cumming, 2010) which is an interesting finding when considering that MI is a technique that derives from the sport environments and traditionally is used in the absence of physical movement. The fact that imagery during exercise has been related to positive feeling states indicates that this psychological strategy may be proved beneficial for the self-regulation of exercise behavior (Stanley & Cumming, 2010) and deserves further research in order to possibly be adopted as an additional instructing method in the exercise settings. The implication of every possible method in order to enhance exercise motives and consistent participation has become a necessity, especially when considering the high percentages of dropouts in sport centers and gyms (Morgan et al., 2016; Nuviala et al., 2012).

Abstract

The traditional approach of the use of mental imagery (MI) considers it to be held in other moments than physical practice, and the person only imaging the movement/situation without experiencing it physically. On the other hand, in the dance field, MI is often used during movement serving multiple functions. In the exercise field, the information regarding exercise imagery (EI) during movement derives mostly from researches and questionnaires that have mainly investigated its nature (types and functions) outside of practice, so the full potential of this psychological technique, when used during exercise, remains unknown. The aim of the present study was to construct a questionnaire in order to explore the nature of EI used by gym members during their workouts, to control it through a pilot research and to acquire a first piece of knowledge on the EI used by them, initiating the scientific dialogue about this underinvestigated subject. 15 gym members completed the questionnaire [named Exercise Imagery Pilot Questionnaire-Gym Version (EIPQ-GV)] and also provided feedback for its refinement. According to the results produced by EIPQ-GV, EI is used during exercise, it serves all known cognitive and motivational functions, it differs in some aspects from the use of EI outside of practice and its use makes exercise more pleasant and less monotonous, indicating that it is a promising technique that deserves further research.

Keywords: Exercise imagery, mental imagery, imagery assessment, imagery during exercise.

Apart from that, MI during exercise may serve multiple additional functions (Stanley & Cumming, 2010).

MI is a psychological skill (Nording & Cumming, 2006a), which was firstly made known from its use by elite athletes (Hall, Mark, Paivio & Hausenblas, 1998; Hall, Rodgers, & Barr, 1990) who mainly use it for the improvement of skill acquisition and the enhancement of their athletic performance (Cumming & Ramsey, 2009; Martin, Moritz, & Hall, 1999). In its “traditional” sense MI refers to the “mental simulation of an action without engaging in actual physical execution” (Guillot, Moschberger, & Collet, 2013) and two parameters that are often investigated are its types (what images do the persons imagine) and its functions (the reasons why they form these images) (Cumming & Ramsey, 2009).

Much of the research on MI relies on Paivio’s analytical framework (Paivio, 1985) and subsequent work by Hall et al. (1998) who established 5 types/functions of MI used in sport (Fournier, Deremaux, & Bernier, 2008) which are also used in exercise (Munroe-Chandler & Gammage, 2005). These are the following: (1) cognitive specific (CS) imagery consists of images of sport or exercise skills and correct technique; (2) cognitive general (CG) imagery, when used by athletes, involves images of strategies and routines related to a competitive event, and when used by exercisers, images of routines (e.g. aerobics or weight training routines), coordination with music, routine behavior, and the exercise context; (3) motivational specific (MS) imagery includes images of goals and the behaviors needed for the achievement of these goals, and in exercisers, additionally, it involves images about appearance, fitness, health, and improvements in physical performance; (4) motivational general arousal (MG-A) imagery involves images of somatic and emotional experiences and it refers to the management of emotions and activation levels, e.g. to increase motivation and excitement, to psych-up, to regulate stress, to relax, to ease tension, to calm-down (in athletes it is used in conjunction with competition while in exercisers in conjunction with exercise while it is also used to provide a distraction from exercise); and (5) motivational general mastery (MG-M) imagery involves images of effective coping and mastery of challenging situations, such as images of being in control, positive, confident, mentally tough, focused (e.g. dealing with adversity in athletes/ maintaining effort and focus throughout a workout even when tired in exercisers) (Cumming & Ramsey, 2009; Fournier et al., 2008; Giacobbi, Tuccitto, Buman, & Munroe-Chandler, 2010; Hall et al., 1998; Martin et al., 1999; Mellalieu, Hanton, & Thomas, 2009; Munroe-Chandler & Gammage, 2005; Munroe, Giacobbi, Hall, & Weinberg, 2000; Nordin & Cumming, 2008; Overby & Dunn, 2011).

In the exercise contexts, there are validated questionnaires that assess the use of EI in exercisers, –e.g. the “Exercise Imagery Questionnaire-Aerobic Version (EIQ-AV)” (Hausenblas, Hall, Munroe, & Rodgers, 1999), the “Exercise Imagery Inventory (EII)” (Giacobbi, Hausenblas, & Penfield, 2005) and the “EII-revised (EII-R)” (Giacobbi et al., 2010). However, EIQ-AV includes questions that correspond to only three functions of EI, labeled as “Technique” (CS), “Appearance” (MS) and “Energy” (MG-A), and since it doesn’t assess CG and MG-M imagery it does not correspond to all the functions that EI may serve (Munroe-Chandler & Gammage, 2005). EII on the other hand does not assess the use of CG imagery (Giacobbi, et al., 2010). In plus, these questionnaires are not meant to evaluate EI during the workouts, being in line with the traditional approach of MI that considers it to be held in other moments than in physical practice, so it remains unknown if these types/functions are also used during exercise. Additionally, the fact that the nature of imagery may differ in different contexts (*i.e.*, during or outside of exercise) (Munroe-Chandler & Gammage, 2005) and that the “where” (*i.e.*, the location, e.g. within the exercise

environment) and the “when” (*i.e.*, the situation/timeframe, *e.g.* during practice) influences the “why” (*i.e.*, the function, the reasons of imagery) (Cumming & Williams, 2013) implies that the information provided by the above-mentioned questionnaires cannot necessarily be used to draw conclusions and to inform practical recommendations for its use during training. Furthermore, it has been supported that the above-mentioned five types of MI do not constitute an exhaustive list and other types may be added in the future (Cumming & Ramsey, 2009) which is also evident from researches that have reported other types of MI while moving (Overby & Dunn, 2011). MI during movement is mentioned in only a few researches, predominately deriving from the field of dance studies (Hanrahan & Vergeer, 2001; Nordin & Cumming, 2007). Additional types of MI that have been referred include anatomical images (Heiland & Rovetti, 2013), images of characters and roles (*e.g.* to be an imaginary character) (Hanrahan & Vergeer, 2001; Nordin & Cumming, 2006c), and context images, *i.e.*, images depicting places and people, both real and imaginary (Cumming & Williams, 2013; Nordin & Cumming, 2006c). A broad category of images that is also used during movement (Nordin & Cumming, 2006c; Overby & Dunn, 2011) but are rarely, if ever, mentioned in sport (Nordin & Cumming, 2007) and are not assessed in previous EI questionnaires are metaphorical images. Metaphorical imagery relates to skills or tasks (Overby & Dunn, 2011) and includes images of objects that are not present and actions that cannot really be performed (Nordin & Cumming, 2006c). This type of imagery has been found to enhance understanding, quality of movement, performance, and enjoyment (Heiland & Rovetti, 2013; Torrents, Castañer, Dinušová, & Anguera, 2013). Although metaphorical imagery is proposed to be used also during exercise (Franklin, 2012) and it is already used in fitness books (*e.g.* Isacowitz, 2006), it remains unknown, by means of a research, if it is a type that exercisers use during their workouts, signaling that new research is needed on the topic.

Considering that previous researches are focused on the investigation of EI outside of practice it seems important to investigate the existing reality regarding the use of EI during exercise sessions. In light of all these, the aim of the present study was to a) construct a questionnaire in order to explore, describe and understand the use, the development, and the nature (type and functions) of the EI used by gym members during their workouts, b) control the questionnaire through a pilot research in order to confirm that it is understandable and clear to gym members and ascertain that its questions are suitable in generating information on the topic and, c) acquire, through this process, a first piece of knowledge on the EI used by exercisers during their workouts, initiating the scientific dialogue about the subject. It should be noted that this research did not have the purpose of providing a final version of a validated questionnaire with close-ended questions and specific items. The questionnaire that is presented in this research has both qualitative open-ended and close-ended questions since its aim is as a first step to offer explorative and qualitative data on the subject. As it has been previously outlined, a qualitative methodology permits extensive, descriptive data that are not attainable through quantitative methods (Driediger, Hall, & Callow, 2006). For this reason, a combination of open-ended and close-ended questions, in this phase, was deemed necessary.

Method

Instrument development

The study was approved by The Research Ethics Committee of Democritus University of Thrace. The development of the questionnaire was realized following the initial steps of the “instrument development sequence” described by Malliou et al. (2014). Firstly, the purpose, the objectives, and the research questions of the study were defined. Then the

literature was reviewed. Being in line with the remark of Nordin & Cumming (2006c) –who stated that they are enough similarities between exercise, sports, and dance–, previous sport, dance and EI researches and questionnaires informed the development of the pilot questionnaire. Some questions were inspired by previous questionnaires from all these fields and were accordingly modified when needed in order to correspond to the aims of the present research while also new questions were generated. After that, issues such as the questionnaire's layout and format and the ordering of the questions were decided. Two researchers of the research group (a professor at the university specialized in exercise and a PhD student specialized in fitness instructing), specialists in the area of exercise and fitness, confirmed the content validity of the questionnaire, *i.e.*, that it measured what it claimed to measure. After that, the pilot questionnaire was ready for distribution to a sample of gym exercisers in order to control that it was comprehensible, precise and appropriate for this kind of population and to receive feedback for its possible improvement.

Conduction of the Pilot Research

Participants

The pilot questionnaires were distributed to 15 volunteer exercisers (13 women and 2 men) deriving from two central gyms of Athens. The exercisers were between 27-55 years old (43 ± 7.91 years). They were exercising for $11 (\pm 12.81)$ years and at that time $3.60 (\pm 1.68)$ hours per week. They were practicing different workouts at the gyms, *i.e.*, Pilates ($n=13$), Body Sculpt/Total Body/Hips & Abs ($n=12$), Yoga ($n=6$), Zumba ($n=3$), Aerobic/Step ($n=2$), Weight Training ($n=1$), and Suspension Training ($n=1$).

Procedures of the pilot research

The exercisers were asked to complete the questionnaires, to take notes and to comment on the questionnaires, on their format (sequence of questions) and the wording of the questions (Cumming, Clark, Ste-Marie, Mccullagh, & Hall, 2005). The majority of the exercisers didn't propose changes for the questionnaires, declaring that they were understandable and clear. Four exercisers, though, made proposals for their improvement (*i.e.*, rephrasing of one question, elimination of questions that replicated the same answers, change in the ordering of some questions). The researchers, confirming that these observations were apt, made accordingly changes to the questionnaires. Also, according to the questions asked while the participants were completing the pilot questionnaires, the researchers decided to clarify even more the definition of EI by adding one phrase. After reviewing the answers by all participants, the researchers decided to eliminate some more questions and also to include two additional questions regarding the demographic characteristics of the participants. After all these changes occurred, the pilot questionnaires were given again to the same exercisers that proposed the changes who confirmed that now the questionnaires were clear and complete, without adding any new proposals.

Description and rationale of the Pilot Questionnaire

The questionnaire [named Exercise Imagery Pilot Questionnaire-Gym Version (EIPQ-GV)] (a name that reminds the questionnaire of Hausenblas et al. 1999) included in total 27 questions: 3 “fill- in- the- blank”, 5 open-ended and 19 close-ended questions. Although this questionnaire examines MI while exercising as opposed to previous questionnaires that assess EI outside of the exercise environments, the term “exercise imagery” was kept in order to preserve continuity with the pre-existing methodological tools.

Similar to previous EI surveys and questionnaires, there were questions about demographic data, *i.e.*, age and sex (Giacobbi et al., 2005) but, additionally, questions about education level and profession were included, following the proposal of Hausenblas et al. (1999). Also, there were questions about the exercise behavior and activities of the respondents (e.g. type of exercise programs that are attending) and hours per week of implication in exercise (Giacobbi, Hausenblas, Fallon, & Hall, 2003). All this first part was serving at defining the characteristics of the individual, since, according to the “revised applied model of deliberate imagery use”, imagery use is influenced by the “who” element (Cumming & Williams, 2013). After that, a definition of EI was provided that was synthesized by the researchers drawing also from the literature (Gregg & Clark, 2007; Nordin & Cumming, 2006a; Overby & Dunn, 2011). The definition was the following: “Using ‘imagery’ while exercising is the process during which the person who is exercising creates mental images that are related to the performed exercise. The images can be described /dictated by the trainer or they can be created by the exerciser himself/herself. They can be realistic, that is, actions/sensations that could actually apply to real life (e.g. imagine you are walking on sand) or they can be metaphorical and abstract, as images that could not possibly be real (e.g. imagine you are walking on water). Such images can involve one or more senses (vision, hearing, touch, taste, smell) (e.g. imagine you are on the beach performing abs and hearing the sound of the wave). In other words, ‘imagery’ is employing your imagination to create images that are related to the exercise, while performing the actual exercise (it is not thoughts irrelevant to the exercise, e.g. what to do next or what to cook for lunch)”. It should be noted that a major difference between the definition provided in the present research in comparison with previous questionnaire development researches (Giacobbi et al., 2005; Giacobbi et al., 2003; Hausenblas et al., 1999) was that apart from the fact that it defined EI as a process that takes place while exercising, it stated that the images used could be either real or metaphorical. The definition also provided a distinction between guided (*i.e.*, given from the fitness instructor as instruction) and personalized (*i.e.*, created by the exerciser) EI.

After reading the definition, the respondents should answer if they were familiar with the term “EI” before having read it in the questionnaire and if they ever used EI in the gym while exercising and they should proceed to complete the questionnaires only if they answered that they are using EI while working out.

The next section of questions was inspired by the 8 first questions of the Dance Imagery development Questionnaire by Nordin & Cumming (2006b) but the questions were modified and adjusted for exercisers, aiming to investigate the development of EI of exercisers and the role of the fitness instructors in this process. Taking into account that MI is a psychological skill “that can be taught and developed” (Nordin & Cumming, 2006b) and since no previous research on the development of EI has been found, it seemed useful to also include this set of questions, in order to gain a better understanding on the way it is embedded as an instructing method during the exercise sessions.

Then, there were 4 open-ended questions that aimed to investigate the type (what) and the functions (why) of EI (see also Hausenblas et al., 1999) both when provided as an instruction from the fitness instructors and when generated by the exercisers themselves. There was also a close-ended question asking if the respondent preferred to being given images by the trainer, to create images on his/her own or both, and an open-ended question that asked him/her to explain the reasons for his/her selection in the previous answer. According to previous literature, when investigating the nature of MI it is important to explore the “four Ws of imagery”, that is where, when, and why the persons use imagery and what they imagine

(Munroe et al., 2000). Since in the present research the “where” (in the gym) and the “when” (during the gym workout) were predetermined and included in the definition, these two “Ws” were excluded from the questions. The open-ended questions of EIPQ-GV would give the opportunity to gain a better understanding of the nature of both guided and personalized EI and the preferences of exercisers regarding its use.

In addition, there were questions on how often do the exercisers use EI and during which programs. Also, if they have ever used EI while being in pain during exercise in order to reduce pain of musculoskeletal origin and if this practice has helped them. According to previous research the percentage of exercisers that suffer from a chronic musculoskeletal condition is high (Daskalaki & Malliou, 2017) so this last set of questions deemed suitable to provide valuable, preliminary information on the use of EI while experiencing musculoskeletal pain. The pilot questionnaire can be provided, after request, by the authors.

Statistical analysis

For the analysis of the data, SPSS was used (analysis of frequencies, descriptive statistics). The answers of the respondents in the open-ended questions regarding the type/functions of EI were grouped into representative categories and labelled (Hausenblas et al., 1999). Then the number of exercisers who have used images of each category was calculated.

Results

86.6% (13 out of the 15) of the participants declared that are using EI during working out. 9 exercisers responded that they learned imagery technique at the gym and that the ability to use imagery was something that they learned from someone else (from the trainer). Two exercisers responded that they learned imagery technique elsewhere (*i.e.*, not in the gym) and that the ability to use imagery was something that it came naturally to them. The majority of the exercisers ($n=7$) indicated that the trainers who encourage them to use EI during training sessions are few and most of the times the exercisers indicated that trainers do so in an average frequency. All 13 of the exercisers responded that they follow the imagery instructions given by the trainers and that the images described by the latter are helpful while exercising.

Concerning the content of the EI given by the instructors, this included mainly images of other places ($n=8$) like the sea, the beach, nature, forests, peaceful/dreamy/quiet spaces (e.g. an empty white room), summer destinations, other countries, and islands. In many cases, metaphorical images were referred ($n=5$) that included: metaphors that could exist in reality (e.g. “imagine that you walk on cement/on ice/on sand”, “parallelize the rowing exercise with rowing in the sea”, “parallelize the cycling in the static bicycle with cycling on a real bicycle”, “imagine that you try to reach something placed high”, “as you stretch yourself –in the supine position- imagine that someone pulls your from your arms and legs”) and abstract metaphors (e.g. “imagine that while you move your hands and legs the air becomes denser”) or images of “characters/roles”, *i.e.*, that the exerciser acquires characteristics of someone else (e.g. “imagine that you try to win an opponent”, “imagine that you are a dancer executing a choreography”). Also, images of peace/relaxation/energy/fun were referred ($n=6$) (MG-A), images of technique ($n=1$) (CS), appearance ($n=1$) (MS), goals/result ($n=1$) (MS) and anatomical images ($n=1$).

Concerning the reasons why the participants used the images given by the fitness instructors, the following answers were given: in order to focus ($n=6$) (MG-M), enhancement of

technique (n=5) (CS), more interesting the lesson/pleasant the exercise (n=4) (MG-A), motivation to continue/stick to the exercise (n=3) (MG-M), enhancement of mood (n=3) (MG-A), peace/relaxation/energy (n=3) (MG-A), enhancement of endurance (n=2) (MS), to escape from reality (n=1) (MG-A), to be distracted from pain/tiredness/boredom (n=4) (MG-M), to parallelize the exercise with an every-day movement (n=1) (CG), to combine the movement with the rhythm of the music (CG).

The majority of exercisers (n=9) responded that they also create their own images while performing an exercise.

Concerning the content of EI generated by the exercisers this included: images of peace/relaxation/fun (n=4) (MG-A), metaphorical images (n=3) which were either realistic metaphors (n=1) or images of “characters/roles” (n=2) (e.g. I am a dancer, I am a part of a dance chorus). Also, images of other places (n=2), technique (n=2) (CS), appearance (n=2) (MS), focus (n=1) (MG-M), patience (n=1) (MG-M) and personalized “contextual” images, i.e., beloved persons (n=1).

Concerning the reasons why the participants were creating their own images these included: to distract attention from tiredness/boredom (n=3) (MG-M), more interesting the lesson/pleasant the exercise (n=2) (MG-A), enhancement of mood (n=2) (MG-A), motivation to continue/stick to the exercise (n=2) (MG-M), enhancement of technique (n=2) (CS), peace/relaxation/energy (n=2) (MG-A), to reach my goal (n=1) (MS).

The majority (n=8) of the exercisers declared that they prefer both being given images by the trainer and also to create their own images, while 5 of them reported that they preferred that the images are provided exclusively by the instructor. The basic themes that emerged concerning the given by the trainers EI were: that the instructors can motivate, stimulate, offer guidance and encourage the exercisers, they possess knowledge/expertise and also they can offer a variety of images previously unknown to the exercisers. On the other hand, the rationale given for using personalized EI is that the exercisers have the possibility, knowing better themselves, to form also images that will relax and please them, adapting them to their mood and psychological state.

Exercisers stated that they use EI during Pilates (n=11), Yoga (n=6), Body Sculpt/Total Body/Hips & Abs (n= 6), Zumba (n=1) and Weight Training (n=1). 1 of them declared that use EI “rarely”, 6 of them “few times”, 3 “several times” and 3 “many times”.

9 exercisers responded that they have used imagery during a musculoskeletal discomfort and all of them that this technique helped them.

Discussion

A first conclusion that can be drawn is that EIPQ-GV seems to function well as a questionnaire aimed to describe the phenomenon in question, since, through its questions, concrete and clear answers were produced. The fact that the majority of the exercisers declared that are using EI during the workouts is an interesting finding when considering that, during the development of EIQ-AV (Hausenblas et al., 1999) and in the research of Giacobbi et al. (2003), only 10 out of 144 exercisers in the first case and only the half (8 out of the 16) in the second responded that they used EI within the exercise environments and during exercise. It should be mentioned though that in these two researches there wasn't a question explicitly asking if the exercisers were using EI during the workouts, so maybe this is the reason for this difference. In any case, as it has been previously mentioned, MI during movement is proved to be used only in the dance settings while it is rarely mentioned in sports (Nordin & Cumming, 2007; Nordin & Cumming, 2006c; Overby & Dunn, 2011). The

present research adds new data on the topic, indicating that it is also used in the exercise environments during the workouts.

In contrast with the dance context where it has been found that the ability to use imagery was more natural than taught, in the present research the majority of the participants learned about imagery in the gym, but like dancers, the majority of them learned it from their instructors (Nordin & Cumming, 2006b). These findings confirm that EI during exercise is already used as an instructional technique from the part of the trainers in the exercise classes. On the other hand, most of the times the exercisers indicated that the instructors who use it are few. The fact though that the majority of the respondents stated that this technique is helpful proves the necessity of extending our knowledge regarding this technique, especially when considering that in the present pilot research it already became obvious that EI during exercise seems to serve multiple functions.

In more detail, regarding the types/functions of EI used during the workouts (both when provided by the instructors and when it was created by the exercisers) these had some similarities but also differences from the usual images found in previous EI researches. First of all, all “established” 5 types/functions of EI (Munroe-Chandler & Gammage, 2005) were mentioned, indicating that the images that are formed during the sessions are both cognitive and motivational in nature, similarly with the types/functions of images used outside of the gym environments (Giaccobi et al., 2010; Hausenblas et al., 1999). On the other hand, the analogy of the use of such images seems to differ between the two environments: previous EI research has documented that MS (*i.e.*, appearance) imagery is used most by exercisers, followed by CS (technique) and MG-A (energy) imagery (Hall, Rodgers, Wilson, & Norman, 2010; Hausenblas et al., 1999). In the present research, appearance imagery was not referred as much as CS EI and MG-A EI, signaling that EI in the gyms may differ from EI outside of it. This observation remains to be established from additional research. Apart from that, it should be mentioned that also the use of MG-M imagery was extensively reported and also CG imagery (in a lesser account though), types of EI that are not assessed by EIQ-AV and EII, proving the importance of re-examining EI during practice.

Another interesting finding was that the types of EI during the gym workouts presented some new characteristics such as the usual employment of images of other places (which in dance imagery are known as “context images” and help in inspiration) (Hanrahan & Vergeer, 2001) and of metaphorical images. Metaphorical imagery is used extensively in the dance contexts (Nordin & Cumming, 2007; Nordin & Cumming, 2006a; Nordin & Cumming, 2006b) but is not mentioned in previous EI researches. In dance, it has been found to enhance understanding, interest, performance, and movement quality (Nordin & Cumming, 2006b) and it is assumed that it helps in communication, focus/concentration, and relaxation (Cumming & Ramsey, 2009). Reviewing the answers of the exercisers regarding metaphorical imagery, it became obvious that this type of imagery serve similar functions in the exercise environments. Its use in the exercise settings indicates that it is a promising technique that requires further research, especially when considering that some metaphorical images generate more pleasant experiences than others (Heiland & Rovetti, 2013). Images of “characters/roles” were also referred (*i.e.*, that the exerciser acquires through his/her imagination the characteristics of someone else), a kind of MI that is used exclusively in the performing arts context (Nordin & Cumming, 2006a) where it serves other functions and for this reason, in the present research, this type of imagery was classified as metaphorical imagery. The broad use of this type of images proves that EI during the workouts holds unique characteristics that differentiate it from the use of EI outside of practice and from sport

imagery (which is oriented in competition) while it has some similarities with dance imagery (which is more creative).

It should be also mentioned that in the present research, EI during exercise functioned as a way to do more interesting the lesson/pleasant the exercise and as a distraction from pain/tiredness/boredom. The fact that EI during exercise helped transform exercise in a non-monotonous and pleasant experience is a very significant finding, when considering that lack of enjoyment and exercise-related boredom are linked with lower exercise adherence (Welch et al., 2007; Wolff, Bieleke, Martarelli, & Danckert, 2021). The finding also that the majority of the exercisers declared that prefer a combination of guided and personalized imagery is in line with previous literature where it has been reported that it is important to receive guided MI from the part of the instructor as an instructional cue (Nordin & Cumming, 2007; Nordin & Cumming, 2006a) but it is also essential that the images are personalized and meaningful to the individuals who may even find it easier and enjoyable to employ their own images (Cumming & Ramsey, 2009; Cumming & Williams, 2013). These results indicate that in exercise, as in dance and sport, “imagery training may be best when flexible, allowing for individual needs and preferences” (Hanrahan & Vergeer, 2001). The explanations provided by the exercisers for the use of personalized EI (i.e. selection of images that correspond to their own mood and psychological state in order to relax and be pleased) indicate that the choice to distinguish guided and personalized EI was right and that it is also important to further explore the types and functions of exercisers’ personalized imagery in order to deepen our knowledge on their personal tendencies, needs and preferences.

Conclusion

Resuming the indicative results of the present pilot research, EI is used during exercise, it serves all known cognitive and motivational functions, it differs in some aspects from the use of EI outside of practice and its use makes exercise more pleasant and less monotonous, indicating that it is a promising technique that deserves further research. It is noteworthy that despite the small sample, already emerged themes previously mentioned in the literature but not specifically explored in the gym environments. Also, new themes have emerged that justify the decision to explore the use of EI specifically during the workouts. These preliminary results reveal that EIPQ-GV carries the potential of generating new information regarding EI during exercise. It also gives the possibility to the respondents to fully respond about the types/functions of their imagery. In this way, and having confirmed that EIPQ-GV not only is understandable and clear but also contains questions that lead to the generation of useful data, it will be distributed to a bigger sample of gym members in order to further explore the nature of EI and based on their answers to later develop a measurement tool with specific items, focused on the types/functions of EI during exercise, that will be also tested for its psychometric properties using the appropriate methodology.

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Conflict of interest

No potential conflict of interest was reported by the authors.

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