



PA4AGE

Promotion of physical activity for the third age

Project Result 1: Result Report

Author: Münster University

Project number:

This project has been funded with support from the European Union. This publication reflects the views only of the author, and the Commission nor the National Agency cannot be held responsible for any use which may be made of the information contained therein.

Project Result 1: Result Report

1. Literature Review

Although the profound influence of exercise upon health applies throughout the entire lifespan, the common axiom that "Exercise is Medicine" is of particular relevance among older people [1,2]. "Exercise is medicine", first stated by the American College of Sports Medicine in 2007, (<https://www.exerciseismedicine.org>), has become a global health initiative, especially in relation to healthy aging.

Among the rapidly growing population of older people, the benefits of exercise are diverse, spanning numerous domains of physical health and well-being, medical morbidity and mortality, functional, cognitive, affective and social status, as well as a wider influence on health care utilization and expenditure. For example, exercise among older people has been shown to be associated with a reduction in obesity, coronary heart disease and type II diabetes mellitus [3,4], reduced prevalence of cognitive impairment [5] and depression [6], and is a potentially modifiable risk factor in the prevention of dementia. [7]. Exercise among older people repeatedly shows a consistent and independent association with decreased mortality [8], and even among the oldest old, initiating exercise was found to be associated with preserved function, reduced hospital admissions, and increased longevity [9-11]. Conversely, sedentary behavior is associated with increased risk of chronic and disabling diseases [12]. At the molecular level, exercise was found, for example, to positively affect markers of cellular immunosenescence in elderly persons [13].

Subsequently, in 2020 the World Health Organization (WHO) published the new evidence-based guidelines for exercise among adults aged ≥ 65 , comprising 150–300 min of moderate-intensity, or 75–150 min of vigorous-intensity physical activity, per week, combined with \geq three times a week of multicomponent physical activity that emphasizes functional balance and strength training at moderate or greater intensity [14]. These guidelines were further specified by an expert group in 2021 [15].

And yet, despite the known health benefits associated with physical activity, and the easily accessible recommended guidelines, older adults remain highly inactive [16-18], being in fact the most sedentary segment of society [19].

In the 2015 Report on Ageing and Health, the WHO pointed out the important role of physical activity in slowing down age-related deterioration in functional ability, and develop and maintain physical and

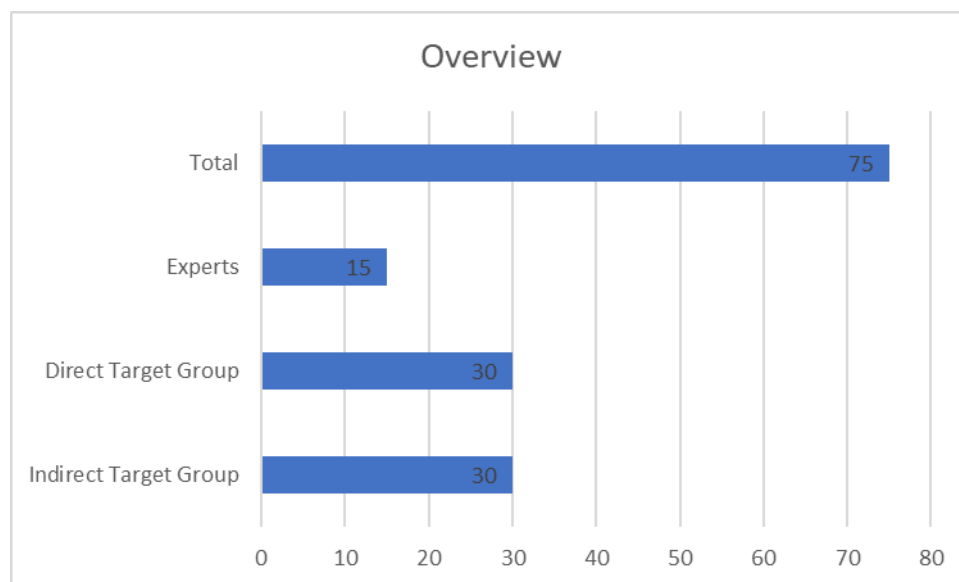
mental intrinsic capacity in older adults [20]. According to Taylor and colleagues "This new conceptual approach acknowledges the functional diversity among older adults and focuses on health and capability rather than chronological age. In this way, physical activity is a key enabler of work, social contribution, autonomy and dignity as well as health in older age." [21 p. 2]. In October 2020, the WHO launched the Decade of Healthy Ageing 2021– 2030 in response to rapid, global population ageing [22]. Importantly, physical activity has been globally recognized as important for supporting healthy ageing.

Based on the above, the aim of our project is to promote physical activity in advanced age in the partners' countries. We will first identify trends of, including barriers to physical activity in old age in these countries and will offer a platform of information and guidelines to physical activity for older adults.¹

2. Statistics and Analysis

2.1 Sociodemographic Data

In total, N= 75 participants (M=57,58 years old, SD=17,84) were interviewed during the project result 1. They either took part in an interview (53%) or a focus group (47%). All different target groups were reached.



¹ References in the appendix 4

Of the experts, 60% were female, 33% were male, and 7% did not specify their gender. In the indirect target group, 77% were female, 20% male and 3% did not specify their gender. Similar figures can be found for the direct target group. 73% female and 27% male subjects took part in the survey.

More detailed information concerning sociodemographic data can be extracted from the power point presentation that is attached to this document (cf. appendix 3).

2.2 IPAQ

N = 26 participants completed the short form of the IPAQ questionnaire. The IPAQ questionnaire assesses the health-related physical activity level of the participants (vigorous, moderate and walking activity) as well as their seated activities. Some participants did not answer all questions, they have been removed for those and only included for the other questions which they answered correctly. Referring to the seated activity, a mean value of M = 5.57 hours per day (SD=2.64) has been assessed. Concerning the time spent in walking, the participants were on average active on M=5.69 (SD=1.85) with an average amount of M=98,8 minutes (SD=139.9) per day. Moderate activities were performed on an average of M=3.94 days (SD=2.29) with an average amount of M=117.2 minutes (SD=144.67) per day. Lastly, the participants performed vigorous physical activity with a mean of M=1.23 days and an average amount of M=51.14 minutes (SD=100.97) per day.²

	N	Min	Max	Mean	σ
Sitting time	25	2	12	5,57	2,64
Days:walked at least 10min at a time	26	2	7	5,69	1,85
Time: walked at least 10 min at a time	24	10	640	98,75	139,89
Days: moderate physical activity	26	0	7	3,94	2,29
Time: moderate physical activity	26	0	640	117,19	144,67
Days: heavy physical activity	26	0	7	1,23	2,08
Time: heavy physical activity	26	0	300	51,13	100,97

3. Interviews– Key Aspects

² Cf. appendix 1

Physical Activity/Health

According to the feedback from all partners, group exercise was the most commonly mentioned. Furthermore, face-to-face sessions and easy group sessions that are around the neighborhood were also mentioned by most participants. Having personalized sessions was also important since most elderly would not exercise with the risk of hurting themselves, and some even mentioned that they would exercise only based on professional advice.

Attitude and Conditions of entry

The attitude of participants towards sports varied from not wanting to do it to what can I do. Some replied that they already spend lots of time doing house chores or gardening at home, therefore, they did not feel the need to exercise. While some showed the helpless or clueless attitude because they did not know what options they have. Part of the participants also showed the lack of confidence. “I do not think I can start now”, said by one participant.

Regarding the Learning Platform

Easy-to-use is the number one priority when it comes to the learning platform. “Cannot image using this platform without help”, said by one participant. Therefore, having instant technical support is the key that whether elderly would use this platform or not. Furthermore, the platform should also be adaptable and flexible because everyone has different schedules, goals, and health statuses. In addition to being adaptable, participants also mentioned that it motivated them more if the exercises were demonstrated by people from their age group, so that they would connect to the sessions more.

4. Conclusion

Learning platform

Regarding the learning platform, making it open and accessible to everyone who is interested is very crucial. By achieving that, easy-to-use is one of the top priorities the learning platform needs to focus on. The orientation and registration on the learning platform should be very clear and simple, and through the easy instruction of the platform, users should know what materials they need, how the offers are structured, and how to set up lessons.

App

For the app, personalized and adaptable to every user is important, in order to achieve this, we could create a survey to understand their needs and health history beforehand, so that the app could display the information and lessons that best match their condition. To keep users motivated, creating training entries in the calendar when they choose the lessons and giving motivational messages and notifications could be very helpful. Furthermore, because people have different exercise experiences, the lessons should also have different degrees of intensity for people to choose from.

Lacking confidence is one of the attitudes participants had towards exercise. Therefore, adding the community feature could be a potential solution. For example, creating a forum to discuss and talk about the training sessions and to exchange their knowledge and experiences, holding a competition to encourage them to participate more sessions, and having frequent meetups in the local park or cafe to boost their relationships.

It is undeniably important for the app to have a clear and simple user interface and technical support. Instant support by human beings might be unpractical but is feasible from a chat robot which could guide them through the whole journey and assist them when it's needed.

Based on the feedback, making the training lessons hybrid is the most doable way. Those who want to exercise together could meet up, while those who want to stay in could also complete the lessons alone.

Appendix 1

Methodological Plan

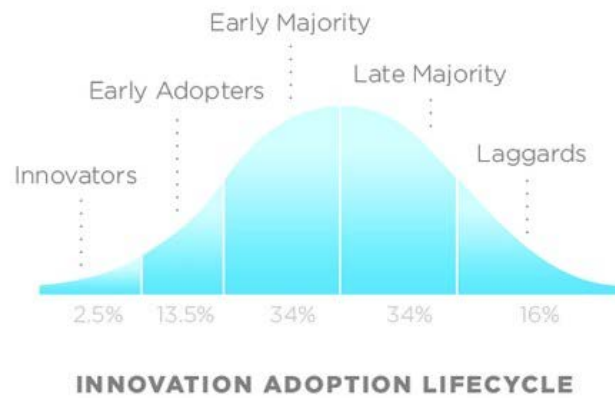


Abbildung 1: Everett M Rogers, *Diffusion of Innovations* (1962), resource URL: <https://www.interaction-design.org/literature/article/understanding-early-adopters-and-customer-adoption-patterns>

PA4Age

PROMOTION OF PHYSICAL ACTIVITY FOR THE THIRD AGE

**PR1 Guidelines for the analysis of the requirements and
the definition of the training content**

R1.T1 Methodological Plan (partner and national level)

Michael Brach, Ellen Bentlage, Samira Jaske

Project number:



With the support of the Erasmus+
programme of the European Union

This project has been funded with support from the European Union. This publication reflects the views only of the author, and the Commission nor the National Agency cannot be held responsible for any use which may be made of the information contained therein.

Content

1	Introduction	6
1.1	Study parts and goals	6
1.2	Participants and topics for interviews and focus group	6
1.3	IPAQ-Elderly – International physical activity questionnaire	7
2	Work organisation and report	7
2.1	Recommended working sequence.....	7
2.2	Reporting the results	8
3	Guidelines.....	8
3.1	Desk Research (R1.T2, R1.T3)	8
3.2	Interviews and Focus group (R1.T4)	8
3.3	Professionals – Interview guideline	11
3.4	RECIPIENTS– Interview guideline	13
4	Appendix	15
4.1	IPAQ-E	15
4.2	Overview Desk Research.....	17

1 Introduction

This document (methodological plan) describes the activities to be carried out by each partner in the framework of the project result 1, "Guidelines for the analysis of requirements and the definition of training content".

Part of this outcome is the analysis of education and training requirements based on theories of behaviour change, as well as the comparative analysis of the role and place of PA in the national/project countries and Europe. Qualitative semi-structured interviews will also be conducted.

Related documents in the PA4AGE nextcloud are:

- "Note template": a document including suggested questions and topics for (1) adaptation by the partners, (2) taking notes during conduction of interviews and focus group, and also (3) for analysis and summary. Use at your discretion.
- "Report sociodemographic data": a sheet to be filled during the interview and focus group (one sheet per participant) and to be sent to to the coordinator (MU)
- Report template: a document for reporting summarised results and conclusions from each partner to the coordinator (MU). One document for all interviews/focus groups.

1.1 Study parts and goals

Each study consists of three parts:

- R1.T2 Analysis of education and training requirements based on theories of behaviour change
- R1.T3 Comparative analysis of the role and place of PA in the national/project countries and Europe
- R1.T4 Qualitative semi-structured interviews

All three parts have the same goals, i.e. collecting information for

- preparing the platform: content (R2) as well as technology/design (R3) have to be adapted to professionals, caregivers as well as people in their third age
- contributing to sustainability (dissemination and exploitation),R4

1.2 Participants and topics for interviews and focus group

Generally, the study should include (a) the target groups: adults from different professional profiles, such as physical education teachers, sports educators or also active ageing and organizations, people in the third age and their carers who want to know more about physical activity in old age or who want to integrate physical activity more into their everyday life and (b) other stakeholders. A total number of at least 10 persons from the direct target group, 10 persons

from the indirect target group and 5 persons from physical activity high-quality experts has to be achieved.

Issues include

- Socio-demographic data
- Physical activity and exercise in everyday life of the conversation partner
- Motivation, attitude and conditions of entry to physical activity and to technology assistance

Each project partner is free to set the exact number and type of participants for the interviews and focus group above then minimum of participants. Each project partner is also free to adapt and modify (and should do) the guidelines and questions to be discussed. There are three aspects, which may assist the process of recruitment and adaption:

(1) Each partner should ensure that the project results of the project are beneficial for the own work.

(2) For we have large and diverse target groups, we should identify open-minded and interested people for the preparation phases of PR1/2/3.

1.3 IPAQ-Elderly – International physical activity questionnaire

This questionnaire includes four questions about how often and how long physical activity has been done during the last seven days. We would like to apply the IPAQ-E³¹ to all conversation partners (professionals, recipients, other stakeholders) during interviews and focus groups.

We added the English version of the IPAQ-E to the attachments of this document. On www.ipaq.ki.se, you should find the IPAQ-E in your own language (download section). There is also a lot of additional information on this questionnaire.

2 Work organisation and report

2.1 Recommended working sequence

1. Start with R1.T2 Analysis of education and training requirements and R1.T3 Comparative analysis of the role and place of PA in the national/project countries and Europe context. Write the partial report (report template) and identify adaptations of the interview partners and the interview guideline.
2. Conduct the interviews. Fill in the sociodemographic data template (one sheet per participant). Summarize the results (note template).

³Ainsworth, B. E., et al. (2000). "Comparison of three methods for measuring the time spent in physical activity." *Med Sci Sports Exerc* 32: S457-64, and www.ipaq.ki.se (access 2019-04-05)

3. Complete the report (report template) including consequences for your own organisation and for the other PR of the project.

2.2 Reporting the results

The major part of the report will be filled during the interviews (IPAQ-E questions: no changes needed, only note the participant number; report sociodemographic data: directly note in English, otherwise please translate). For the topical results, please use the report template to be provided by MU. We consider the following structure:

1. Desk research: attitude, motives, barriers, role and place of PA, ... (bullet points or table)
2. Interviews: results summary. We recommend that you summarize both into one report. Change the template, if necessary, e.g. you changed the discussion points.
3. Conclusions:
 - (a) for your own pilots, for your own organisation
 - (b) discussion points for the other PR (content and design)
 - (c) Potentials for exploitation and sustainability in the own country

Each section may be about one page, so the report includes about 4 pages.
Please send also scans of the IPAQ-E forms. Note the participant number on the form.

3 Guidelines

3.1 Desk Research (R1.T2, R1.T3)

This part is not to be asked explicitly in the interviews, but is to be done through research. In part, some of the sub-items also occur in the interviews. However, they are to be elaborated more strongly here. The table with the exact overview can be found in the appendix.

1. Education and training needs: motives, attitudes, barriers, facilitators and starting conditions for (regular) sport.
2. Role of PA: Sports activity of the total population, Number of people who do sport for at least 2.5 hours per week (sorted by year) – according to WHO, difference women and men, people without sporting activity, most popular sports, age structure of the population
3. Place of PA: Form of organization of the sports activity and infrastructure/public initiatives in each country that facilitate PA

3.2 Interviews and Focus group (R1.T4)

Semi-Structured Interviews

- the guideline consists of some carefully arranged questions to make sure that all important/intended areas are covered (semi-structured)
- some questions are much less explicitly and more openly formulated to give the interview partner the opportunity to bring up some interesting facts (narrative character)

Focus Groups

- you can also conduct the interviews in focus groups; to do this, simply conduct the interview with several people at the same time
 - Decide for yourselves what and how much you want to do in individual interviews or in focus groups.
- same subject areas as in the semi-structured interviews
- advantage: the participants' answers will set incentives for the other panellists; statements can easily be compared in a group discussion; interesting inconsistencies may pop up and can be questioned by the interviewer right away
- you will get lots of data during those sessions so please take a partner to make sure you get all important information for the discussion protocol
- try to ask just the main questions of each category (s. Guideline on p. 2) and use the more detailed questions only in case there is no conversation coming up itself

Practical hints for both methodological approaches

- Use the note template or this guideline for adaptation of questions and topics
- Prepare one copy of the IPAQ-E sheet and one pencil for each participant in the interviews and focus group
- Prepare one copy of the "report socio-demographic data" per participant
- The project introduction (italics on grey background) is for reading to the participant(s)
- For later analysis, a separate person (not the interviewer / moderator) should take notes of the interview / focus group. Alternatively, you may record the talk (e.g., using a smartphone). In this case, you have to ask each interview partner for consent before. Inform them how the audio record is saved and when it will be deleted.
- In order to save efforts, the "report socio-demographic data" should be filled directly into the "report socialdemographic data" (one sheet per participant). Also the IPAQ-E-questions should be filled during the interview / focus group.

- Use the note template for analysis and summary. Put the main points and your conclusions into the report template.
- After all, send the following documents to MU
 - 25 reports socialdemographic data (one per participant)
 - 25 IPAQ-E sheets (one per participant)
 - 1 report template

3.3 Professionals – Interview guideline

Introduction:

In the PA4Age project, we want to encourage older people to become physically active with the aim of changing their attitudes. We want to achieve this by encouraging them to participate in physical activity in any form and intensity and under any physical condition in order to improve their quality of life in physical, mental and social terms.

To do this, we want to initiate and develop a learning platform aimed at adults from different professional profiles involved in promoting active ageing for older people.

Socio-demographic Data of the professional	<ul style="list-style-type: none"> • Age – Year of birth • Gender • Profession <ul style="list-style-type: none"> ○ physical education teachers ○ sports educators ○ organisation (active ageing) ○ ... • Residence of institution • Please answer the four IPAQ-E questions regarding yourself (extra sheet)
Physical Activity and Health	
	<ul style="list-style-type: none"> • Please describe the (daily) physical activity of your recipients (what exactly/for how long/how often/intensive?) • Do you think that your recipients are physically fit according to their age etc.? (How do you know?)
Attitude and Conditions of entry	
<ul style="list-style-type: none"> • What are your experiences of exercise with older people in general • Do your recipients join any kind of exercise group or meet other people regularly for some physical activity or exercise? 	

Yes, ...	<ul style="list-style-type: none"> • Why did they start with that activity?/What made them keep going? (motives/motivation/facilitators)? • How did they get to know about it? (recruitment/how to reach) • What were the entry conditions (on medical advice, ...)? • What is their opinion in regular exercise? (attitude)
No, ...	<ul style="list-style-type: none"> • Why are they not doing any sports group activities? What are the possible barriers? • Under what circumstances do you think they would participate?
Final Questions Regarding the Learning Platform	
<ul style="list-style-type: none"> • Do you think PA/exercise has an (positive) impact on people? How? In what sense? • Regarding the idea of the learning platform: Can you imagine to use that offer? (to get ideas and guidance) • How do you think about the level of acceptance of your recipients? • Do you have any wishes/ideas regarding the platform, or the exercise offers/what might be a good addition to the existing offers? • What needs to be assured to make caregivers and recipients join those kinds of offers? • Do you have any further questions or even tips/comments in mind? 	
<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....(Space for Additional Questions)</p>	
<p>Thank you!</p> <p>-End of Interview/Focus Group-</p>	

3.4 RECIPIENTS– Interview guideline

Introduction:

With the PA4Age project, we want to initiate and build a learning platform to reach professionals, caregivers as well as people in their third age (regardless of their health status and level of independence) who need to know more about incorporating physical activity into their daily routine or need motivation to give up their passive or sedentary lifestyle.

We want to encourage older people to become physically active with the aim of changing their attitudes. Our aim is to achieve this by encouraging them to participate in physical activity in any form and intensity and under any physical condition in order to improve their quality of life physically, mentally and socially.

To get an idea of what might be helpful and necessary, I have some questions...

Socio-demographic Data	<ul style="list-style-type: none"> • Age • Gender • Status (married, single,...) • Residence (town, small-town, village) • Former profession/qualification • optional: Please answer the four IPAQ questions (extra sheet)
Physical activity	
Introductory Question	<ul style="list-style-type: none"> • Do you join any kind of exercise group or meet other people regularly for some physical activity or exercise? Do you have any preference in group or individual training? • Are you physically active on your own
Yes, ...	<ul style="list-style-type: none"> • Why did you start with that activity?/What made you keep it ongoing? (motives/motivation)? • How did you get to know about that offer? (recruitment/how to reach) • What were the entry conditions (on medical advice, ...)?

	<ul style="list-style-type: none"> • What is your opinion in regular exercise?
No, ...	<ul style="list-style-type: none"> • Why are you not doing any exercise group activities? • Under what circumstances would you do it? (Barriers)
Sport Biography	<ul style="list-style-type: none"> • Did you do any specific sport or exercises in the past? (Experiences? Why did you stop?)
Daily Physical Activity and Health	
Daily Activity	<ul style="list-style-type: none"> • Would you please roughly describe your typical daily routine? <ul style="list-style-type: none"> ▪ How would you describe your daily physical activity? (what exactly/for how long/how often/intensive?) • How much time you spend in watching TV, sitting, working on the computer, lying down, ... during the day
Health	<ul style="list-style-type: none"> • Health: How would you rate your own current health status? Please rate 1 (very bad) to 10 (very good).
Final Questions Regarding the Learning Platform	
<ul style="list-style-type: none"> • Regarding the idea of the e-learning platform: Can you imagine that a computer, tablet or smartphone could assist you in exercising (to get ideas and guidance for physical activity and exercise)? Maybe together with your caregiver or family? • Do you have any experiences with those kinds of offer? • What kind of offer would you like in the future/any wishes regarding exercise offer? • What needs to be assured to make you join those kinds of offer? • Do you have any further questions or even tips/comments in mind? 	
<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....(Space for Additional Questions)</p>	
<p>Thank you!</p> <p>-End of Interview/Focus Group-</p>	

4 Appendix

4.1 IPAQ-E

The following two figures are from the IPAQ Website, at www.ipaq.ki.se.

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

Name..... **Sex (F/M)** **Age**.....yrs

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives.

The questions will ask you about the time you spent being physically active in the last 7 days.

Please answer each question even if you do not consider yourself to be an active person.

To describe the intensity of the physical activity, two terms (Moderate and Vigorous) are used:

Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal.

Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal.

Thank you for participating!

1. The first question is about the time you spent sitting during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

During the last 7 days, how much time did you spend sitting during a day?

_____ hours ____ minutes

- 2 Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you might do solely for recreation, sport, exercise, or leisure.

During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

_____ Days ⇒ How much time did you usually spend walking on
one of those days?
or
 No day _____ hours ____ minutes

3. During the last 7 days, on how many days did you do moderate physical activities like gardening, cleaning, bicycling at a regular pace, swimming or other fitness activities.

Think *only* about those physical activities that you did for at least 10 minutes at a time. Do not include walking.

_____ Days ⇒ How much time did you usually spend doing
moderate physical activities on one of those days?
or
 No day _____ hours ____ minutes

4. During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, heavier garden or construction work, chopping woods, aerobics, jogging/running or fast bicycling?

Think *only* about those physical activities that you did for at least 10 minutes at a time.

_____ Days ⇒ How much time did you usually spend doing
vigorous physical activities on one of those days?
or
 No day _____ hours ____ minutes

4.2 Overview Desk Research

T2	T3	Desk research
Analysis of education and training requirements: Based upon Behaviour Change Theories	Comparative analysis of role + place of PA in National –bw project countries–European	
- Motives to do sport		X
- Attitude of older persons to do sport regularly		X
- Barriers		X
- Under what conditions would you start with sport? (Starting conditions)		X
- Support measures for regular exercise Facilitators		X
	- Age structure of the population	X
	- Number of people who do sport for at least 2.5 hours per week (sorted by year) – according to WHO	X
	- Most popular sports	X
	- Proportion of people without sporting activity/ without everyday exercise in per cent	X
	- Sports activity of the entire population	X
	- Sport activity - difference women and men in the different ages (younger/older olders)	X
	- Form of organization of the sports activity + infrastructure/public initiatives in each country that facilitate PA	X

Appendix 2

Presentation: TPM1 Patras



TPM1 - PA4AGE

PR1 - Guidelines



living.knowledge

Freiraum für Sekundärlogo(s) / Name
des Fachbereichs, Instituts oder SFB:



Hier steht der Titel der Präsentation

PR1 - Results

1. Statistics & Analysis
 - a. Sociodemographic Data
 - b. IPAQ-E
2. Interviews & Focus Group
 - a. Physical Activity and Health
 - b. Attitude and Conditions of entry
 - c. Regarding the Learning Platform
3. Conclusions
4. Open Issues & Discussion Points

Name: der Referentin / des Referenten

2

Statistics & Analysis

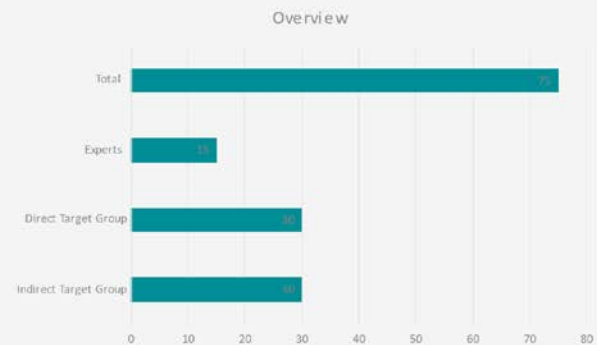
Name: der Referentin / des Referenten

3

Sociodemographic Data - Overview

- in total: N=75

	Total	%
Indirect Target Group	30	40%
Direct Target Group	30	40%
Experts	15	20%
Total	75	100%



Name: der Referentin / des Referenten

4

Sociodemographic Data - Gender

Experts

	Frequency	%
Female	9	60%
Male	5	33%
Gender not specified	1	7%
Total	15	100%

indirect Target Group

	Frequency	%
Female	23	77%
Male	6	20%
Gender not specified	1	3%
Total	30	100%

Name: der Referentin / des Referenten

5

Sociodemographic Data - Gender

Direct Target Group

	Frequency	%
Female	22	73%
Male	8	27%
Gender not specified	0	0%
Total	30	100%

Name: der Referentin / des Referenten

6

Sociodemographic Data – Age distribution

All participants:

Min: 24

Max: 89

Mean: 57,58666667 ± 17,84009965

	N	Min	Max	Mean	σ
Indirect Target Group	30	56	89	73,6666667	8,22327321
Direct Target Group	30	24	76	46,9666667	14,8536939
Experts	15	26	70	46,6666667	12,3648247

Name: der Referentin / des Referenten

7

IPAQ-E

	N	Min	Max	Mean	σ
Sitting time	25	2	12	5,57	2,64
Days: walked at least 10min at a time	26	2	7	5,69	1,85
Time: walked at least 10 min at a time	24	10	640	98,75	139,89
Days: moderate physical activity	26	0	7	3,94	2,29
Time: moderate physical activity	26	0	640	117,19	144,67
Days: heavy physical activity	26	0	7	1,23	2,08
Time: heavy physical activity	26	0	300	51,13	100,97

Name: der Referentin / des Referenten

8

Interview & Focus Group

Physical Activity and Health

- Group exercise
 - face-to-face sessions
 - group/easyexercise around the neighborhood
- Personalized
 - They don't want to risk hurting themselves
 - Only based on professional advices

"I'm a bit afraid of falling or having any kind of injuries during the exercising"

Attitude and Conditions of entry

- Attitudes towards sport vary from **not wanting to do it** to **what can I do**
- Lack of confidence

"I do not think I can start now"

Regarding the Learning Platform

- Easy-to-use
 - Technical support
- "Cannot image using this platform without helps"
- Adaptable
 - Goal-setting
 - Exercises demonstrated by people from the same age group

Conclusions

Learning Platform

- > open and accessible by all
- > easy registration
- > easy orientation: if I want to see only one part of the information, I don't have to go through everything
- > safety measures
- > What materials do I need, how is the offer structured, how do I set up a lesson?

App

Personalized & Adaptable

- > A survey to understand individual health, status and goals
- > Create training plan
- > Memories, motivational messages
- > various degrees of difficulty

Lack of confidence

- > Community feature (e. Forum, frequent meetup, competition)
- > send each other results, Share training

App

Easy-to-use & Technical support

- > Clear instructions and instant support from a chat robot
- > very simple interface
- > Explanation of what which button is for and how to get where
- > short-term goals

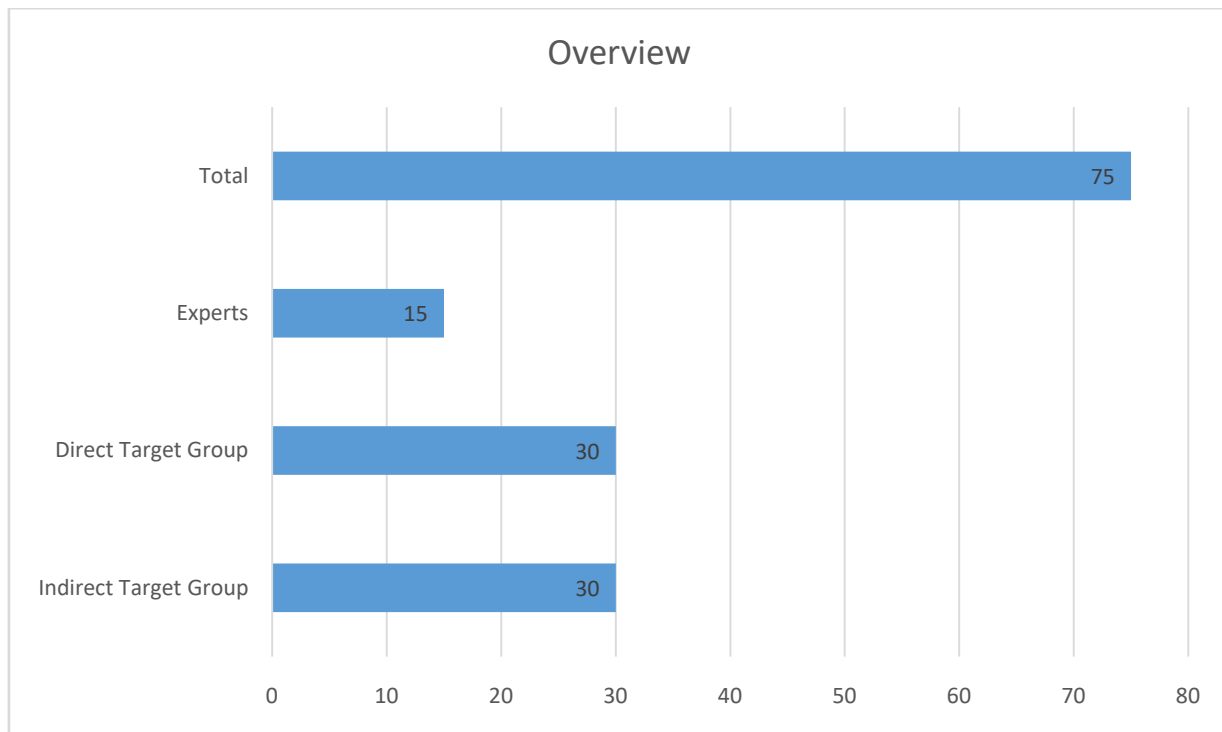
Group exercise -> Hybrid

Open Issues & Discussion Points

Appendix 3

Sociodemographic Data

	Total	%
Indirect Target Group	30	40%
Direct Target Group	30	40%
Experts	15	20%
Total	75	100%



Gender Experts	Frequency	%
Female	9	60%
Male	5	33%
Gender not specified	1	7%
Total	15	100%

Gender Indirect Target Group	Frequency	%
Female	23	77%
Male	6	20%
Gender not specified	1	3%
Total	30	100%

Gender Direct Target Group	Frequency	%
Female	22	73%
Male	8	27%
Gender not specified	0	0%
Total	30	100%

Age distribution

All participants:

Min: 24

Max: 89

Mean: 57,58666667 ± 17,84009965

	N	Min	Max	Mean	σ
Indirect Target Group	30	56	89	73,66666667	8,22327321
Direct Target Group	30	24	76	46,96666667	14,8536939
Experts	15	26	70	46,66666667	12,3648247

Comparison of gender between the three organizations

		FRODIZO	ISRAA	WWU
Experts	female	1	3	5
	male	4	1	0
	gender not specified	0	1	0
Direct Target Group	female	5	8	9
	male	5	2	1
	gender not specified	0	0	0
Indirect Target Group	female	6	9	8
	male	4	0	2
	gender not specified	0	1	0

Comparison of age between the three organizations

		FRODIZO	ISRAA	WWU
Experts	N	5	5	5
	Min	30	31	26
	Max	51	70	58
	Mean	46	50,8	43,2
	σ	8,02496106	12,6712272	14,2884569
Direct Target Group	N	10	10	10
	Min	42	24	24
	Max	76	57	65
	Mean	56,2	37,2	47,5
	σ	12,4482931	10,5905618	14,623611
Indirect Target Group	N	10	10	10
	Min	65	65	56
	Max	79	77	89
	Mean	71,4	70,3	79,3
	σ	4,92341345	4,3829214	10,5456152

Appendix 3

References from the Literature Review

1. Daskalopoulou C, Stubbs B, Kralj C, Koukounarid A, Prince M, Prina AM. (2017). Physical activity and healthy ageing: A systematic review and meta-analysis of longitudinal cohort studies. *Ageing Res Rev.* 38:6-17.
2. Nagamatsu LN, Flicker L, Kramer AF, Voss MW, Erickson KI, Hsu CL, et al. (2014). Exercise is medicine, for the body and the brain. *Br J Sports Med.* 48(12):943-944.
3. Reiner M, Niermann C, Jekauc D, Woll A. (2013). Long-term health benefits of physical activity – a systematic review of longitudinal studies *BMC Public Health.* 13:813.
4. Stessman J, Jacobs JM. (2014). Physical activity, diabetes mellitus and longevity. *J Am Geriatr Soc.* 62(7):1329-1334.
5. Paillard T. (2015). [Preventive effects of regular physical exercise against cognitive decline and the risk of dementia with age advancement.](#) *Sports Med Open.* 1(1):20.
6. Loprinzi PD. (2013). Objectively measured light and moderate-to-vigorous physical activity is associated with lower depression levels among older US adults. *Aging Ment Health* 17(7):801-805.
7. Livingston G, Sommerlad A, Orgeta V, Costafreda SG, Huntley J, Ames D, et al. (2017). The Lancet International Commission on Dementia. *Prevention and Care Lancet* 1-129.
8. Arem H, Moore SC, Patel A, Hartge P, Berrington de Gonzalez A, et al. (2015). [Leisure time physical activity and mortality: a detailed pooled analysis of the dose-response relationship.](#) *JAMA Intern Med.* 175(6):959-67.
9. Stessman J, Hammerman-Rozenberg R, Cohen A, Ein-Mor E, Jacobs JM. (2009). Physical activity, function, and longevity among the very old. *Arch Intern Med.* 169: 1476-1483.
10. Rizzuto D, Orsini N, Qiu C, Wang HX, Fratiglioni. (2012). Lifestyle, social factors, and survival after age 75: population based study. *BMJ.* 29;345:e5568.
doi:10.1136/bmj.e5568.

11. Jacobs J M, Rottenberg Y, Cohen A, Stessman J. (2014). Physical activity and health service utilization among older people. *JAMDA*.14:125-129.
12. Patterson R, McNamara E, Tainio M, de Sa TH, Smith AD, Sharp SJ. (2018). Sedentary behaviour and risk of all-cause, cardiovascular and cancer mortality, and incident type 2 diabetes: a systematic review and dose response meta-analysis. *Eur J Epidemiol*.
<https://doi.org/10.1007/s10654-018-0380-1>.
13. Cao Dinh H, I. Beyer I, Mets T, Onyema OO, R. Njemini R, Renmans W. et al. (2017). Effects of Physical Exercise on Markers of Cellular Immunosenescence: A Systematic Review. *Calcif Tissue Int*. DOI 10.1007/s00223-016-0212-9.
14. Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., ... & Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *Br. J. Sports Med*, 54(24), 1451-1462.
15. Izquierdo, M., Merchant, R. A., Morley, J. E., Anker, S. D., Aprahamian, I., Arai, H., ... & Singh, M. F. (2021). International exercise recommendations in older adults (ICFSR): expert consensus guidelines. *J. Nutr. Health Aging*, 25(7), 824-853.
16. Schoenborn CA, Adams PF, Peregoy JA. (2013). Health behaviors of adults: United States, 2008–2010. *Vital Health Stat*. 10(257):1-184.
17. Harvey JA, Chastin SF, Skelton DA. (2015). How sedentary are older people? A systematic review of the amount of sedentary behavior. *J Aging Phys Act*.23:471-487.
18. Leask CF, Harvey JA, Skelton DA, Chastin SF. (2015). Exploring the context of sedentary behaviour in older adults (what, where, why, when and with whom). *Eur Rev Aging Phys Act*.7;12:4. doi: 10.1186/s11556-015-0146-7.
19. Matthews CE, George SM, Moore SC, Bowles HR, Blair A, Park Y. et al. (2012). Amount of time spent in sedentary behaviors and cause-specific mortality in US adults. *Am J Clin Nutr*. 95:437-445.
20. WHO. World report on ageing and health. Geneva: World Health Organization (WHO); 2015. Report no. 978 92 4 156504 2
21. Taylor, J., Walsh, S., Kwok, W., Pinheiro, M. B., De Oliveira, J. S., Hassett, L., ... & Sherrington, C. (2021). A scoping review of physical activity interventions for older adults. *Int J Behav Nutr Phys Act*, 18(1), 1-14.
22. WHO. Decade of Healthy Ageing 2020–2030; 2020, <https://www.who.int/ageing/decade-of-healthy-ageing> (Accessed August 24, 2022)