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SPHERE

SPORT HEALING REHABILITATION

SCIENTIFIC PROTOCOL

Scientific Protocol

Scientific Committee
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Introduction

What is SPHERE?

SPHERE is a two-year ERASMUS+ funded EU project that aims to promote the use of physical activity as part of mental health and psychiatric rehabilitation programmes. Informed by contemporary research and examples of best practice, SPHERE will produce the following documents/guidance:

1. SPHERE guidelines to aid those institutions that implement sport, physical activity or exercise programmes in mental health rehabilitation;
2. Online map providing examples of best practices through case studies across Europe in the use of physical activity for mental health problems and psychiatric disorders;
3. Scientific protocol explaining the process of creating the SPHERE guidelines (this document);
4. Development and evaluation document detailing the evolution of the SPHERE guidelines;
5. Case studies of each of the pilot actions including an overview of the pilot actions and the findings following the evaluation;
6. Summary of evidence and recommendations for practice concerning physical activity and mental health problems in Europe.

The SPHERE project has seven partners from six European countries, and includes third sector sport institutions and Universities. The project team includes the following organisations:

- European Culture and Sport Organization (Italy; Lead organisation)
- European Platform for Sport Innovation (Belgium)
- Everton in the Community (UK)
- Finnish Sport Federation Tampere Region (Finland)
- Rijeka Sports Association for Persons with Disabilities (Croatia)
- Cardiff Metropolitan University (UK)
- Technical University of Munich (Germany)

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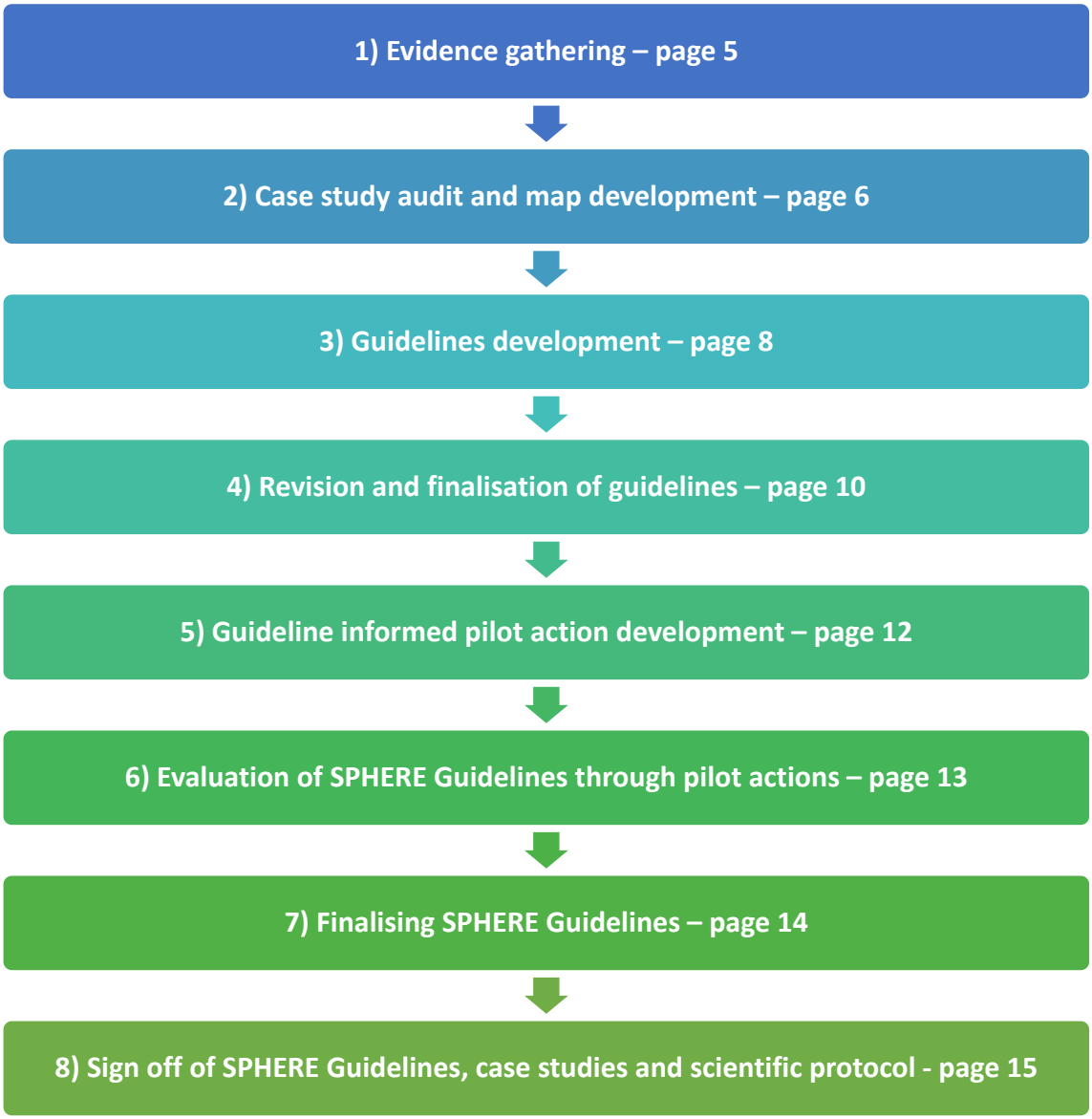
What is the aim of this document?

The aim of this document is to outline the SPHERE Scientific Protocol. The protocol is an explanation of the process undertaken to create rigorous and contemporary guidelines for the use of sport, exercise and physical activity for people with mental health problems (termed 'SPHERE Guidelines' throughout), the development of the pilot actions[1] and their evaluation, and the subsequent use of this collective information for dissemination and exploitation across Europe.

What is included in the document?

The Scientific Protocol consists of **8 phases**, which are detailed throughout this document.



[1] Pilot actions = pilot intervention conducted to support people with mental health problems to proactively enhance their life quality and to develop an integrated sense of self through sports and physical activity. The pilot actions took place in different settings by organizations in four partner countries, each with its own context and conditions.
Please note: The research team has worked to use mental health related language respectfully and thoughtfully throughout all documents, however due to the documents being translated into a number of languages certain mental health related terms may have been used interchangeably and therefore may not always be consistent with the most contemporary language in that region. Additionally, language taken from specific citations has been kept.

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Phase 1 Evidence gathering

Brief summary of the literature review of key academic articles concerning mental illness. For a more comprehensive review related to SPHERE, see the training guidelines document.

Prevalence

- Mental illness represents a growing and significant burden to individuals, communities and the health system (Czosnek et al., 2019).
- On average, approximately 30% of the population will experience a mental illness at some point in their life (Steel et al., 2014).
- In the European Union (EU), 165 million people are estimated to be diagnosed with a mental disorder each year (Trautmann et al., 2016).

Financial impact

- The global cost of mental illness was estimated at $2.5 trillion in 2010, with this figure expected to rise to $6 trillion by 2030 (Marquez & Saxena, 2016).
- In the EU, the cost of mental health conditions (excluding neurological conditions) has been estimated in €721 billion (Olesen et al., 2012).
- The annual cost of mental ill-health for employers in the EU is estimated at €272 billion due to absenteesim and decreased performance (Matrix Insight, 2012).

Life impact

- On average people with mental illness live 15 years less than people without a mental illness (Hjorthøj et al., 2017; Lawrence et al., 2013).
- In some mental health conditions, affected people can take between 9 and 20 years before seeking treatment (Johnson & Coles, 2013; Lenze & Wetherell, 2011).
- The main cause of decreased lifespan of people with mental health problems is due to morbidity e.g., cardiovascular, respiratory and infectious diseases, diabetes mellitus, and hypertension (Correl, et al., 2017).

Physical activity positive influence

- Physical activity has been found to have a positive effect upon those diagnosed with mental illness, comparable to antidepressants and psychotherapy (see Czosnek et al., 2019; Stubbs et al., 2018).
- Physical activity has been associated with improved sleep patterns (Lederman et al., 2019); reduced psychotic symptoms and improved coping (Firth et al., 2015); and, may lead to a reduction in the severity of depression (Rosenbaum et al., 2014) and improvements in psychosocial functioning (Llewellyn,Cousins, & Tyson, 2020).
- Studies have suggested that physical activity increases hippocampal brain-derived neurotrophic factor levels and stimulates neurogenesis, similarly to anti-depressant medications (Carek et al., 2011; Lopresti et al., 2013).
- Due to high rates of morbidity and mortality in people living with mental health problems, programmes aimed at improving physical health (e.g., improved cardiovascular health, weight loss) are crucial, while often neglected (Bettina, 2017; Osborn, 2001).
- Exercise represents a potentially cost-effective therapeutic tool for treating mental disorders (Verhaeghe et al., 2014).
- The importance of physical activity for those living with a mental illness has led to recommendations that all such individuals should have access to exercise and dietary interventions as part of routine mental healthcare (Rosenbaum et al., 2020).

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Phase 2 Case study audit and map development

Development of the audit tool

In Phase 2, the SPHERE partnership aimed to explore how and where sport, exercise and physical activity was being used for mental health across Europe. This phase aimed to:

- Identify what was happening through an audit, using a tool developed by the SPHERE project;
- Identify practice that represented 'best practice', through an assessment of the results from the audit.

To find the examples of "best practice", an audit tool was constructed based on the synthesis of scientific evidence of the psychophysiological effects of physical activity, exercise, and sport for mental health in patients, healthy individuals, and in laboratory research. This was distributed via an e-survey platform.

The audit tool was based on evidence from the scientific literature which resulted in a list of 16 items relating to 'best practice' which formed the structure for the audit tool, listed below:

1. The exercise/sport programme is adjunct to psychological or psychiatric treatment.
2. Attendance to the programme is voluntary.
3. The group is between 5 and 15 people.
4. The group is led by an instructor.
5. Training takes place at least 3 times per week.
6. Training happens before mid-day (in the morning).
7. The session lasts at least 30 min, 2 hours at most.
8. Sessions are practiced in open air (e.g. park, field, includes natural environments).
9. Sessions are practiced in a natural environment (e.g. lake, forest).
10. The intervention lasts at least 3 weeks (If the programme is continuous, participants stay for at least 3 weeks).
11. If the programme is time-limited, there is an option to continue.
12. The sessions tend towards a moderate intensity of exercise.
13. The exercise intensity is not always constant but has variations.
14. The sport/exercise intervention involves the learning of new skills.
15. There is a feedback session at the end.
16. The feedback is not solely focused in the patient's mental health.

These 16 items were used to form questions on practice, for the audit tool. Additional questions were also included to capture the details of the practical implementation of the activity (e.g., the context, programme objectives, type of activity, session timing, training location, group composition, and patient adherence to the programme).

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Audit tool

The audit tool was converted into an e-survey for ease of distribution across Europe. Based on the importance of the items (derived from the scientific literature) a marking system was devised and applied to the responses and a ranking of 'best practice' examples received via the e-survey was formed (explained in further detail in the next section).

Method used to collate case study examples

The e-survey link was sent to all partners, who then subsequently distributed it across their network within their country (the survey language was translated for each country). The table below presents the responses received.

Country	Organisation(s)	Number of potential participants contacted	Number of responses
Italy	ECOS	350	46
UK	CMU and EitC	36	14
Germany	TUM	83	13
Finland	HLU	50	14
Croatia	SSOI	71	21
Belgium	EPSI	2	2

Examples of practice received in the audit were each reviewed and assessed. The method for this included being allocated one point for each of the 16 items that had been applied, resulting in a maximum score of 16. Those institutions with the three highest scores within each country were contacted again to request if they would agree to be included as examples of best practice on the map. The institutions that agreed were n=14 in Italy, n=6 in the United Kingdom, n=3 in Germany, n=9 in Croatia and n=4 in Finland.

Development of the case study map

For the examples of good practice, where respondents who agreed to participate, a case description was developed describing the programme, its name, location, type of sport or physical activity, programme objectives, participants, session format and frequency and how it had been evaluated. Once the organisation who was responsible for the example agreed the case study description, it was added to the online map.

Phase 3 Guidelines development

Method - literature synthesis to inform guideline development

A further review of the academic literature was undertaken to enrich the material used previously for the development of the audit tool and to specifically inform the development of the specific practical guidelines. The review was guided by the overarching question: *"How can physical activity best facilitate a durable improvement for individuals with mental health problems?"*

Overall, the literature reviewed yielded the following topics:

- Previous guidelines of exercise for mental health patients
- Reviews of exercise interventions for mental health patients
- Subjective experience of patients in sport and exercise programmes
- Psychophysiological effects of exercise in patients, acute and chronic
- Psychophysiological effects of exercise in the healthy, acute and chronic
- Recommendations of exercise for promoting health in healthy population
- Translational research of exercise effects from animal models to human
- Neuroplasticity
- Club house model of mental health rehabilitation
- Group dynamics
- Goal setting
- Personal meaning and meaningful experience

Considering physical activity as a complex therapeutic intervention with multiple components and multiple mediators, we defined three dimension which were evident form the literature review, these included: physiological, psychological, and a social dimension. The evidence from the literature review and from the case study data from the survey was organized within those three dimensions.

These dimensions were then reviewed more closely for key physiological and psychological outcomes and the moderating factors that facilitate them. Social factors that best support exercise interventions were also identified. A precise description of these factors can be found in Appendix 1.

Method for the development of the guidelines

Following literature reviewing and synthesis, we aimed at producing a set of guidelines that were evidence informed, easy to follow, multidimensional and adaptable to the different contexts in which sport, exercise and physical activity in mental health rehabilitation is practiced.

The guidelines were designed to be helpful for professionals who were involved in leading sessions for a range of individuals, as the survey had revealed that most activity groups consist of participants with a range of diverse diagnoses, and not solely one condition. Whilst this can be a strength in terms of numbers of participants, interaction opportunities, time scheduling and general practicalities, it is important to highlight that this can also present a challenge for the leaders of the sessions, due to the range of ability and often diverse characteristics/diagnoses of individuals (heterogeneous conformation), and the effect of their condition on their capability. For this reason, the current guidelines place an emphasis on optimizing the overall psychological, social and physiological benefits produced by physical activity to support individuals. They are designed to facilitate a process of individual psychological change based on the dynamics of learning, feedback, social interaction and goal completion, all within a person-centred approach. We believe that this process taps into various

dimensions that are affected by different psychopathologies, such as, mood, affect regulation, motivation, cognitive processes, and socialization skills. In this regard, mental health professionals may find it useful to rely on dimensional diagnostic models to monitor patient progress throughout a physical activity intervention (please see appendix 4 for further information concerning the dimensional diagnostic). As such, the guidelines were designed as a set of recommendations to be used dependent on context and situation (e.g., client needs, equipment, facilities; Bardach, 2012; Bretschneider, 2004).

The 16 items from the audit tool were used to form the basis for the first draft of the guidelines, and statements were developed as practical recommendations of how to implement items in the design and delivery of activity sessions. These were reviewed for repetition, ease of understanding and breadth (to ensure all items were included) and resulted in a set of 17 guidelines (see appendix 2).

Phase 4 Revision and finalisation of guidelines

Process of the review and revision of guidelines by Scientific Committee and SPHERE pilot action partners in preparation for Pilot Actions

The first draft of the SPHERE guidelines were reviewed at the SPHERE project team in Belgium, October 2019. The meeting included all partners of the SPHERE project, members of the SPHERE scientific committee and also invited trainers from the partner institutions, who were responsible for delivering the pilot actions using the guidelines. During the meeting a number of stages took place to finalise the guidelines in preparation for Pilot Actions, these are explained below:

1. Presentation of the guidelines: the 17 guidelines were presented and explained to the SPHERE partners.
2. Review process: Individuals were offered opportunities to read and review the guidelines document and ask questions, some discussion on modification resulted.
3. Amendments to the guidelines: After reviewing the guidelines and in discussions with partners, some alterations were made which included editing of wording to be more specific in some points.
4. Finalisation of the first draft guidelines: The agreed 17 guidelines were then finalised and a SPHERE Guidelines and theoretical background document was created which:
    a. Highlights the prevalence of mental health problems and their symptoms in today's society.
    b. Highlights specific socio-medical procedures to manage patients with different diagnoses and backgrounds.
    c. Provides specific training methods to encourage patients in participating in sports activities.
    d. Provides practitioners and mental health professionals with practical guidance to design, deliver and evaluate sport and physical activity opportunities for people with mental health problems.
    e. Provides first draft 17 SPHERE Guidelines (see below), which were then used by the pilot action partners to devise their programmes for delivery to people with mental health problems during the Pilot Actions phase (Phase 5).

Below are the first draft SPHERE Guidelines which were used at each of the Pilot Sites and then evaluated following the Pilot Actions. As such the below guidelines are not the finalised SPHERE Guidelines, the final guidelines are available on page 16.

SPHERE Guidelines – Under development

1. The sport and physical activity programme encourages parallel medical, psychological and social enhancement.
2. Attendance to the programme is voluntary.
3. Where possible, sessions or training take place at least three times per week.
4. Sessions are designed for a duration of at least 30 min, and at most, 2 hours. This duration should be dependent on ability, fitness level, and availability.
5. Training sessions end at least 2 hours before sleep time.
6. The intervention or programme is designed for a minimal duration of 3 weeks, but longer duration is preferable. Shorter interventions require more sessions per week.
7. The activity is in groups, in an aim to develop social integration and social confidence, with an optimal group size between 5 and 15 people per 1 trainer.
8. When possible, training to take place before mid-day.
9. Where possible, sessions should incorporate activity in open air or natural environments.
10. Training activities are supervised by an instructor, who should provide motivation and support for the participant and adjust the programme accordingly to their needs on a weekly basis.
11. The training or programme involves the setting of individualized goals to gradually increase the participant's fitness, confidence and skills.
12. The intensity of physical exercise should aim towards a moderate level according to the participant's capability and fitness level.
13. Sessions should be designed in order to develop mastery of skills, facilitating cognitive stimulation in the form of skill learning (e.g. concentration, coordination, memorization, competence, use of equipment, game strategy, etc.).
14. The participant's goal progression and personal experience are supervised through regular feedback.
15. The programme is flexible regarding participant involvement and attendance in each session, depending on the condition of the participant at the time of the session.
16. The sport or physical activity takes place in a welcoming environment where people feel comfortable and a part of.
17. The programme encourages the participant to continue taking part in sport and physical activity once the programme has finished.

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Phase 5 Guideline informed Pilot Action development

Pilot Action sites use of the guidelines to develop initial programme for Pilot Delivery of the Pilot Actions

A total of 6 Pilot Actions were organised to take place in four partner countries: Italy (n=2), Finland (n=2), Croatia, and England. In order to prepare for the pilot actions and subsequent evaluation, a workshop and data collection protocol was provided. These three steps included:

1. Workshop

The workshop was organised to address with Pilot Action Partners the objectives of the Pilot Actions and the use of the guidelines in their design; objectives were as follows:

- Explanation for Partners to ensure an understanding of the overall aims of the SPHERE pilot actions evaluation;
- Confirm that all Partners have a clear understanding of all the SPHERE Guidelines and how to use them;
- An exercise to support Partners to plan their pilot actions in line with the SPHERE Guidelines and how to apply each of the 17 points;
- Prepare Partners to collect the evaluation data, and to record process and outcome measures from individuals participating in the Pilot Actions[2].

2. Data collection documents

In addition to the workshop, Partners were provided with documents detailing the requirements of a standardised (where possible) data collection protocol for each of the pilot actions. Specifically, guidance included an Excel spreadsheet which highlighted what aspects needed to be captured during the Pilot Actions (Table 1), and an accompanying document which provided information and sign posting for specific measures and approaches to data gathering.

Table 1: SPHERE Pilot Action - measures to be recorded during Pilot Actions

1. Demographic information				2. Participation, attendance, completion, and physical activity levels					3. Overall wellbeing measure		4. Psychological measure		5. Physical measure	
Gender %	Age mean	Age range	Reason for client referral	Total Participant numbers	% completion rates	Average attendance per session (number and/or %)	Pre physical activity	Post physical activity	Pre mean score	Post mean score	Pre mean score	Post mean score	Pre mean score	Post mean score

3. Review of the planned Pilot Actions

Following the workshop all Partners sent an overview of their finalised Pilot Actions for review by the Scientific Committee, and once agreed, the Pilot Action could commence.

[2] See appendix 3 for exercise sheets concerning Pilot Action Development

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Phase 6 Evaluation of the SPHERE Guidelines through Pilot Action leads

Following the application of the SPHERE Guidelines for the design of the Pilot Actions, and once Partners had delivered their pilot actions they were invited to take part in an evaluation of the guidelines and their use in a practical setting. The purposes of this was to review and amend (if necessary) the guidelines prior to final publication of the SPHERE Guidelines (see Phase 7). The evaluation of the first draft SPHERE Guidelines included a **6-stage** iterative process (see 'SPHERE Summary of Evidence and Recommendations for Practice' document for full details regarding the evaluation process - available here).

Overview of the Evaluation of SPHERE Guidelines:

1. **Development of the evaluation process**
   - Allocation of Scientific Committee roles and responsibilities
   - Organisation of meetings and channels for ongoing guideline discussions
   - Review of guidelines and new scientific literature to enhance guidelines

2. **Development of the data collation tool for Pilot Action sites**
   - Scientific Committee reviewed key literature and decided upon key concepts to be measured in order to assess the effectiveness of the SPHERE Guidelines
   - Measures included: demographic information, attendance, completion, physical activity levels, overall wellbeing; psychological measure; physical measure.

3. **Method undertaken for data collation and analysis**
   - Pilot Sites took part in a workshop to develop their Pilot Actions, and then selected specific measures which best suited their site[3].
   - Following the workshop all pilot sites provided their final Pilot Actions overview which included how they would use guidelines and record the actions.
   - Pilot Site were provided with support and guidance throughout Pilot Actions

4. **Development of Case Studies for each pilot action[4]**
   - Following the finalisation of the Pilot Actions and data collection, each Pilot Site was sent a Case Study Template to input their results from their Pilot Actions.
   - Case studies from each site were finalised.

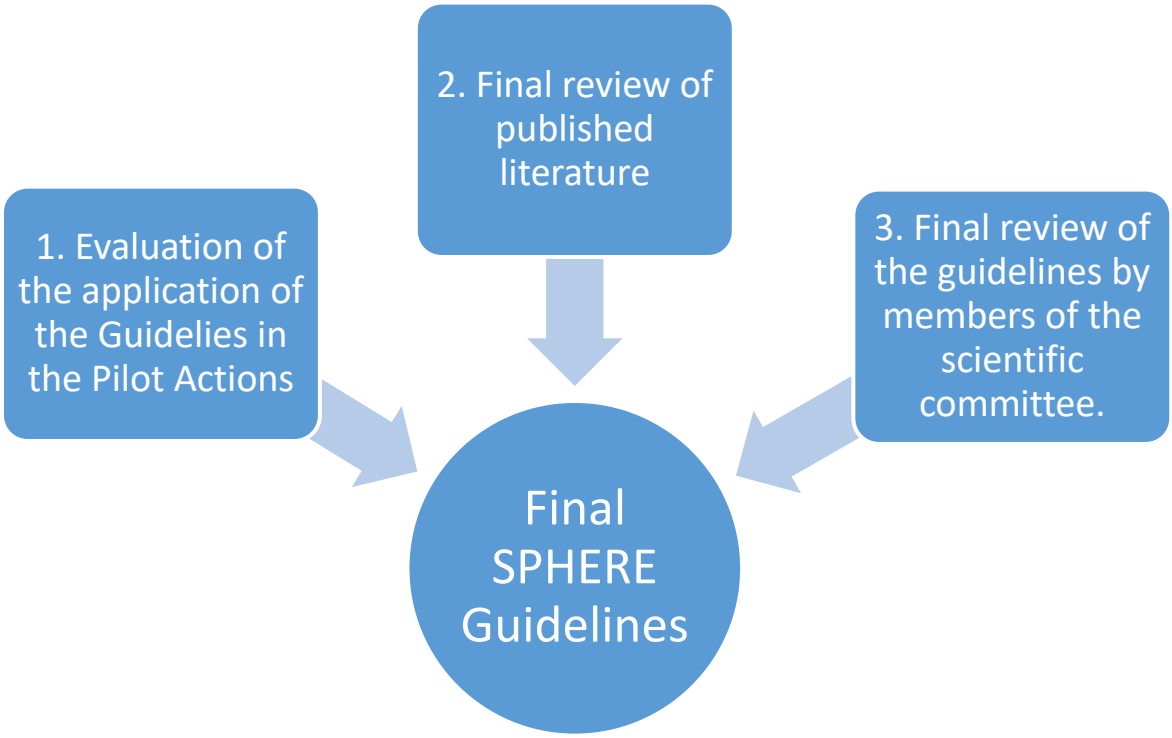
5. **Method undertaken for the e-survey and interview development and delivery**
   - To assess the effectiveness of the guidelines pilot project leads and practitioners complete an online e-survey, and a sub-sample took part in brief interviews

6. **Analysis of data and collation of evaluation report**
   - Analysis of interviews and open-ended e-survey questions took place.
   - Scientific Committee updated SPHERE Guidelines based on evaluation.
   - Edits were made in line with contemporary research articles.
   - SPHERE Guidelines changes were recorded throughout (see appendix 5)

[3] See Phase 5 of the Scientific Protocol 'Guideline informed Pilot Action development' for further details.
[4] Due to COVID 19 there was a delay to the Pilot Action implementation at some sites therefore the evaluation process took longer than anticipated.

Phase 7 Finalising the SPHERE Guidelines

The SPHERE Guidelines were reviewed and updated following the completion of three actions:



1. Evaluation of the pilot actions, which included:
    a. Development of pilot action case studies
    b. E-survey seeking views on how the SPHERE Guidelines had been implemented
    c. Interviews with the pilot site leads to seek further in-depth opinions and perspectives on the implementation of the guidelines

2. Final review of any additional 2019-20 published literature, since the original review of literature had taken place in year 1 (2019) of the project.

3. Review and reflection of the guidelines, following the previous two actions, by members of the scientific committee.

The refinement process and rationale for changes made to the SPHERE guidelines based upon the evaluation process are presented in Appendix 5, which includes two tables:

- Table 1 – Demonstrates alterations made to the SPHERE guidelines document
- Table 2 – Demonstrates the alterations made to individual aspects of the guidelines

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Phase 8 'Sign-off' of SPHERE Guidelines and Case Study examples following the completion of the Scientific Protocol

SPHERE Guidelines

The SPHERE Guidelines were designed to provide practical recommendations for a range of individuals from a variety of settings, including practitioners (e.g., sports coaches, fitness instructors) and health professionals (e.g., psychiatrists, physiotherapists, mental health nurses) in an aim to support them to design, implement and evaluate sport, exercise, and physical activity opportunities for people with mental health problems.

Following the process explained in this Scientific Protocol the final version of the SPHERE Guidelines are presented.

Below are a set of guidelines developed to support the use of physical activity as part of psychiatric rehabilitation programmes. The recommendations are based on moderating factors that optimize the effectiveness of physical activity programmes for people with mental health problems.

Before applying the guidelines, please consider your specific context, as certain aspects of the guidelines may not be appropriate for all circumstances. We advise to adopt as many of the guidelines as possible, when and where they are feasible for each unique setting.

#	SPHERE Guidelines
1	The programme encourages holistic clinical, psychological and social improvement. *For example: clinical–symptom management; psychological–improved wellbeing; social–improved social interaction and confidence. Where appropriate, prescription and follow up from a medical practitioner is recommended.*
2	The programme is designed to develop and improve skills, facilitating cognitive stimulation through the learning process. *For example: improved concentration, coordination, memorisation, use of equipment, and game strategy.*
3	Activities are supervised by an instructor/coach, who should provide technical guidance, motivation and support. *Instructors should adjust the programme accordingly to individual needs on a session by session basis.*
4	The programme should involve setting individualised goals for participants, to support gradual improvement and development. *For example: goals focussed on improving skills, attendance, participation, interaction with others, team working.*
5	Participants' learning, development progression and personal experience are reviewed through regular discussion and feedback. *For example: Weekly or daily plenary sessions and feedback alongside training.*
6	The programme promotes group activities with an optimal group size between 5 and 15 people per 1 instructor. *Instructors should adjust group size depending upon circumstance (e.g., group's ability, levels of concentration, fitness).*
7	Time should be designated for social interaction during and/or after sessions, while instructors should facilitate both peer to peer support and a sense of enjoyment during the programme. *When working in groups instructors should aim to develop participants' social integration and social confidence.*
8	The programme has a minimum duration of 3 weeks, and optimally a duration of 8 weeks or longer. *If 3 weeks (or more) is not possible, then a higher number of sessions per week is recommended.*
9	Sessions are designed to include between 30 minutes and up to 2 hours of activity. *The duration should be dependent on individual participant circumstance (e.g., ability, fitness level, concentration levels, and availability), and nature of the activity (e.g. intensity levels, rest periods during activity, complexity).*
10	Sessions ideally take place at least three times per week. *If 3 times a week is not possible then programmes should aim for 1 or 2 times a week, while encouraging independent activity.*
11	Activities take place optimally before mid-day.
12	Sessions ideally finish at least 2 hours before participants normally go to sleep.
13	The programme takes place in a safe and inclusive environment in which people feel physically, psychologically, and socially comfortable, and a part of.
14	The programme should ideally seek to incorporate activities in the open air and natural environments.
15	The intensity of activities should preferably aim towards a moderate level. *Participants' capability must always be considered and prioritised. Where moderate activity is not possible due to capability or capacity, low intensity is recommended. High intensity exercise should only be used with caution, where appropriate, under close supervision and by appropriately trained staff.*
16	Attendance to the programme is voluntary.
17	Programme attendance and involvement is flexible to accommodate for participants' individual current circumstance.
18	Prior to engaging in the programme, participants are made aware of what is involved, consent is sought, and ideally participants are engaged in their choice of activity. *For example, during a personal interview, informational sessions or pamphlets/leaflets.*
19	The programme promotes continued engagement in physical activity beyond the programme's duration. *Throughout the programme, instructors should provide participants with support, guidance and information concerning opportunities for continued physical activity engagement.*

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Additional SPHERE Guideline documents

- For a theoretical explanation of the SPHERE Guidelines please see SPHERE Guidelines and theoretical understanding
- For a detailed document identifying guidelines for practice in the promotion of physical activity, sport and exercise for people with mental health problems and the SPHERE Guidelines please see SPHERE Summary of Evidence and Recommendations for Practice
- For a single PDF document of the SPHERE Guidelines please see SPHERE Guidelines

SPHERE Case Study examples

Each of the case studies which were created from the four different pilot actions are detailed briefly below:

- **Football Therapy** – Everton in the Community – UK: The pilot project used the medium of football as a therapeutic tool to support individuals with a mental health condition. The pilot paired professional football coaching with pyscho-educational 'football therapy' workshops that utilised football as a metaphor for life to increase participants self- awareness and emotional literacy to help them develop self-care strategies to aid their on-going rehabilitation.

- **Happy Mind Sports** – Hämeen Liikunta ja Urheilu ry and Ylöjärvi Municipality – Finland: The pilot project will support participants social, physical and mental health by building individual levels of resilience and self-esteem to combat social isolation and aid their on-going rehabilitation.

- **Horses and Butterflies** - ASD Gruppo Italiana Paraequestre / CR FISE Umbria – Italy: Aim of the project is improve the body image in patients with Anorexia Nervosa using the horse and the sport of Equestrian Vaulting as a "mean" to help interpersonal relationships and communication, to manage anxiety states and to work on body image, Identity and self-consciousness. At the beginning and the end of the projects a series of specific test have been submitted, together with a psychological structured observation and the evaluation of specific motor abilities connected with the selected sport.

- **Athletic Therapy** – Rijeka Sports Association for Persons with Disabilities – Croatia: Athletic therapy' pilot project, is using the athletic disciplines as a therapeutic tool to positively address mental illness. The pilot supports participants by social, physical and mental health by individual approach. This makes the most of their individual abilities. This kind of sports approach influences the improvement of their abilities, social and sports skills, confidence, independence as well as it has the impact of performance in rehabilitation

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Partners

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Appendices

Appendix 1) Identified key physiological and psychological outcomes and moderating factors that facilitate them; and, social factors that support exercise interventions (Phase 3 - Guidelines development)

Physiological dimension
Key outcomes
• **Prefrontal hypo-perfusion** during practice, supporting a reduction of rumination. • **Regulation of neurotransmitter release**, especially serotonin, (regulate mood, sleep cycle and appetite), and dopamine (regulate motivation, attention and reward). • **Release of neural and vascular growth factors**, supporting neural plasticity • **EEG alpha power increase and theta decrease**, favouring a state of relaxed wakefulness or "calm mind" • **EEG peak frequency increase** under high intensity exercise, related to speed of information processing • **Neural plasticity** as the basis for learning and producing behavioural, attitudinal and emotional changes • **Enhanced connectivity**, reflecting brain re-organization and new learning • **Increase of hippocampal size** as a substrate of new learning • **Reduction of HPA-axis hyperactivity** and cross-stressor adaptation, leading to reduced sensitivity to stress
Moderators

• **Medical consultancy,** to assure the patient's fitness to get involved in physical activity, especially considering medication status
• **Minimal duration of 3 weeks** to stabilize effects, based on minimal time for exercise induced neuroplasticity in humans, minimal time for observable recovery in brain-injury patients, time for anti-depressive medication to induce neuroplasticity
• **Impact of intensity**, where:
  ○ Moderate intensity is effective and safe to promote the desired physiological modulations regarding mental health
  ○ Low intensity is an option for patients unable to perform under moderate intensity, but requires more cognitive, social and environmental stimulation to produce therapeutic effects, like hypo-frontality and dopamine release.
  ○ High intensity exercise can produce additional benefits (e.g. greater cognitive enhancement, coping with elevated stress) but carries greater risks (e.g. pain, injuries, lower motivation) and should be managed under close supervision.
  ○ Avoid overtraining, if exercise surpasses the current physical capacity, it becomes physiologically stressful. The elevated release of cortisol obstructs neural plasticity and learning. Exhaustion produces an increased ratio of serotonin over dopamine which produces a state of low motivation
• **Keeping the activity challenging** and stimulating, to favour the release of dopamine
• **Exposure a natural environment**, enhances physiological modulations, which is especially important in low intensity exercise
• **Frequent training**, to repeatedly experience the short term benefits, and gradually build long term benefits, with:
  ○ An optimal number of 3 sessions per week
  ○ Effective session duration of at least 30 min, and up to 2 hours
  ○ Up to 6 hours of weekly training

- **Morning sessions**, when possible, enhance the increment of EEG alpha and related increases in cognitive performance.
- **Evening exercise should preferably terminate 2 hours** before bedtime, or otherwise monitor sleep quality. This is not a constant but works as a safe span.

Psychological dimension
Key outcomes

• **Mood stabilization**, closely related to the physiological modulations, opens a window to experience daily life from a different perspective
  ○ Mood enhancement
  ○ Stress reduction
  ○ Interruption of rumination
• **Coping and distraction from symptoms**
• **Reduction in depressive scores** similar to anti-depressive medication
• **Improvement in learning and memory** following exercise. Supports the modification of maladaptive attitudes, beliefs and thought patterns.
• **Acute cognitive enhancement**
• **Novel personal experiences**, such as, enjoyment, learning, helping or being helped, facilitate psychological change
• **Development of personal meaning**, as a quality where persons create a sense of order, certainty and value of the self in relation to the world
  ○ Meaning helps to cope with difficult phases when positive affect is not present
  ○ Fluid compensation as the transfer of a sense of personal meaning developed within the realm of training towards other life domains
• **Self-efficacy** as the belief in one's own capacity and resilience, favours motivation

Moderators

• **Person centred approach**, where the patient eventually develops greater autonomy and takes active participation in the decisions taken for his/her training
• **Voluntary participation** as an appeal to self-determination and promote intrinsic motivation for training
• **Reminders and encouragement** in case of absenteeism and loss of motivation through the rehabilitative process
• **Exposure to nature**, can facilitate the derivation of personal meaning and helps to cope with personal loss
• **Morning exercise** enhances improvements in learning and memory.
• **Goal setting**, provides a clear aim for the participant to focus attention, organize behaviour, mobilize effort, and remain motivated
  ○ The goals are set in terms of performance in the activity, not in terms of clinical improvement
  ○ The participant sets the goal together with the trainer and medical staff to assure personal relevance within the scope of possibility
  ○ Goals are clearly observable and set in small, achievable and incremental steps towards a greater goal
  ○ Smaller goals are updated regularly (e.g. once per week)
• **Arrange conditions for effective performance**, to facilitate self-efficacy
• **Regular feedback**, as the main component to facilitate psychological change:
  ○ Monitor goal progression and make adjustments.
  ○ Allow participants to express their thoughts and emotions, to help to integrate the experience and elaborate personal meaning.
  ○ Feedback during training, mostly exercise-related

- Feedback plenary sessions, exercise and personal related. Can be weekly or daily according to the context. Implement when participants are not tired.
- Feedback can generate the emergence of clinical material to be referred to psychotherapy.
- Feedback when participants are exhausted is less effective.

- **Exercise as complement of counselling or psychotherapy**, can facilitate the emergence of thoughts and feelings to be further elaborated in therapy

Social dimension
Supportive factors

- **The trainer as the main figure for motivation**, where patients appreciate:
  - Competency in training
  - Trust-worthiness
  - Confidentiality
- **Socialization as a motivator for patients** to attend the sessions
  - Optimal group size between 5 to 15 participants, allows members to get to know each other, facilitates sharing of experience, the staff can keep track of each member
- **The trainer plays a more important role if the group is smaller than five**.
  - Needs to assure cohesion between members
  - Holds a closer interaction with each member
- **Continuation options after the programme ends**, as continued support is needed for rehabilitation after the patient is stable. Options to facilitate continuation:
  - Participation in uninterrupted programmes
  - Signing to a new cycle in the modular programmes
  - Facilitate contact with other sport and exercise groups

Appendix 2) SPHERE Guidelines (version 1) and the moderating and supportive factors

Guideline	Moderators and Supportive Factors
1. The sport and physical activity programme encourages parallel medical, psychological and social enhancement.	• Medical consultancy • Exercise as complement of counselling or psychotherapy • Feedback can generate the emergence of clinical material to be referred to psychotherapy. • Person centred approach • Socialization as a motivator
2. Attendance to the programme is voluntary.	• Person centred approach • Voluntary participation as an appeal to self-determination
3. Where possible, sessions or training take place at least three times per week.	• Frequent training • An optimal number of 3 sessions per week
4. Sessions are designed for a duration of at least 30 min, and at most, 2 hours. This duration should be dependent on ability, fitness level, and availability.	• Effective session duration of at least 30 min, and up to 2 hours • Up to 6 hours of weekly training • Avoid overtraining
5. Training sessions end at least 2 hours before sleep time.	• Evening exercise should preferably terminate 2 hours before bedtime
6. The intervention or programme is designed for a minimal duration of 3 weeks, but longer duration is preferable. Shorter interventions require more sessions per week.	• Minimal duration of 3 weeks to stabilize effects • Frequent training
7. The activity is in groups, in an aim to develop social integration and social confidence, with an optimal group size between 5 and 15 people per 1 trainer.	• Socialization as a motivator • Optimal group size between 5 to 15 participants • Impact of intensity, where: • Low intensity requires more social stimulation to be therapeutic
8. Ideally, training to take place before mid-day.	• Morning sessions enhance the increment of EEG alpha • Morning exercise enhances improvements in learning and memory.
9. Where possible, sessions should incorporate activity in open air or natural environments.	• Exposure a natural environment, enhances physiological modulations • Low intensity requires more environmental stimulation to be therapeutic • Exposure to nature, can facilitate the derivation of personal meaning and helps to cope with personal loss
10. Training activities are supervised by an instructor, who should provide motivation and support for the participant and adjust the programme accordingly to their needs on a weekly basis.	• The trainer as the main figure for motivation , where patients appreciate: • Competency in training • Trust-worthiness • Confidentiality • The trainer plays a more important role if the group is smaller than 5 • Needs to assure cohesion between members • Holds a closer interaction with each member

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	• High intensity exercise can produce additional benefits but carries greater risks and should be managed under close supervision.
11. The training or programme involves the setting of individualized goals to gradually increase the participant's fitness, confidence and skills.	• Goal setting, provides a clear aim for the participant • The goals are set in terms of performance in the activity, not in terms of clinical improvement • The participant sets the goal together with the trainer and medical staff to assure personal relevance within the scope of possibility • Goals are clearly observable and set in small, achievable and incremental steps towards a greater goal • Smaller goals are updated regularly (e.g. once per week)
12. The intensity of physical exercise should aim towards a moderate level according to the participant's capability and fitness level.	• Impact of intensity, where: • Moderate intensity is effective and safe to promote the desired physiological modulations regarding mental health • Avoid overtraining • Feedback when participants are exhausted is less effective.
13. Sessions should be designed in order to develop mastery of skills, facilitating cognitive stimulation in the form of skill learning (e.g. concentration, coordination, memorization, competence, use of equipment, game strategy, etc.).	• Arrange conditions for effective performance, to facilitate self-efficacy • Keeping the activity challenging and stimulating • Low intensity requires more cognitive stimulation to be therapeutic
14. The participant's goal progression and personal experience are supervised through regular feedback.	• Regular feedback, as the main component to facilitate psychological change • Monitor goal progression and make adjustments. • Allow participants to express their thoughts and emotions • Feedback during training, mostly exercise-related • Feedback plenary sessions, exercise and personal related.
15. The programme is flexible regarding participant involvement and attendance in each session, depending on the condition of the participant at the time of the session.	• Reminders and encouragement in case of absenteeism
16. The sport or physical activity takes place in a welcoming environment where people feel comfortable and a part of.	• Socialization as a motivator
17. The programme encourages the participant to continue taking part in sport and physical activity once the programme has finished.	• Continuation options after the programme ends • Participation in uninterrupted programmes • Signing to a new cycle in the modular programmes • Facilitate contact with other sport and exercise groups

Appendix 3) Workshop Activities (Phase 5 Guideline informed Pilot Action development)

Activity 1: Participants were asked to create their pilot actions informed by each of the guidelines

#	Guideline	How will your pilot action align to the guideline?
1	The sport and physical activity programme encourages parallel medical, psychological and social enhancement.	
2	Attendance to the programme is voluntary.	
3	Where possible, sessions or training take place at least three times per week.	
4	Sessions are designed for a duration of at least 30 min, and at most, 2 hours. This duration should be dependent on ability, fitness level, and availability.	
5	Training sessions end at least 2 hours before sleep time.	
6	The intervention or programme is designed for a minimal duration of 3 weeks, but longer duration is preferable. Shorter interventions require more sessions per week	
7	The activity is in groups, in an aim to develop social integration and social confidence, with an optimal group size between 5 and 15 people per 1 trainer.	
8	Ideally, training to take place before mid-day.	
9	Where possible, sessions should incorporate activity in open air or natural environments.	
10	Training activities are supervised by an instructor, who should provide motivation and support for the participant and adjust the programme accordingly to their needs on a weekly basis.	
11	The training or programme involves the setting of individualized goals to gradually increase the participant's fitness, confidence and skills.	
12	The intensity of physical exercise should aim towards a moderate level according to the participant's capability and fitness level.	
13	Sessions should be designed in order to develop mastery of skills, facilitating cognitive stimulation in the form of skill learning (e.g. concentration, coordination, memorization, competence, use of equipment, game strategy, etc.).	
14	The participant's goal progression and personal experience are supervised through regular feedback.	
15	The programme is flexible regarding participant involvement and attendance in each session, depending on the condition of the participant at the time of the session.	
16	The sport or physical activity takes place in a welcoming environment where people feel comfortable and a part of.	
17	The programme encourages the participant to continue taking part in sport and physical activity once the programme has finished.	

Activity 2: Participants were asked to demonstrate how you will record outcome measures

Outcome measure	How will you record the outcome measure?
How will you record the **demographic/participant details** throughout the pilot actions?	
How will you record **participant rates** throughout the pilot actions?	
How will you record participant **wellbeing and/or mental health** throughout the pilot actions?	
How will you record participant **physical health** throughout the pilot actions?	

Appendix 4) Dimensional diagnosis

Dimensional diagnosis

Dr Stefania Cerino, Dr Fernando Cross-Villasana, Dr Francesca Cirulli, & Dr Santo Rullo

In recent years, in psychiatry, the "classic" categorical diagnostics has been accompanied by a dimensional model, in which there is a continuum of degrees of certain pathological dimensions which combine to conform the particular clinical picture of a patient. The appreciation that dimensional models are enjoying among mental health professionals is due to the advantage of taking into consideration a whole series of intermediate qualitative variables behind clinical and sub-clinical conditions and thus a better definition of the gradual passage from a healthy presentation to a confirmed psychopathological one.

Dimensional models respond to one of the fundamental requests in the approach to psychiatric patients, that is, to recognise their "subjectivity" and "uniqueness" within a pathological path that will undoubtedly have many points of contact with diagnostic categories, but will also highlight the individual characteristics that will allow proper individual characterization. The "psychopathological dimensions" acquire then a particular "inter-diagnostic" character and "are better correlated to specific pathophysiological variables, representing a more immediate therapeutic objective" (Pancheri 2005).

In contrast to dimensional models, the categorical approach as represented for example by the Fifth Edition of *Diagnostic and Statistical Manual of mental disorders* (DSM-V), makes a clear separation between the "sick" and "non-sick" states. As a result, each diagnostic category is precisely defined and separated from the others. Since such clear cut distinctions is a rare situation in clinical practice, the problem arises where all those "intermediate" conditions that characterise different psychopathological presentations are included in "atypical", "not otherwise specified", "mixed" and “other” categories.

The possibility of making a "dimensional" diagnosis goes beyond the standardized assessment of the presence or absence of mental pathology in a given individual, because it also allows to determine the "quantity" of healthy functioning within a specific disorder actually present in the individual. In this way, we move away from the "rigidity" of categorical diagnosis, focusing instead on the structuring of a much more complex and articulated diagnostic profile, consisting precisely of all the "dimensions" that together (above a certain level) define the personality of the individual. Therefore, one of the problems more typically linked to categorical diagnoses is overcome: that is, the ability to explain the great heterogeneity of the symptoms and, above all, the inability to put clear limits between the various diagnoses - which is instead possible in the dimensional approach, much more oriented to give relevance to individual personality traits.

The ICD-11 (the International Classification of Diseases, defined by the WHO) addresses the chapter dedicated to psychiatric diagnoses according to an innovative dimensional model, with the revision of some terminologies and the evaluation of the patient functioning divided into three levels of severity (mild, moderate and severe - in addition to an "unspecified" severity). Six relevant personality traits were then identified, of which five (negative affectivity, dissociality, withdrawal, disinhibition and compulsiveness) represent dimensions common to different pathologies, while the sixth refers to borderline personality disorder. For each disorder of the sections relating to psychiatric diseases of the ICD -11 (Bucci 2017), the clinical descriptions and diagnostic guidelines present:

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a) a short definition;
b) a list of terms of inclusion and exclusion;
c) a description of the essential characteristics (aspects that can be found in all cases of the disturbance);
d) indications relating to the differentiation between the disorder and some relevant "normal" conditions;
e) a list of the disorders to be distinguished from the one being described and indications on the differential diagnosis;
f) the coded specifiers and subtypes;
g) information of clinical relevance regarding the course;
h) "associated clinical presentations" (clinically important conditions frequently associated with the disorder for which further evaluation and treatment may be required);
i) characteristics relating to culture;
j) presentations relating to the developmental stage (how the disorder can occur in childhood, adolescence and advanced age);
k) gender characteristics.

In the particular case of the schizophrenia, the relative section in the ICD-11 is called "Schizophrenia and other primary psychotic disorders". To make a diagnosis of schizophrenia it is necessary to have at least two symptoms among a list of seven, and necessarily one of the two must be delusion, hallucinations, disorganized thinking, or experiences of influence, passivity or control. Course specifiers (first episode, multiple episodes, continuous course) from which the clinical trend and the current symptomatic status (currently symptomatic, in partial remission, in full remission) can be inferred. The psychiatrist also has symptomatologic specifiers available, so that she/he can describe the severity of the symptoms in each of the six domains: positive symptoms, negative symptoms, depressed mood, exalted mood, psychomotor symptoms, cognitive symptoms.

Speaking of psychiatric dimensional diagnoses, one cannot fail to mention the “Research Domain Criteria” (RDoC) and the future that awaits psychiatric nosography (Cerino, 2020). The National Institute of Mental Health has already activated a research network in this sector that aims to bring together data from different research areas, from genetics, to neuroimaging, to the actual clinic to "better understand the basic dimensions of functioning underlying the full spectrum of human behaviour from normal to pathological" (NIHM, RDoC, 2010). The basic concepts underlying the RDoC paradigm are represented by the fact that mental illnesses are diseases of the central nervous system (CNS) that develop first of all following the involvement of large neural networks. The CNS and its brain circuits are highly flexible as well as neuro-plastic. This suggests the possibility that the human "connectome" has its own circuit-specificity arranged at multiple organizational networks that could explain pathological complexities at their various levels (Barch 2017). Moreover, clearly identified brain circuits and their respective dysregulations have the possibility of being studied with reliable tools, and finally, the crossed results between neuroscience and genetics may allow identifying clear replicable "biological traces" which will support the clinical approach to patients. The RDoC hypothesis is that "the study of neural networks is supposed to progress in two possible directions": “upwards”, that is, from anomalies in the neural circuits to relevant clinical variations, and “downwards", from anomalies in the neural circuits to the genetic and molecular variants that underlie the development and functions of the same circuits. Neural networks, therefore, may be intended as an intermediate phenotype located between multiple vulnerability / protection factors (genetic, early environmental, relational, social) and behaviours (Respino, 2017).

The cases presented in the SPHERE pilot projects have a great diagnostic variability, as each of the referrers placed the diagnosis according to the model in local and institutional use. Nonetheless, it is worth to highlight that for the use of physical activity as a treatment/rehabilitation tool in psychiatry, a dimensional model-oriented diagnosis can be highly functional to evaluate progress, also for orienting the patient in the selection of an optimal kind of physical activity or sport according to the affected dimensions and their severity. The aim of physical activity is not to cure one particular psychopathological symptom rather than another, but to act globally on the different areas of functioning in each patient: in this way, the possibility of an improvement is greater - perhaps apparently less specific, but certainly appropriate for patients.

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Appendix 5) SPHERE Guideline refinement and rationale

Below are two tables depicting the refinement process and rationale for changes made to the SPHERE guidelines based upon the evaluation process:

- Table 1 – Demonstrates alterations made to the SPHERE guidelines document
- Table 2 – Demonstrates the alterations made to individual aspects of the guidelines

Table 1: Alterations and justifications of the SPHERE guidelines document

Change made to the SPHERE guidelines document	Brief explanation for alterations to SPHERE guidelines document following the evaluation process
Addition of an introductory paragraph	A paragraph introduction and explanation has been added at the start of the guidelines document to explain how they could be used. The paragraph reads: Below are a set of guidelines developed to support the use of physical activity as part of psychiatric rehabilitation programmes. The recommendations are based on moderating factors that optimize the effectiveness of physical activity programmes for those living mental health problems. ***Before implementing the guidelines please consider your specific context, as certain aspects of the guidelines may not be appropriate for all circumstances, therefore implement the individual guidelines when and where feasible, adopting as many as possible.***
Re-ordering of original guidelines has been made.	The order of the guidelines has been adjusted to bring related points closer to one another for improved practical use.
Editing to ensure the guidelines are clear and fully understood by the reader.	Brief examples/comments have been added to a number of the guideline points to aid in understanding and use of the guidelines. These can be seen in italics below the relevant point.
Editing to ensure flexibility in guideline application in a range of settings.	With the addition of the brief introduction, terms such as 'where possible' and 'ideally' have been removed to ensure the reader understands that the SPHERE Guidelines are recommendations which should be used flexibly and adapted to specific contexts, rather than a strict set of rules.

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Table 2: Alterations and justifications of individual aspects of the SPHERE guidelines

Original SPHERE Guidelines used at each pilot site	Brief explanation for any alterations to aspects of the SPHERE guidelines following the evaluation process	Updated SPHERE guidelines following the evaluation process
1. The sport and physical activity programme encourages parallel medical, psychological and social enhancement.	The term 'sport and physical activity' was removed as is was deemed repetitive and the document has been clear to state (in the title and brief introduction) that the programme sport and physical activity. An additional sentence was included to incorporate the potential for prescription of physical activity/exercise referrals from medical professionals.	1) The programme encourages holistic clinical, psychological and social improvement. *For example: clinical–symptom management; psychological–improved wellbeing; social–improved social interaction and confidence. Where appropriate, prescription and follow up from a medical practitioner is recommended.*
2. Attendance to the programme is voluntary.		16) Attendance to the programme is voluntary.
3. Where possible, sessions or training take place at least three times per week.	Inclusion of 'independent activity' was deemed appropriate to encourage continued physical activity when appropriate.	10) Sessions ideally take place at least three times per week. *If 3 times a week is not possible then programmes should aim for 1 or 2 times a week, while encouraging independent activity.*
4. Sessions are designed for a duration of at least 30 min, and at most, 2 hours. This duration should be dependent on ability, fitness level, and availability.	It was felt that the terms 'ability', 'fitness level', and 'availability' were not an exhaustive list of reasons for adjusting the duration of practice, as such the term 'participant circumstances' was viewed to be more appropriate while the previous terms were offered as examples. Additionally, a focus on the nature of the activity (not just the participant's circumstances) was deemed important to include in the point.	9) Sessions are designed to include between 30 minutes and up to 2 hours of activity. *The duration should be dependent on individual participant circumstance (e.g., ability, fitness level, concentration levels, and availability), and nature of the activity (e.g. intensity levels, rest periods during activity, complexity).*
5. Training sessions end at least 2 hours before sleep time.	The term 'training' was removed as the language did not fit with all forms of physical activity. The inclusion of 'normally' aided with the flow of the point, while participants sleep times may not be set and sleep patterns can potentially fluctuate.	12) Sessions ideally finish at least 2 hours before participants normally go to sleep.

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6. The intervention or programme is designed for a minimal duration of 3 weeks, but longer duration is preferable. Shorter interventions require more sessions per week.	After further reviews of literature, it was suggested that an optimal duration of 8 weeks or more was found. Additionally, the inclusion of an optimal 8 weeks or more was aimed to help programmes aspire to greater numbers of weeks than just the minimum of 3.	8) The programme has a minimum duration of 3 weeks, and optimally a duration of 8 weeks or longer. *If 3 weeks (or more) is not possible, then a higher number of sessions per week is recommended.*
7. The activity is in groups, in an aim to develop social integration and social confidence, with an optimal group size between 5 and 15 people per 1 trainer.	Point 7 was split into two points one concerning the development of participants (point 7) and the other logistical group size (point 6). Regarding the development of participants, peer to peer support was emphasised as important during the evaluation. Additionally, the promotion of enjoyment was included to promote participant motivation and opportunities for continued engagement and retention in programmes.	7) Time should be designated for social interaction during and/or after sessions, while instructors should facilitate both peer to peer support and a sense of enjoyment during the programme. *When working in groups instructors should aim to develop participants' social integration and social confidence.* 6) The programme promotes group activities with an optimal group size between 5 and 15 people per 1 instructor. *Instructors should adjust group size depending upon circumstance (e.g., group's ability, levels of concentration, fitness).*
8. Ideally, training to take place before mid-day.	The term training was removed and replaced with activities to be inclusive of all physical activity.	11) Activities take place optimally before mid-day.
9. Where possible, sessions should incorporate activity in open air or natural environments.		14) The programme should seek to incorporate activities in the open air and natural environments.

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10. Training activities are supervised by an instructor, who should provide motivation and support for the participant and adjust the programme accordingly to their needs on a weekly basis.	The term 'training' was removed to promote all different types of physical activity. Technical guidance was included to promote development and learning of skills. Regarding the adjustments to programmes, rather than 'weekly' it was deemed that 'session by session' was more appropriate due to the different timescales of programmes.	3) Activities are supervised by an instructor/coach, who should provide technical guidance, motivation and support. *Instructors should adjust the programme accordingly to individual needs on a session by session basis.*
11. The training or programme involves the setting of individualized goals to gradually increase the participant's fitness, confidence and skills.	The point now includes an overall term to describe improvement and development, rather than being specific to 'fitness, confidence and skills'. An example has been included using previous text.	4) The programme should involve setting individualised goals for participants, to support gradual improvement and development. *For example: goals focussed on improving skills, attendance, participation, interaction with others, team working.*
12. The intensity of physical exercise should aim towards a moderate level according to the participant's capability and fitness level.	The term 'activities' has replaced 'physical exercise' to be more inclusive of all physical activity types. Suggestions for using low and high intensity activities have also been added to support programmes which may feel this as being appropriate. While a note of caution has been included for high intensity.	15) The intensity of activities should preferably aim towards a moderate level. *Participants' capability must always be considered and prioritised. Where moderate activity is not possible due to capability or capacity, low intensity is recommended. High intensity exercise should only be used with caution, where appropriate, under close supervision and by appropriately trained staff.*
13. Sessions should be designed in order to develop mastery of skills, facilitating cognitive stimulation in the form of skill learning (e.g. concentration, coordination, memorization, competence, use of equipment, game strategy, etc.).	The term 'mastery' was replaced with 'improve' and a focus placed upon learning rather than specifically mastering a skill.	2) The programme is designed to develop and improve skills, facilitating cognitive stimulation through the learning process. *For example: improved concentration, coordination, memorisation, use of equipment, and game strategy.*

14. The participant's goal progression and personal experience are supervised through regular feedback.	Similar to point 13, the focus of this point moved towards learning and development.	5) Participants' learning, development progression and personal experience are reviewed through regular discussion and feedback. *For example: Weekly or daily plenary sessions and feedback alongside training.*
15. The programme is flexible regarding participant involvement and attendance in each session, depending on the condition of the participant at the time of the session.	There was a slight adjustment to the language of the point.	17) Programme attendance and involvement is flexible to accommodate for participants' individual current circumstance.
16. The sport or physical activity takes place in a welcoming environment where people feel comfortable and a part of.	The promotion of safety and inclusivity was added to the point.	13) The programme takes place in a safe and inclusive environment in which people feel physically, psychologically, and socially comfortable, and a part of.
17. The programme encourages the participant to continue taking part in sport and physical activity once the programme has finished.	A brief explanation was added to emphasise the importance of the role of the instructor in promoting future physical activity throughout the duration of the programme. This was seen as vital as to prevent the guidance only coming at the end of the programme or not at all.	19) The programme promotes continued engagement in physical activity beyond the programme's duration. *Throughout the programme, instructors should provide participants with support, guidance and information concerning opportunities for continued physical activity engagement.*
	A new point was included after the evaluation highlighted the need to incorporate a point which concerned the provision of prior information to potential participants, and the need for consent when appropriate.	18) Prior to engaging in the programme, participants are made aware of what is involved, consent is sought, and ideally participants are engaged in their choice of activity. *For example, during a personal interview, informational sessions or pamphlets/leaflets.*

SPHERE

SPORT HEALING REHABILITATION

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