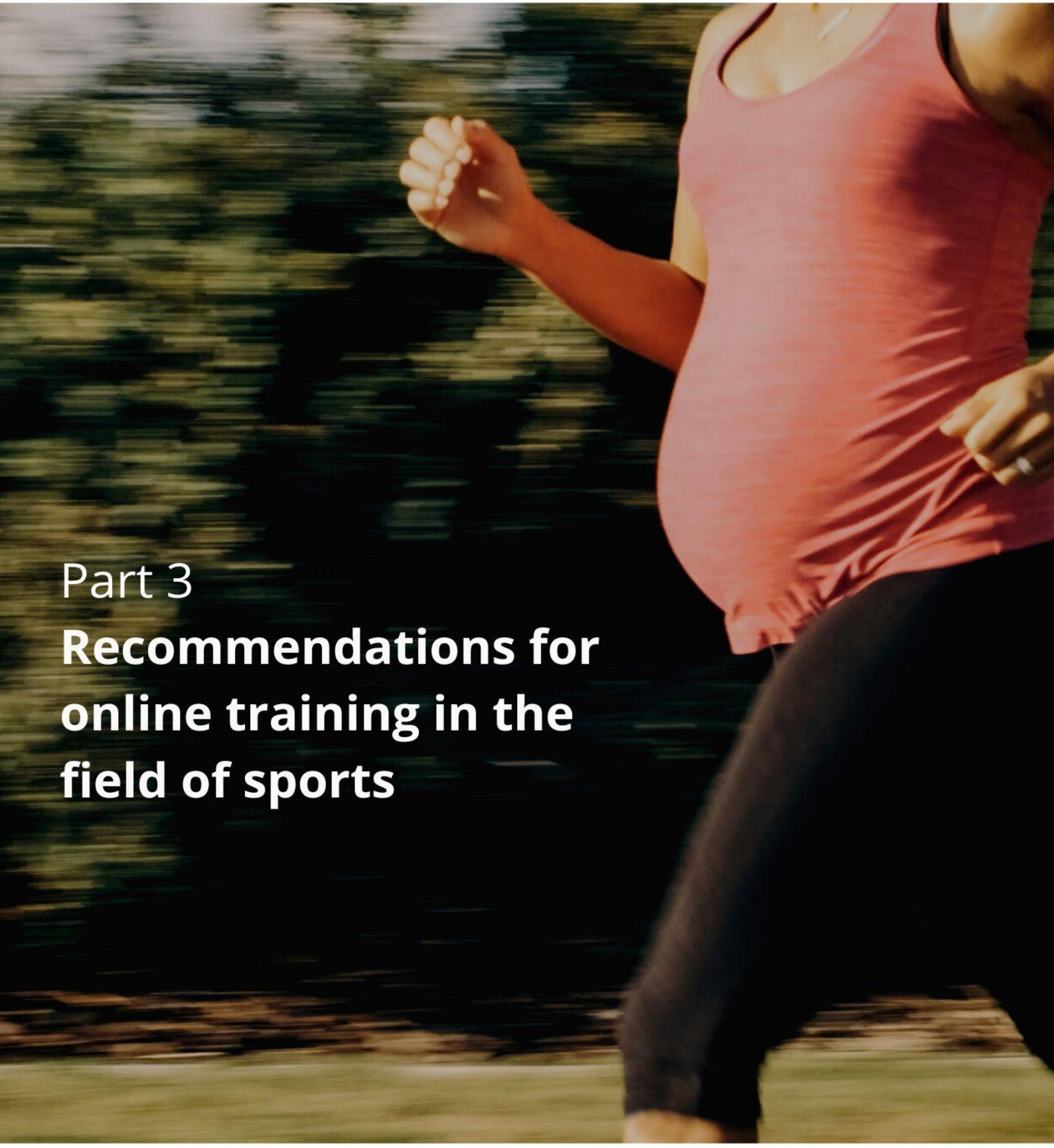
The New Era of Pre- and Postnatal Exercise



Part 3

Recommendations for online training in the field of sports

PROGRAM SPINAKER

Fundusze Europejskie Wiedza Edukacja Rozwój

Rzeczpospolita Polska

NAWA

Unia Europejska Europejski Fundusz Społeczny

The New Era of Pre- and Postnatal Exercise

Evidence-based education for exercise professionals
to provide physical activity programmes for clients
in the perinatal period

Final report

Part 3
Recommendations for online training
in the field of physical activity and exercise

Gdansk, 2023

Fundusze Europejskie Wiedza Edukacja Rozwój
Rzeczpospolita Polska
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NEPPE

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Table of content

General project information 5
Introduction 6
Recommendations for remote CPD training for exercise professionals 8
Recommendations for remote recruitment process 10
Recommendations for remote provision of the training 12
Recommendations for remote assessment of learning outcomes 14
All three methods can be used both face-to-face and remotely, which ensures comparability of qualifications obtained using various forms of validating learning outcomes. 14
Recommendations for the remote assessment of specialist knowledge 14
Recommendations for the remote assessment of learning outcomes related to planning exercise programmes 16
Recommendations for the remote assessment of learning outcomes related to conducting exercise sessions 22
Recommendations for online evaluation of the training 26
Recommendations regarding the competences of exercise professionals in the field of remote implementation of physical activity programmes 29
Opinions of the NEPPE training participants on remote implementation of exercise sessions or physical activity programmes for pregnant and postpartum clients 30
The NEPPE training participants' self-assessment of their skills in remote provision of exercise sessions or physical activity programmes for pregnant or postpartum clients 32
Recommendations regarding learning outcomes related to the use of online tools in the in the provision of physical activity programmes 37
Summary 40
References: 41
List of figures 43
List of tables 43
List of templates 43

General project information

Project title: The New Era of Pre- and Postnatal Exercise - training for instructors and trainers of various forms of physical activity in the field of online provision of exercise for pregnant and postpartum women

Acronym: NEPPE: New Era of Pre- and Postnatal Exercise

Entity executing the project: Gdansk University of Physical Education and Sport (GUPES)

Project coordinator: dr Anna Szumilewicz, assoc. prof. GUPES

Project timeframe: 1st of May 2021 – 31st of August 2023

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Project objective: to develop and implement an Intensive International Educational Programme (Intensywny Międzynarodowy Program Kształcenia – IMPK), hereinafter referred to as the NEPPE programme, aimed at preparing exercise professionals to remotely provide exercise for pregnant and postpartum clients.

Introduction

In this report, we present recommendations on the use of online tools, both in the process of international training of exercise professionals and for their cooperation with clients in the online implementation of physical activity and exercise programmes. The following proposals are based on experience from the New Era of Pre- and Postnatal Exercise (NEPPE) project, during which we carried out three editions of completely remote, continuing professional development (CPD) training for instructors, trainers, exercise specialists and physiotherapists.

The use of a online mode of the training provision enabled us to reach participants from 41 countries, including underdeveloped countries, and to involve 31 experts from 18 countries in the educational process. Thanks to this, we have significantly increased the range of our offer, as well as its attractiveness and educational effectiveness, using the knowledge and experience of a wide group of world-class teachers. Although the aim of the NEPPE project was to train exercise specialists in working with pregnant and postpartum clients, the acquired experiences are certainly universal and can be translated to other physical activity and exercise specializations.

The benefits of using online tools in educational processes are unquestionable, also in the area of physical activity and sport (1, 2). However, while the possibility of obtaining knowledge through online education is beyond doubt, acquiring and confirming practical skills and social competences, is still controversial (3, 4). Therefore, research and implementation work are needed to show the best solutions supporting the acquisition of practical skills, apart from traditional face-to-face teaching. For example Heng et al. (5) observed that video demonstrations were as effective as instructor-live demonstrations without noticeably compromising the teaching and learning of biomedical laboratory skills. In another study, Kullberg et al. (6) confirmed the effectiveness of virtual learning in developing the skills of psychiatry and psychology students in suicide prevention. So why wouldn't online CPD courses be effective for exercise professionals?

In this report, we present solutions and tools that can support the implementation of training in the area of physical activity and exercise, starting from the recruitment process, through the implementation of classes, verification of learning outcomes, to programme evaluation. They are intended to provide a transparent process of acquiring professional competences, ending with obtaining a certificate that is reliable for various stakeholders.

However, our recommendations should always be adapted to the specific requirements of a given physical activity or exercise specialization.

Discussions on the benefits and risks of online provision of exercise programmes began in the first decade of the XXI century (7-10). However, huge breakthrough in this regard occurred during the COVID-19 pandemic. The closure of fitness clubs and the compulsory limitation of direct social contact resulted in many people experiencing online home fitness for the first time. Consequently, during lockdown, many exercise professionals and gyms, out of necessity, began to provide their services exclusively online. As a response to this relatively new approach to fitness offerings, a lifelong learning (LLL) qualification 'Online provision of fitness services' was published in 2021 (11), under affiliation of EuropeActive – an umbrella organization representing physical activity and fitness sector in Europe. This qualification includes the professional competences necessary for exercise professionals to be able to carry out their professional tasks in a safe and effective manner, using online tools.

In the NEPPE training, we used selected learning outcomes from this qualification which, in our opinion, will be most needed for exercise professionals to design and implement exercise programmes for pregnant and postpartum clients. We consider "online fitness services" as something much broader than just conducting live exercise sessions via online applications. It includes all the aspects and stages of guiding and coaching pregnant and postpartum clients to positive lifestyle change and to integrate exercise and other healthy habits into their everyday life routines.

Before starting the NEPPE training, we asked participants to self-assess their current professional competences in the provision of online services. This allowed us to better identify educational needs and tailor our training offer. We also asked the training participants what they thought about the effectiveness of remote training and the possibilities of developing the offer of remote fitness services for special populations. Their positive responses encouraged us to continue the NEPPE project in the future.

This report is addressed primarily to educational institutions, both universities and vocational training providers, as well as teachers providing online training. We hope that thanks to the NEPPE project we will strengthen the global educational activities for exercise professionals and promote online provision of physical activity programmes for various populations.

Recommendations for remote CPD training for exercise professionals

The recommendations below are based on the experience gathered from three editions of the NEPPE remote training, to which 334 people applied. 172 participants completed the theoretical part, 120 people passed both the theoretical and practical exam. An important result of the NEPPE training evaluation is that over 90% of graduates stated that the online mode of training was effective (Figure 1). The vast majority of them admitted that during the NEPPE training they gained adequate knowledge and practical skills related to planning and implementing exercise programmes for pregnant and postpartum clients (Figure 2 and Figure 3). In the initial theoretical test, the participants of the three editions obtained an average of 72% ± 16, in the post-test 86% ± 8 correct answers. The results in the post test were statistically significantly better $p < 0.000$. In the final assessment, the participants demonstrated also good level of practical skills in planning and implementing exercises for pregnant and postpartum clients. They obtained an average of 83% of the maximum score in preparing the 8-week exercise programme, and 94% of the maximum score in conducting the exercise sessions. Detailed results of the evaluation and analysis of the effectiveness of the NEPPE training were presented in the first part of this report entitled: 'Description of the NEPPE training programme with guidelines for its implementation.' The results obtained encourage the widespread use of our solutions and tools in other remote training in the area of physical activity and exercise.

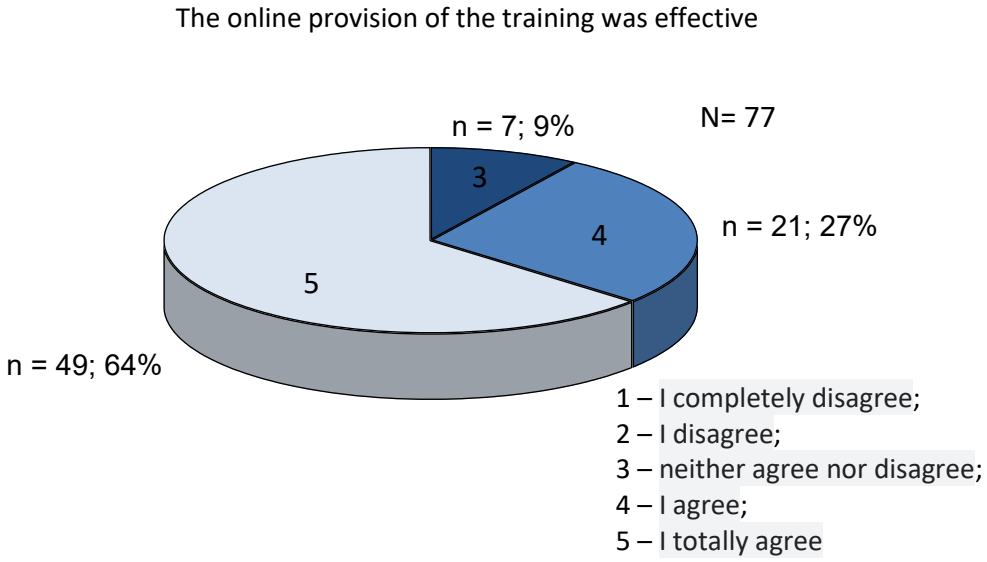

Figure 1. Participants' responses to the question whether the online provision of the NEPPE training was effective

I have gained **adequate knowledge** on how to work with pregnant or postpartum clients

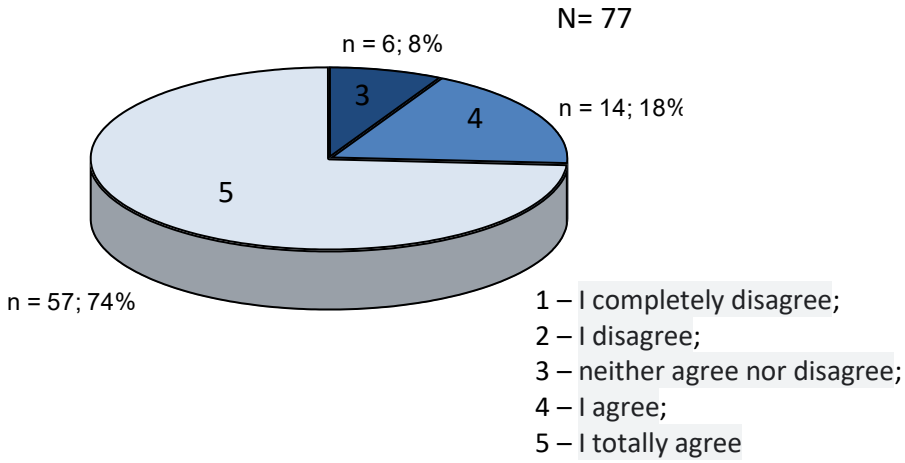

Figure 2. Participants' responses to the question whether during the NEPPE training they gained adequate knowledge on how to work with pregnant or postpartum clients

I have gained **practical skills** related to planning and implementing exercise programmes for pregnant and postpartum clients

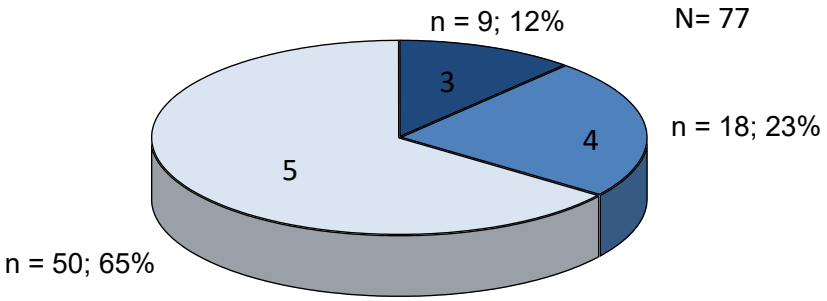

Figure 3. Participants' responses to the question whether during the NEPPE training they gained practical skills related to planning and implementing exercise programmes for pregnant and postpartum clients

1 – I completely disagree;
2 – I disagree;
3 – neither agree nor disagree;
4 – I agree;
5 – I totally agree

It should be emphasized that in the NEPPE project, the prerequisite for joining the training was having the qualifications of an exercise professional (e.g. personal trainer, group fitness instructor, Pilates teacher). For that reason, our proposals for verifying learning outcomes do not include monitoring and control of the multi-stage training process at clients. Therefore, for courses aimed at obtaining qualifications in the so-called core disciplines (such as the above-mentioned qualifications of a personal trainer or group fitness instructor), the tools should be supplemented.

Recommendations for remote recruitment process

For transparency and good organization of training, regardless of its form or thematic area, potential candidates should have access to the training regulations, including recruitment conditions. Most often, the regulations are available on the websites of training providers, well in advance before the start of a given training.

In the case of training conducted remotely, it seems obvious to also conduct recruitment remotely. Candidates should be able to provide the required documents (e.g. ID card, confirmation of initial qualifications) by e-mail or via a special online recruitment system.

In the case of international training, we recommend conducting the interview in English, which will allow the training provider to verify both the candidates' substantive knowledge and their communication skills in a foreign language. The appropriate level of language skills will potentially determine the effectiveness of the training.

In the NEPPE project, we used MS Teams for online job interviews. For logistical reasons, we recommend that the conversation last no longer than 10-15 minutes and have a structured script covering the following topics:

- presentation of the applicant’s motivation for joining the training;
- applicant’s communication skills;
- experience in planning and implementing physical activity programmes;
- experience in working with a given population.

For each of the issues the assessor assigns points on a 0-3 scale. The sum of the points obtained determines the candidates’ ranking. To structure the interview (Template 1), we have prepared a candidate assessment form.

Template 1. Template for interview assessment in the remote recruitment process for exercise professionals CPD training

Interview evaluation form in the remote recruitment process for CPD training for exercise professionals

Name and surname of the candidate:…….

Date of the interview:……

Individual needs for the necessary support enabling recruitment and participation in the training (e.g. related to any disabilities), if any:

……

……

Criteria	Scores*		
	Assessor 1	Assessor 2**	Assessor 3**
Presentation of the candidate's motivation for joining the training			
Candidate's communication skills (including communication in English)			
Experience in planning and implementing physical activity programmes			
Experience in working with a given population			
The sum of the scores from each assessor separately:			
Total score:			
Notes:			
*For each of the above criteria, the assessor assigns scores on a 0-3 scale, where 0 means not sufficient, 1 – sufficient, 2 – good, 3 – very good. The sum of the points obtained will determine the candidates' ranking. ** The interview may be conducted by one assessor or a committee of assessors.			

Name and signature of the assessor (s):

……

……

……

Recommendations for remote provision of the training

When implementing remote training, the choice of an online educational application is crucial. It should enable participants not only to attend classes (i.e. to have access to audio and video), but also to allow them to communicate with teachers in real time (e.g. in the form of a chat or a traditional way of asking questions). Access to recordings of conducted classes is also very important. First, international training will most likely limit participation in real-time classes by people from different time zones. Secondly, due to the classes being conducted in English, some participants will require replaying the material and additional time to use translators. Thirdly, regardless of difficulties related to time zones or languages, recorded classes are excellent educational material for repetitions and support the acquisition of expected learning outcomes. Participants of the NEPPE project assessed access to recorded classes as one of the strengths of the training.

We recommend to record only the classes, which are based on the teacher-centred method (e.g. lectures and presentations of exercises by experts). Classes based on the learner-centred or content-cantered methods, during which participants present their exercises and physical activity programmes, in our opinions should not be recorded. In this way, the training provider will avoid the discomfort of the participants, for whom it is not only stressful to confront their knowledge and specialist skills with the teacher, but also the need to use English in the group (we should assume that in the international training not all participants are native speakers).

The online educational application should also enable placing various educational materials in one spot, including multimedia presentations of individual classes, links to sample exercise sessions, publications or e-books, as well as organizational information and information related to the conditions, methods and criteria of final assessments. The ability for participants to communicate with training provider outside of class time is also useful.

In the NEEPE project, we chose MS Teams application to conduct remote training. After the recruitment stage, the participants were set up with a university MS office account, thanks to which they had access to all functions of the MS Teams application, including the calendar, teaching materials and recordings. Through the MS Teams application, participants could also contact lecturers outside the planned classes.

Each edition of the NEPPE training included 150 teaching hours (including theoretical and practical classes) and lasted one month. One teaching hour was 45 minutes. 120 hours were

devoted to specialist issues related to the planning and implementation of physical activity programmes for pregnant and postpartum clients, 20 hours were planned for content related to the use of online tools in the provision of exercise programmes, 10 hours were an additional module promoting the Polish culture. This number of hours was sufficient to achieve our educational goals. However, based on our experience, it is worth spreading similar training over a longer period than one month, giving participants time to learn the material and practice practical skills. For other training in the area of physical activity and exercise, it may be different, depending on the specificity of the training and the candidates' initial competences.

We recommend to plan classes were during which participants have the opportunity, under the supervision of tutors, to individually improve their competences, mainly practical skills in planning and implementing health-promoting physical activity programmes for a given population. During these classes, they can present individually designed exercise programmes and the outlines of exercise sessions, prepared for the final practical assignments.

Since during remote training in the area of physical activity, participants are encouraged to attend online exercise sessions, training provider should educate them in the field of safety requirements, including the appropriate preparation of the place for exercise and the indication of contact persons in the event of an accident or deterioration of well-being. They should also obtain declarations from training participants regarding the waiver of claims in the event of an accident.

We also recommend to archive the final versions of the participants practical assignments (e.g. physical activity programmes and video sessions). It is also useful to get the permission from the training participants to use their final practical assignments as the didactic material for subsequent editions of the training.

Recommendations for remote assessment of learning outcomes

Regardless of the attractiveness of the training, its content or organization, the verification of learning outcomes is of the key importance. The appropriate selection of verification methods and tools is intended to ensure the professional preparation of the learner to perform specific tasks on the labour market. In the case of exercise specialists, the basic professional task is to plan and implement physical activity programmes, which requires both specific knowledge and practical competences. Therefore, regardless of the form of training implementation, the evaluation should include both learning outcomes in the area of knowledge and skills.

For CPD training in the area of physical activity and exercise, we propose three methods of assessing learning outcomes:

- multiple choice test checking theoretical preparation in the field of planning and implementing physical activity programmes for a given population;
- a practical task involving the design of a 6-week exercise programme for a participant with specific characteristics, representing a given population;
- practical task consisting in conducting a full exercise session (prepared as a video material) for a participant with specific characteristics, representing a given population.

All three methods can be used both face-to-face and remotely, which ensures comparability of qualifications obtained using various forms of validating learning outcomes.

Recommendations for the remote assessment of specialist knowledge

Assessment of theoretical competences using digital tools is relatively simple, which is why it has been widely used in training in various areas for many years. Online tools are available that allow assessors to create any tests they want, using open or closed, single or multiple choice questions.

Since one of the practical tasks in the NEPPE training consisted in describing the preparation of an exercise programme, we decided that a test form would be sufficient to assess theoretical competences. In order to analyse the effectiveness of the training, we conducted the test twice: during the first and last classes. The initial test contained 30 closed questions covering issues corresponding to the learning outcomes, i.e. planning and carrying out classes

for clients in the perinatal period. The final test included 50 questions of the same difficulty as the initial test. To pass the test, it was required to obtain 60% correct answers.

To take the test, participants had to use the links we sent. Applications allow the user specification (via email address). This means that the link can only be opened once and only by the person to whom the link is addressed. Due to the impossibility of supervising the test, we decided on the open book test formula, assuming that participants would be able to use available educational materials. Nevertheless, we applied time limits, thus preventing the search for an answer from taking too long. The time we recommend for the answer is 20-30 seconds, depending on the length of the question and the number of answer options. We also recommend using automatic test result option. Thanks to this, participants will receive a response immediately after submitting the test, and teachers or training provider will not be burdened with either checking the tests or sending their results to individual participants.

In addition to the raw result in the form of the number of points received, it is also worth preparing score ranges, especially in relation to the minimum score required to obtain a positive grade. In the NEPPE training, we assumed four levels of knowledge in the area of perinatal exercises: high, average, low and insufficient. The appropriate score for the initial test (with a maximum possible score of 30 points) is presented in the Table 1. In our opinion, proposing a quantitative-qualitative assessment can potentially motivate participants to further professional development.

Table 1. Point ranges determining the categories of specialist knowledge in the NEPPE initial test

Number of points	%	Category of knowledge
26 to 30	87-100	high
21 to 25	70-83	average
16 to 20	53-67	low
15 and below	50 and below	incompetent

Recommendations for the remote assessment of learning outcomes related to planning exercise programmes

To assess the learning outcomes related to planning exercise programme the training participants should design a 6-week exercise programme for a participant with specific characteristics, representing a given population. The exercise programme should be described using the template presented below (Template 2). The training provider may require training participants to send these programmes via e-mail or create a template in the online application, which will significantly speed up the formal evaluation of the submitted works (e.g. this option will prevent the submission of incomplete programmes or works exceeding a certain number of words).

In the first part of this task, training participants are asked to characterize their clients, including the following information:

- Physical activity level
- Age
- Any important information related to the health condition and well-being
- Self-perception of health (any discomforts, which)
- Occupation
- What are the main motivations for exercising?
- Which are the client's preferences regarding exercise?
- What can be the main barriers and facilitators?
- Other important information for the exercise programme design, in particular specific for a given population.

In the second part of this task, the training participant should select at least three tools for health screening and fitness assessment, briefly describe them and justify their choice. In the third part, taking into account the client's characteristics presented above, they should appropriately plan exercises, intensity, duration, frequency and progression for 6 weeks. The aerobic, resistance, flexibility and neuromotor exercises should be described separately.

All exercises have to be described according to the following outline: 1. starting position, 2. the movement, 3. which muscles are mainly involved, 4. when you exhale and inhale, 5. potential precautions and options of difficulty (e.g. in terms of the posture, client's well- being).

Template 2. Template for designing a 6-8 week exercise programme

The template for a 6-8 week exercise programme design

The participant's name and surname:…….

Part 1: Description of the client using following information (all fields must be filled in):

1.	Physical activity level	
2.	Age	
3.	Any important information related to the health condition and well-being	
4.	Self-perception of health (any discomforts, which)	
5.	Occupation	
6.	What are the main motivations for exercising?	
7.	Which are the client's preferences regarding exercise?	
8.	What can be the main barriers and facilitators?	
9.	Other important information for the exercise programme design, in particular specific for a given population	

Part 2: List of the tools (at least three) to screen and/or monitor the client's health and fitness status (all fields must be filled in):

No	The name (or short description) of the tool	Parameters to be measured	Short justification why a particular parameter should be measured in your client
1.			
2.			
3.			

A summary of the client's data collected from the use of the assessment and/or monitoring tools identified above:

……
……
……
……
……
……

Part 3: Description of the exercise programme for a client characterized above (all fields must be completed):

Type	Intensity	Duration	Frequency	Progression / Adaptation/ Comments (if applicable)
Aerobic				
Resistance*				
Flexibility*				

Neuromotor*				

*All exercises must be described: 1. starting position, 2. the movement, 3. which muscles are mainly involved, 4. when you exhale and inhale 5. potential precautions and options of difficulty (e.g. in terms of the posture, client' s well- being)

Additional comments:
……
……
……
……
……
……
……

We suggest assessing the description of each training component for particular types of exercises using a scale of 0-3, where 0 meant ‘insufficient’, 1 – ‘sufficient’, 2 – ‘good’, 3 – ‘very good’. To structure the verification process of this practical task we recommend to use the assessment form for the exercise programme design (Template 3).

Template 3. Assessment form for the exercise programme design

Assessment form for the exercise programme design

Name and surname of the training participant:		
No	**Parts of the exercise programme design**	**Scores**
1.	Score of client description	
2.	Score of the tools list to screen and/or monitor the client's health and fitness status	
3.	Score of exercise description	
	Total score (summary of scores from the parts 1-3):	

Part 1: For the description of a client the training participant receives scores:

- 0 – The participant did not provide all required information about the client
- 1 – The participant provided all required information about the client

	Client's characteristics	Tick, if the information has been provided
1.	PA level	
2.	Age	
3.	Any important information related to the health condition and well-being	
4.	Self-perception of health (any discomforts, which)	
5.	Occupation	
6.	What are the main motivations for exercising?	
7.	Which are the client's preferences regarding exercise?	
8.	What can be the main barriers and facilitators?	
9.	Other important information for the exercise programme design, in particular specific for a given population	
	Score (0 or 1):	

Part 2: For the description of the tools to screen and/or monitor the client's health and fitness status the participant receives scores:

- 0 – the participant did not fill in the field or filled it in incorrectly,
- 1 – sufficient,
- 2 – good,
- 3 – very good,
- *Extra 1 point for a summary of the client's data collected from the use of the assessment and/or monitoring tools identified above

No	tools to screen and/or monitor the client's health and fitness status		Score (0-3)
1.	First tool	The name (or short description) of the tool	
		Parameters to be measured	
		Short justification why a particular parameter should be measured in your client	
2.	Second tool	The name (or short description) of the tool	
		Parameters to be measured	
		Short justification why a particular parameter should be measured in your client	
3.	Third tool	The name (or short description) of the tool	
		Parameters to be measured	
		Short justification why a particular parameter should be measured in your client	
4.	A summary of the client's data collected from the use of the assessment and/or monitoring tools identified above*		
		Total score:	

Part 3: For the exercise description the participant receives scores:

- 0 – the participant did not fill in the field or filled it in incorrectly,
- 1 – sufficient,
- 2 – good,
- 3 – very good,
- **Extra 1 point - for additional comments related to the exercise programme design

No	Description		Score (0-3)
1.	Aerobic	Type	
		Intensity	
		Duration	
		Frequency	
		Progression / Adaptation/ Comments	
2.	Resistance	Type	
		Intensity	

		Duration	
		Frequency	
		Progression / Adaptation/ Comments	
3.	Flexibility	Type	
		Intensity	
		Duration	
		Frequency	
		Progression / Adaptation/ Comments	
4.	Neuromotor	Type	
		Intensity	
		Duration	
		Frequency	
		Progression / Adaptation/ Comments	
5.	Pelvic floor training	Type	
		Intensity	
		Duration	
		Frequency	
		Progression / Adaptation/ Comments	
6.	Additional comments**		
		Total score:	

Recommendations for the remote assessment of learning outcomes related to conducting exercise sessions

To assess the learning outcomes associated with conducting exercise sessions for a given population should provide a video material which meet the following requirements:

1. The exercise session is conducted with **at least one client** representing a given population.
2. The material is supplied in the video file, not exceeding the size of 1 GB;
3. The exercise session can be conducted anywhere (in the gym, at home, outdoors).
4. Any sports equipment can be used in the session, but it is not necessary (only exercises with own body resistance can be used);
5. The session should last at least 30 minutes, maximum 90 minutes (the duration and the intensity should be properly planned taking into account the characteristics of the client)

6. At the beginning of the video file, the training participant should display the information that the presented exercise session is carried out as a final practical exam in the training. If possible, the participant should include the name and logo of the training provider.
7. The training participant gives written consent that the provided video material will be used for educational and promotional purposes by the training provider.
8. A person participating in the exercise session as a client, before starting the recording, must give written consent to the recording and use of the personal image in the activities related to the training promotion and implementation. The training participant may be asked to send this consent to the training provider.
9. In the video material, before starting the session, **the training participant presents the client**, providing the following information:
    - The client description should include following information:
    - Physical activity level
    - Age
    - Any important information related to the health condition and well-being
    - Self-perception of health (any discomforts, which)
    - Occupation
    - What are the main motivations for exercising?
    - Which are the client's preferences regarding exercise?
    - What can be the main barriers and facilitators?
    - Other important information for the exercise programme design, in particular specific for a given population.

To structure the process of the video material assessment we recommend to use the following template, presented below (Template 4)

Template 4. Assessment form for conducting an exercise session (video material)

Assessment form for conducting an exercise session (video material)			
Name and surname of the training participant:			
No.	**The training participant presents the client**, providing the following information:	Tick, if the information has been provided	
1.	Physical activity level		
2.	Age		
3.	Any important information related to the health condition and well-being		
4.	Self-perception of health (any discomforts, which)		
5.	Occupation		
6.	What are the main motivations for exercising?		
7.	Which are the client's preferences regarding exercise?		
8.	What can be the main barriers and facilitators?		
9.	Other important information for the exercise programme design, in		
	Score (0 or 1)*:		
***For the description of a client the training participant receives scores:** 0 – The participant did not provide all required information about the client 1 – The participant provided all required information about the client			
No.	**The training participant presents following skills:** **All skills must attain <u>at least the score of 1.</u>**	**Indicate time in your session***	**Scores (0-3)****
1.	plans the correct structure of the exercise session (warm-up, main part, cool down):		
	A) Aerobic exercises***		
	B) Resistance exercises for major muscle groups (including abdominal muscle exercises)		
	C) Flexibility exercises		
	D) Neuromotor exercises		
	E) Breathing and relaxation exercises		

2.	correctly selects exercises, their difficulty and intensity appropriate to the needs, abilities, potential discomforts of the client (**based on the provided characteristics of the client**);		
3.	safely organizes the exercise session, e.g. in terms of proper use of exercise equipment, removing dangerous objects from the exercise site, checking the client's preparation and readiness to participate in the session;		
4.	demonstrates the exercises correctly;		
5.	monitors the intensity, e.g. observing the client, asking questions, with the Borg's RPE scale, pulsometer;		
6.	depending on the client's performance, modifies the intensity and difficulty of the exercises, e.g. using breaks, breathing exercises, changing the tempo of exercise or adapting exercises;		
7.	clearly instructs the client about the correct technique of the exercise, e.g. about the starting position, breathing pattern, technical tips;		
8.	informs participants about the purpose of individual exercises and health benefits, e.g. 'in these exercises we stimulate the cardiovascular system, strengthen the abdominal muscles', 'thanks to these exercises you will prevent backache', etc.		
9.	notices the technical mistakes of the client and reacts to them, (e.g. by changing the exercise, modifying, instructing, commenting), and enforces the correct exercise technique from the client;		
10.	greets and says goodbye to the client and makes eye contact;		
11.	asks the client about the well-being at the beginning, during and at the end of the session;		
12.	motivates the client to the physical effort during the session and encourages to participate in future classes;		
13.	uses professional language in contact with the client;		
14.	presents an appropriate level of motor preparation, which enables proper technique demonstration and proper course of the exercise session;		
15.	wears sports clothes and shoes, appropriate to the environment of the exercise session.		
	Total score:		

*to be filled in by the participant
** to be filled in by the assessor: 0 – incompetent, 1 – sufficient, 2- good, 3 – very good
*** all types of exercise from the A-E points must be presented

Recommendations for online evaluation of the training

Evaluation of training by its participants is crucial for improving the educational offer. Online tools enable efficient sending of links and quick collection of anonymous opinions, both in the form of answers to closed and open questions. To evaluate training in the area of physical activity and exercise, we recommend two-stage research.

Template 5. Template for evaluating remote training for exercise professionals

Rate each question using the 1-5 scale, as follows: 5 – excellent/I totally agree, 4 – very good/I agree; 3 – good/neither agree nor disagree; 2 – poor/I disagree; 1 – very poor/I completely disagree					
The contents of the classes were useful for the exercise professional's practice	1	2	3	4	5
I have gained adequate knowledge on how to work with a given population	1	2	3	4	5
I have gained practical skills related to planning and implementing exercise programmes for a given population	1	2	3	4	5
The online provision of the training was effective	1	2	3	4	5
Expertise and experience of the teachers	1	2	3	4	5
Time management of each session (e.g. the length of the sessions, time planned for questions)	1	2	3	4	5
Time management of the training (e.g. the proportion of the time for the supervised classes and the self-learning, number of classes during the day)	1	2	3	4	5
Length of the training	1	2	3	4	5
Educational resources supporting the training (YouTube channels, books, presentations, other materials provided by the teachers)	1	2	3	4	5

The first evaluation should focus on the quality of the training. Closed questions should concern training components such as: the content of the classes, the knowledge gained, the practical skills obtained, effectiveness of online provision of the training, expertise and

experience of the teachers; quality of teaching materials and time management. Due to the potential quantitative analysis of collected opinions we recommend using the 1-5 rating scale, where 5 meant 'excellent/I totally agree', 4 – 'very good/I agree'; 3 – 'good/neither agree nor disagree', 2 – 'poor/I disagree' and 1 – 'very poor/I completely disagree'. A sample form for evaluating the quality of training is presented above (Template 5). We recommend that the evaluation questionnaire also include open questions, giving participants greater freedom of expression and sharing their experiences, thoughts and suggestions. We suggest using the following open questions:

- Which classes or topics would you like to have more? If you liked all classes, please write N/A.
- Which activities or topics do you consider unnecessary or that there were too many of them? If you liked all classes, please write N/A.
- What do you consider to be the strengths of the training? / What were you most satisfied with during the training?
- What do you consider to be the weaknesses of the training? / What was the reason for your dissatisfaction?
- Would you like to share any opinion about the training?

We recommend sending out the evaluation survey no sooner than after providing participants with the results of all their final assessments. Participants should not feel pressure that their opinions or comments may change the final grade.

One of the key tasks of vocational training is to increase the competences of participants, contributing to their better prosperity on the labour market or satisfaction with professional development. Therefore, we propose to carry out the second stage of evaluation approximately 6-12 months after the end of the training. The time since the completion of the training should have been long enough for the graduates to observe its long-term effects. At this stage, participants should evaluate the impact of the training in the context of their professional work, occupational roles and professional development. We recommend to use the 1-5 rating scale, where 5 means that the training impacted identified issues 'very significantly'; 4 – significantly; 3 – moderately, 2 – slightly; 1 – not at all. A template for assessing the impact of remote training on the career development of exercise professionals is presented below (Template 6).

Template 6. A template for assessing the impact of remote training on the career development of exercise professionals

Rate how much the training over the past 6-12 months has affected the following issues, using the 1-5 scale: 1 – not at all; 2 – slightly; 3 – moderately; 4 – significantly; 5 – very significantly:					
It increased my competence to work with a given population	1	2	3	4	5
It increased my competence to remotely implement exercise programmes	1	2	3	4	5
It gave me more confidence in my professional tasks	1	2	3	4	5
It increased my credibility on the labour market (e.g. for the employer, clients)	1	2	3	4	5
It allowed me to establish attractive professional contacts (with teachers, other participants of the training, potential employers)	1	2	3	4	5
It gave me more confidence in dealing with obstetric care providers	1	2	3	4	5
It increased the chance of employment in line with my needs and expectations	1	2	3	4	5
It improved my financial situation on the labour market	1	2	3	4	5
It inspired me to further professional development in the subject of exercises for a given population	1	2	3	4	5

Recommendations regarding the competences of exercise professionals in the field of remote implementation of physical activity programmes

Currently, the competences of exercise professionals in the use of online tools to implement physical activity programmes are becoming more and more important. Technology has been recognized as one of the main drivers in the fitness industry over the past few years (12, 13). Better and advanced mobile applications continue to appear on the market that allow users to monitor physical activity, provide quick feedback on their training goals and support maintaining motivation to exercise regularly (14, 15). Wearable devices and other digital advancements already allow for the fitness assessment (16). Nowadays, new technology enable completely remote implementation of physical activity programmes, starting from interviewing and initial fitness screening, through implementing an exercise programme, supporting behaviour change, to setting and evaluation of long-term goals in the field of a healthy lifestyle. One of the main advantages of this solution is the increased availability of fitness services, especially for people for whom the traditional forms of delivery, due to the distance from fitness facilities or time constraints, is very limited. This development is supported by good quality scientific data that an online exercise programme can be as effective as a traditionally supervised one, even when working with special populations, including the pregnant population (17-20) and the postpartum population (21-23).

At the same time, it is recognised that there are some risks associated with remote delivery of physical activity programmes and the use of new technology. They may be associated with a potential higher risk of injury for participants who exercise unsupervised and in unsuitable rooms. Another problem may be claims of clients against exercise professionals for the negative consequences of poorly adapted training programmes. In turn, the use of wearable devices and mobile applications requires appropriate knowledge and skills from potential users. In the systematic reviews of mobile apps targeted at pregnant and postpartum users (24, 25), we found that not all of the information provided was evidence-based. Interestingly, James et al. (26), observed that users who start using fitness technologies for enjoyment, challenge, revitalization, affiliation, or to make positive improvements to their health or strength and endurance, are more likely to report that the fitness technologies are satisfying their basic psychological needs. On the other hand, users who start using them for stress management, social recognition, competition, or weight management are more likely to

report frustration. That is why it is so important to properly educate exercise professionals so that they can properly use online tools. First, to carry out their professional tasks related to the remote provision of exercise programmes in a safe and effective manner (27). Second, to teach clients how to consciously use new technology to achieve the greatest possible training and health benefits.

Opinions of the NEPPE training participants on remote implementation of exercise sessions or physical activity programmes for pregnant and postpartum clients

Before starting the NEPPE training, we conducted a survey among the participants regarding their opinions on various aspects of the implementation of physical activity programmes for pregnant and postpartum clients. The tool for this survey was the International Competency Questionnaire for Exercise in Pregnancy and Postpartum, which we developed as part of the NEPPE project. The full version of this questionnaire was presented in the first part of the report. We collected opinions from 199 participants.

Part III of the questionnaire concerned the participants' opinions on remote delivery of physical activity programmes for pregnant and postpartum clients. Before asking questions we defined that as the remote delivery of exercises or physical activity programmes we understand the interaction of the exercise professional with a pregnant or postpartum client using the technological infrastructure enabling remote communication. Remote delivery of exercise includes all stages of cooperation with the participant, typical for the delivery of exercise session or physical activity programmes in the traditional form, i.e. initial interview, assessment of exercise capacity, planning and conducting classes as well as monitoring and evaluation of exercise effectiveness. Professional tasks related to the remote delivery of exercise sessions or physical activity programmes by far exceed the recording of video material with exercises or streaming of exercise sessions that are aimed at a wide audience (however, these activities can be used as part of the remote delivery of exercise programmes).

In the first stage, participants had to assess to what extent they agreed or disagreed with the following statements regarding remote training for pregnant and postpartum clients. We asked them five questions about their opinion on the effectiveness of remote delivery of exercise, the education of exercise professionals in this area and the potential development of online services. We used the 1-5 rating scale, where 1 meant 'I strongly disagree'; 2 – 'I do not

agree'; 3 – 'I have no opinion'; 4 – 'I agree'; and 5 – 'I strongly agree'. We have provided answers to these questions in Table 2.

Table 2. The opinions of the NEPPE training participants regarding the remote provision of exercise sessions / physical activity programmes for pregnant and postpartum clients

The opinions of the NEPPE training participants (n = 199) regarding the remote provision of exercise sessions / physical activity programmes for pregnant and postpartum clients							
	Variables (n, %)	**1**	**2**	**3**	**4**	**5**	**Me**
1.	Conducting exercise sessions / physical activity programmes for pregnant and postpartum clients completely remotely may be as effective as conducting exercise sessions / physical activity programmes in a face to face form.	12; 6%	37; 19%	55; 28%	77; 39%	18; 9%	3
2.	Remote exercise sessions / physical activity programmes for pregnant and postpartum clients can be very effective, but some tasks should be performed in physical face to face contact (e.g. conducting an initial interview, basic health screening and assessment of exercise capacity and fitness parameters).	5; 3%	11; 6%	30; 15%	88; 44%	65; 33%	4
3.	Basic content for remote provision of exercise sessions / physical activity programmes should be included in the general training of instructors, trainers or exercise specialists (regardless of qualification level and specialisation).	1; 1%	12; 6%	36; 18%	90; 45%	60; 30%	4
4.	The offer of remote exercise sessions / physical activity programmes for pregnant and postpartum clients will develop dynamically, due to their widespread availability.	1; 1%	9; 5%	41; 21%	109; 55%	39; 20%	4
5.	The offer of exercise sessions / physical activity programmes for pregnant and postpartum clients conducted remotely does not have a great chance for development, due to the fact that these groups of participants require constant direct supervision by the exercise professional during exercise.	20; 10%	82; 41%	48; 24%	37; 19%	12; 6%	2
The 1-5 scale: 1 - I strongly disagree; 2 - I do not agree; 3 - I have no opinion; 4 - I agree; 5 - I strongly agree; Me: the median score for individual variable (at least 50% of answers).							

At least half of the participants (Me = 2) agreed that basic content for remote provision of exercise sessions or physical activity programmes should be included in the general training of exercise professionals and that the remote physical activity services for pregnant and postpartum clients will develop dynamically, due to their widespread availability. Interestingly, at least half of them didn't agree (Me = 2) that the offer of exercise sessions or physical activity programmes for pregnant and postpartum clients conducted remotely does not have a great chance for development, due to the fact that these groups of participants require constant direct supervision by the exercise professional during exercise. However the participants didn't support the statement (Me = 3) that conducting exercise sessions or physical activity programmes for pregnant and postpartum clients completely remotely may be as effective as conducting exercise sessions or physical activity programmes in a face to face form. They preferred the option (Me = 4) that in the online provision of physical activity programmes some tasks should be performed in physical face to face contact (e.g. conducting an initial interview, basic health screening and assessment of exercise capacity and fitness parameters).

The NEPPE training participants' self-assessment of their skills in remote provision of exercise sessions or physical activity programmes for pregnant or postpartum clients

In the next question, we asked participants for their self-assessment of professional competences for remote implementation of exercise sessions or physical activity programmes for pregnant and postpartum clients. The assessed competencies concerned: using the appropriate technological infrastructure, remote initial interview and gathering necessary information about participants, assessment of their exercise capacity and fitness levels, remote provision of 'live' exercise sessions, remote communication, building rapport and motivating participants to exercise regularly, remote monitoring and control of training progress, building interactions in a group of participants, taking care of the participants' safety and taking care of the exclusion of liability for accidents. For the self-assessment of professional competencies we used the 1-5 rating scale, where 1 meant 1 – 'very low'; 2 – 'low'; 3 – 'average'; 4 – 'high'; 5 – 'very high'. We also included the answer option 'N/A' for participants with no experience in working with pregnant and postpartum clients. We presented participants' answers to these questions Table 3.

Table 3. The results of the NEPPE training participants' self-assessment of their skills in remote provision of exercise sessions / physical activity programmes for pregnant or postpartum clients

The results of the NEPPE training participants' self-assessment of their skills in remote provision of exercise sessions / physical activity programmes for pregnant or postpartum clients (n = 199)								
	Variables (n, %)	**1**	**2**	**3**	**4**	**5**	**N/A**	**M**
1.	using the appropriate technological infrastructure (both electronic equipment and computer programmes and applications)	7; 4%	24; 12%	60; 30%	45; 23%	38; 19%	25; 13%	3.6
2.	remote initial interview and gathering necessary information about participants before starting the exercises	6; 3%	12; 6%	47; 24%	60; 30%	49; 25%	25; 13%	3.8
3.	remote carrying out of the basic assessment of exercise capacity and fitness levels of participants	9; 5%	22; 11%	53; 27%	52; 26%	36; 18%	27; 14%	3.5
4.	remote provision of 'live' exercise sessions (including ensuring the appropriate quality of data transfer, lighting, sound system, good visibility of the presented exercises, properly organising and arranging the place of exercises)	9; 5%	16; 8%	48; 24%	53; 27%	48; 24%	25; 13%	3.7
5.	remote communication, building rapport and motivating participants to exercise regularly (e.g. by phone or video calls, e-mails, text messages, social media)	3; 2%	16; 8%	34; 17%	60; 30%	63; 32%	23; 12%	3.9
6.	remote monitoring and control of training progress (including the use of specialised training applications)	7; 4%	25; 13%	54; 27%	48; 24%	42; 21%	23; 12%	3.5
7.	building interactions in a group of participants (including through social media, participant activation techniques during online meetings)	8; 4%	20; 10%	52; 26%	49; 25%	45; 23%	25; 13%	3.6
8.	taking care of the participants' safety	4; 2%	14; 7%	37; 19%	66; 33%	55; 28%	23; 12%	3.9
9.	taking care of the exclusion of liability for accidents	7; 4%	24; 12%	60; 30%	45; 23%	38; 19%	25; 13%	3.5
Total average of ratings for all variables								3.7
The 1-5 scale: 1 – very low; 2 – low; 3 – average; 4 – high; 5 – very high; N/A – an option used by participants with no experience in working with pregnant and postpartum clients; M: the mean score for an individual variable.								

The participants rated their competences for remote implementation of exercise sessions or physical activity programmes for pregnant and postpartum clients at an mean level of 3.7, i.e. between ‘average’ and ‘high’. Such high self-esteem may result from the characteristics of the surveyed people, i.e. exercise professionals interested in professional development in the field of remotely providing fitness services to these populations. It can be assumed that in the case of research on the general population of instructors, trainers, exercise specialists or physiotherapists, their self-assessment of competence in this area would be lower. About 13% of participants decided that the question did not apply to them, most likely due to the complete lack of experience in remote implementation of exercise sessions or physical activity programmes for pregnant and postpartum clients.

Surprisingly, participants rated as the highest (M = 3.9) their competences related to remote communication, building rapport and motivating participants to exercise regularly (e.g. by phone or video calls, e-mails, text messages, social media) and to taking care of the participants' safety. The lowest ratings (M = 3.5) were assigned to skills related to remote carrying out of the basic assessment of participants’ exercise capacity and fitness levels, remote monitoring and control of training progress and taking care of the exclusion of liability for accidents.

We also asked the NEPPE training participants an open question whether there was anything they wanted to add regarding their self-assessment of professional competences to remote provision of exercise sessions or physical activity programmes. The answers obtained largely coincided with the answers from the previous closed questions. Most participants showed an open attitude towards remote provision of fitness services for pregnant and postpartum clients. Some admitted that they had experience in remote conducting exercise sessions or physical activity programmes, but for other populations. They often emphasized the need to ensure the safety of clients during pregnancy and after childbirth. Other participants, despite the generally positive opinion about remote service provision, believed that some tasks should be performed face-to-face (e.g., interviewing or fitness assessments). Selected participants' answers are presented in the Table 4.

Table 4. Selected additional opinions of the NEPPE training participants regarding their professional competences in providing remote exercise sessions or physical activity programmes

Selected additional opinions of the NEPPE training participants regarding their professional competences in providing remote exercise sessions or physical activity programmes
'It should be ensured that the person receiving the online training is not alone at home.'
'Some forms of monitoring or assessments must be done face to face to ensure safety of mother and baby and the postpartum period.'
'I always prefer face to face sessions with clients.'
'Remotely training pregnant women would be more stressful for them than face-to-face training. Therefore, I believe the option 1 is in person, but online may be an alternative if option 1 is not possible.'
'I run remote exercise sessions/physical activity programmes, but I have never conducted them for pregnant women.'
'Although I have never conducted a remote session for pregnant or postpartum individuals, I do have experience with conducting sessions for individuals with chronic disease, cardiac risk and diabetes.'
'I am more for the face-to-face method, rather than remote, but I am open to challenges.'
'I always send a Waiver and Liability Questionnaire to all my online and in-person class participants.'
'I'm used to use remote training.'
'I have provided Pilates training online in preparation for childbirth and have found that it has been very helpful in keeping my students active, with many preferring to perform online for family management reasons. I had sessions with pregnant women and they turned out well. I have never tried this postpartum and would like to know more to be successful.'
'Remote coaching, there is an emphasis on education materials for self-monitoring of the individual. In these cases, the patient/client and the professional (me) must work together and maintain consistent communication for safety and programme progression.'
'Even though I have never worked remotely with pregnant women, I have experience conducting these types of personal sessions with regular clients and athletes.'

When analysing the above opinions, it should be taken into account that they were collected before the training. In the NEPPE project, our main goal was to prepare participants

to plan and implement exercise programmes for pregnant and postpartum clients. The module on the use of online tools was a supplementary module. Therefore, competences in this area were not verified at the end of the training. An interesting question is whether participants' opinions would be different after the training. In the context of analysing educational effectiveness, it would be worth examining whether the results of the self-assessment would be consistent with the objective assessment of the analysed competences made by an external assessor, and to what extent there would be an increase in knowledge and skills in the use of online tools after the training. These issues are certainly worth analysing in future editions of the NEPPE project. It is worth emphasizing that a few months after completing the NEPPE training, participants positively assessed its impact on their competence to remotely implement exercise programmes (Figure 4.). This encourages both continuing the project and conducting in-depth research on the effectiveness of our educational activities in the use of online tools.

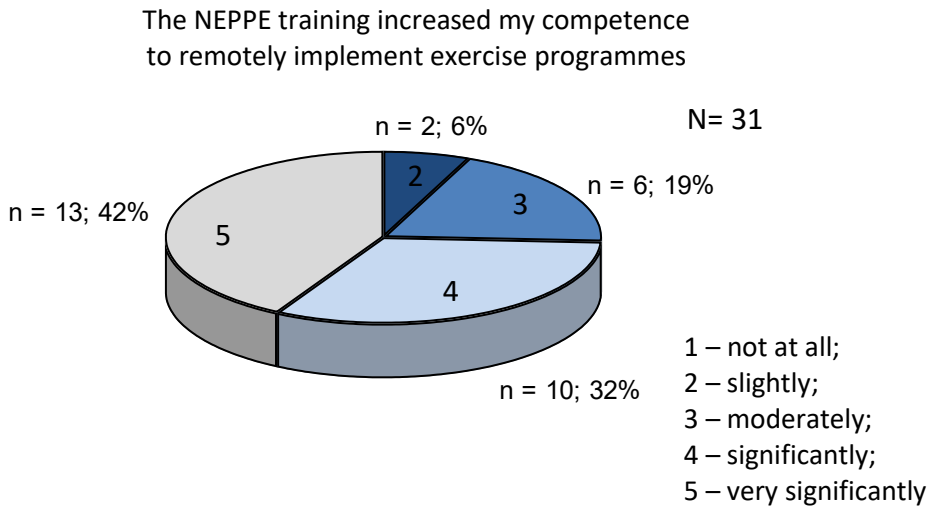

Figure 4. Participants' responses to the question whether the NEPPE training increased their competence to remotely implement exercise programmes after 5-12 months after completion the training

Recommendations regarding learning outcomes related to the use of online tools in the in the provision of physical activity programmes

Although the main goal of the NEPPE training was to prepare exercise professionals to work with pregnant and postpartum clients, the training participants' opinions and experiences were often based on work with other populations, including special and clinical populations. Therefore, it can be assumed that the learning outcomes and verification criteria defined for module 4 'Online tools' are universal and can be transferred to work with other populations of exercisers (Table 5). They were selected and modified for the needs of the project based on the 'Online provision of fitness services' LLL qualification, published by EuropeActive (11).

Based on the NEPPE project, we propose three main learning outcomes for preparing for work with special populations:

- Understands fundamental rules and tools in the online provision of fitness services for a given population;
- Understands the limitations and safety considerations related to the online provision of fitness services for a given population;
- Understands the basics of online marketing targeted at a given population of exercisers.

However, we emphasize that before starting training for exercise professionals in other specializations, the specificity of a given population should always be taken into account and, if necessary, the educational module proposed by us should be modified. For people whose job tasks mainly concern remote implementation of exercise programmes, we suggest confirming the full version of the 'Online provision of fitness services' qualification.

Table 5. Learning outcomes and verification criteria for the 'Online tools' Module

The 'Online tools' Module	
Learning outcomes – the learner:	**Assessment criteria – the learner:**
1. Understands fundamental rules and tools in the online provision of fitness services to a given population	1.1. Defines what the online provision of fitness services is; 1.2. Describes the potential of online fitness services to promote healthy lifestyle among current and future clients in a given population; 1.3. Describes the digital tools useful for own professional tasks within the scope of practice as an exercise professional working a given population;

	1.4. Describes how to use a specific online platform or other digital tools to design individualised training programmes for a given population and track their progress and achievements; 1.5. Conducts live training sessions and prepares pre-recorded training sessions for a given population using generally available online platforms (e.g. Facebook, Instagram, Zoom, Google Meet, MS Teams, YouTube, etc.), in accordance with the appropriate methodology and meeting the relevant technical standards (including good lighting, appropriate environment and background, good sound quality); 1.6. Describes online communication tools (e.g. video or audio calls, emails, messaging services, autoresponders, online check-ins, booking confirmation, social media community groups etc.).
2. Understands the limitations and safety considerations related to the online provision of fitness services to a given population	2.1. Describes risks for a given population related to the online provision of fitness services (e.g. related to incorrect exercise technique or intensity, inappropriate exercise environment, health condition limitations); 2.2. Explains the guidelines on how to ensure and monitor safety and effectiveness of fitness services delivered online (e.g. how the client should arrange a safe space to exercise at home, how to educate clients to correctly perform exercises and self-monitor their well-being); 2.3. Describes how to overcome the limitations of being not physically present with the client, utilises effective communication (e.g. adjusting teaching methods); 2.4. Describes exemplary disclaimer forms which should be obtained from a given population, prior to the provision of online fitness services and explains their importance and the rules for using them;
3. Understands the basics of internet marketing targeted at a given population of exercisers	3.1. Defines the term online marketing and describes its advantages as compared to traditional marketing; 3.2. Describes popular options for online advertising (e.g. text, display, banner, native, in-app, video, email, ads, affiliate links) and explains which of them are the most appropriate for the promotion of own fitness services, specific for targeted at a given population of exercisers; 3.1. Describes basic principles of online brand presence targeted at a given population of exercisers (e.g. how to create a clear description of the fitness services, define a clear and detailed product offering, how to match the business marketing with the correct online channels, prepare consistent content for all

	chosen online channels, how to create an effective strategy for consistent branding or co-branding of fitness services); 3.2. Describes how to analyse online market (using e.g. SWOT/PEST analysis), differentiates the target market and determines the specific online business niche; 3.3. Describes how to create online products to meet the needs of a given population of exercisers, to clearly provide unique selling points (USP's) and develops a suitable pricing strategy; 3.4. Describes the fundamental guidelines for managing an active professional website, targeted at a given population of exercisers

Summary

Above, we presented recommendations on the use of online tools in two areas of the physical activity sector. First, we focused on solutions and tools that can support the online implementation of CPD training for exercise professionals. Based on three editions of the NEPPE training, we discussed the remote recruitment process, implementation of classes, verification of acquired knowledge and skills, and evaluation tools. It should be emphasized that in the anonymous final evaluation, the vast majority of NEPPE training graduates admitted that the remote training was effective and that they obtained appropriate knowledge and practical skills. Moreover, a few months after completing the training, most of them were convinced that the NEPPE training increased their competence to remotely implement exercise programmes.

Secondly, we presented the opinions of NEPPE participants regarding remote fitness services and their self-assessment of competences in this area. NEPPE participants believed that basic content for remote provision of exercise sessions or physical activity programmes should be included in the general training of exercise professionals and that the remote physical activity services will develop dynamically, due to their widespread availability. They often emphasized the need to ensure security while carrying out their professional tasks remotely. Based on collected opinions and analysis of available educational resources we proposed learning outcomes and verification criteria related to the use of online tools in the remote implementation of physical activity and exercise programmes.

It should be emphasized that in the NEPPE project, the prerequisite for joining the training was having the qualifications of an exercise professional (e.g. personal trainer, group fitness instructor, Pilates teacher). For that reason, our proposals for verifying learning outcomes do not include monitoring and control of the multi-stage training process at clients. Therefore, for courses aimed at obtaining qualifications in the so-called core disciplines (such as the above-mentioned qualifications of a personal trainer or group fitness instructor), the tools should be supplemented. The positive feedback we received from graduates and their high grades in both theoretical and practical final tests confirmed the effectiveness of the solutions we proposed. Based on training related to exercise during pregnancy and after childbirth, we have developed recommendations for the implementation of CPD courses for exercise professionals, which can be transferred to other specializations. Certainly, their adequacy to other specializations is worth further analysis.

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List of figures

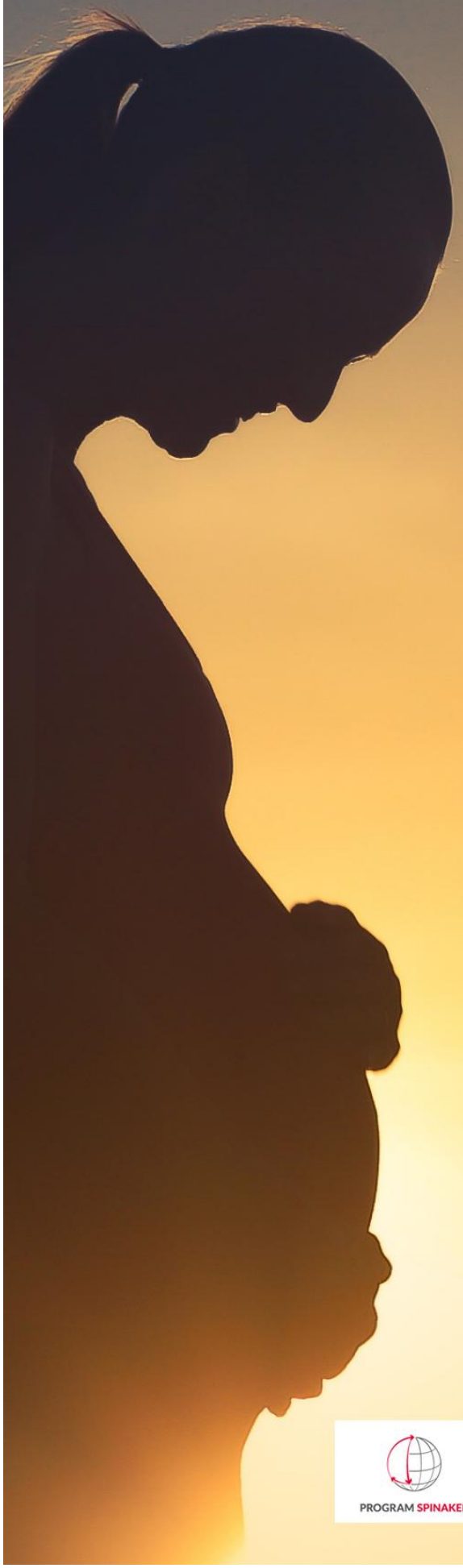
Figure 1. Participants' responses to the question whether the online provision of the NEPPE training was effective 8
Figure 2. Participants' responses to the question whether during the NEPPE training they gained adequate knowledge on how to work with pregnant or postpartum clients 9
Figure 3. Participants' responses to the question whether during the NEPPE training they gained practical skills related to planning and implementing exercise programmes for pregnant and postpartum clients 9
Figure 4. Participants' responses to the question whether the NEPPE training increased their competence to remotely implement exercise programmes after 5-12 months after completion the training 36

List of tables

Table 1. Point ranges determining the categories of specialist knowledge in the NEPPE initial test 15
Table 2. The opinions of the NEPPE training participants regarding the remote provision of exercise sessions / physical activity programmes for pregnant and postpartum clients 31
Table 3. The results of the NEPPE training participants' self-assessment of their skills in remote provision of exercise sessions / physical activity programmes for pregnant or postpartum clients 33
Table 4. Selected additional opinions of the NEPPE training participants regarding their professional competences in providing remote exercise sessions or physical activity programmes 35
Table 5. Learning outcomes and verification criteria for the 'Online tools' Module 37

List of templates

Template 1. Template for interview assessment in the remote recruitment process for exercise professionals CPD training 11
Template 2. Template for designing a 6-8 week exercise programme 17
Template 3. Assessment form for the exercise programme design 20
Template 4. Assessment form for conducting an exercise session (video material) 24
Template 5. Template for evaluating remote training for exercise professionals 26
Template 6. A template for assessing the impact of remote training on the career development of exercise professionals 28



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