User Requirements

Author(s): Cornelia Schneider, Verena Venek, Viktoria Willner, Tanja Kefer, Federica Bosco

Organisation(s): Salzburg Research Forschungsgesellschaft mbH

Hilfswerk Salzburg

Aldia Cooperativa Sociale

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Table of Contents

Revisions i
Acknowledgement i
List of Figures iv
List of Tables iv
1 Executive summary 1
2 Introduction 1
2.1 Purpose of the document 2
2.2 Definitions, acronyms and abbreviations 2
2.3 Relationship to other deliverables 3
2.4 Structure of the document 3
3 Objectives of CiM 3
4 CiM target groups 4
4.1 Care service users (clients of social care organisations) 4
4.2 Volunteers 5
4.3 Family carers 6
4.4 Employees of social care organisations 6
5 Human-Centred Design Approach (HCD) 6
5.1 CiM Stakeholders 7
5.2 HCD for user requirements 7
6 Gathering user requirements 8
6.1 Process 8
6.2 Lead user 8
6.3 Activities of lead user involvement 9
6.4 First workshops 9
6.4.1 Organisation, objectives, structure and evaluation 9
6.4.2 Workshop with older people with care needs 10
6.4.3 Workshop with formal carers 23
6.4.4 Workshop with family carers 34
6.4.5 Workshop with volunteers 41
6.5 Second workshops 50
6.5.1 Organisation, objectives, structure and evaluation 50
6.5.2 Workshop with older people with care needs 51
6.5.3 Workshop with formal carers 55

6.5.4 Workshop with family carers 65
6.5.5 Workshop with volunteers 71
6.6 Coordination meeting of project partners 76
7 Results of user requirements analysis 77
7.1 Requirements and functions 77
7.1.1 Motion promotion service 77
7.1.2 Motivation service 77
7.1.3 Education service 78
7.1.4 Collaboration service 79
7.1.5 Community service 80
7.2 Personas 81
7.2.1 Definitions 81
7.2.2 ICF enriched Personas 81
7.2.3 Austrian Personas 82
7.2.4 Italian Personas 90
8 References 97

List of Figures

Figure 1: CareInMovement objectives (source: CiM-Consortium 2016) 4
Figure 2: Approaches used in CiM – Human-centred design and comprehensive participatory approach (source: based on Schneider and Trukeschitz 2015) 7
Figure 3: Procedure - gathering user requirements (source: own diagram) 9
Figure 4: Presentation slides – motion promotion (source: presentation 2nd workshop older people with care needs) 52
Figure 5: Presentation slides – motivation (source: presentation 2nd workshop older people with care needs) 53
Figure 6: Presentation slides – information (source: presentation 2nd workshop older people with care needs) 53
Figure 7: Presentation slides - collaboration (source: presentation 2nd workshop formal carers) 57
Figure 8: Presentation slides - education (source: presentation 2nd workshop formal carers) 57
Figure 9: Presentation slides – motion promotion, motivation (source: presentation 2nd workshop formal carers) 58
Figure 10: Presentation slides – community (source: presentation 2nd workshop formal carers) 59
Figure 11: Presentation slides – collaboration (source: presentation 2nd workshop family carers) 66
Figure 12: Presentation slides – education (source: presentation 2nd workshop family carers) 67
Figure 13: Presentation slides – motion promotion (source: presentation 2nd workshop family carers) 67
Figure 14: Presentation slides – education (source: presentation 2nd workshop volunteers) 72
Figure 15: Presentation slides – collaboration (source: presentation 2nd workshop volunteers) 72
Figure 16: Presentation slides – motion promotion (source: presentation 2nd workshop volunteers) 73

List of Tables

Table 1: Summary of requirements and functions per service 1
Table 2: Target groups (source: CiM-Consortium 2016) 4
Table 3: Activities of stakeholder involvement for gathering user requirements for CiM (source: ISO 9241-210, p. 5 with own adaptations) 8
Table 4: Persona 1 (source: own representation) 84
Table 5: Persona 2 (source: own representation) 86
Table 6: Persona 3 (source: own representation) 88
Table 7: Persona 4 (source: own representation) 90
Table 8: Persona 1 (source: own representation) 92
Table 9: Persona 2 (source: own representation) 93
Table 10: Persona 3 (source: own representation) 95

Table 11: Persona 4 (source: own representation) 96

1 Executive summary

For gathering user requirements in the CiM project, the human-centred design approach (HCD) was applied. Needed stakeholders were involved in form of lead users within two lead user workshops in three regions (urban and rural region in Austria and rural region in Italy).

The first workshop was dedicated to planned CiM topics whereas the second workshop focussed on CiM services.

The requirements and functions identified for each CiM service are presented in the following table:

Service	Requirements	Functions
Motion promotion service	• Individual set of exercises depending on the fitness level • One-time personal training on how to perform exercises • Guided training with dedicated exercises and instructions on how to perform these exercises • Reminders in order to perform exercises regularly (possibility to set fixed times) • Possibility to perform exercises together with other people	• Training plans (including possibility to plan fixed regular times for training; possibility to alternate exercises; possibility for reclassification if fitness level in- or decreases) • Guided training instructions (video and written description) • Reminders in order to not forget the training • Overview of training results
Motivation service	• Tips for older people and informal carers • Group activities • Overview of results with rewarding system • Gadget for counting steps/kilometres and calories and offering safety by providing a SOS button	• Tips for older people and informal carers • Rewarding system (extension of overview of training results) • Gadget for collecting movement data and providing
Education service	• Courses dedicated for care workers, older people, relatives and volunteers	• Create courses (with different content for different user groups) • Execute courses • Quizzes for different user groups with different content
Collaboration service	• Information channel for formal carers, family carers and volunteers • Communication channel between formal carers, family carers and volunteers • Possibility to leave notes on an electronic device • Data protection • Task list for family carers and volunteers	• Task list with care guidelines for family carers/volunteers • Communication channel • Information channel • Electronic notes
Community service	• Process for recruitment • Process for volunteering • Management of volunteers • Tasks of volunteers • Credits for volunteers • Documentation for volunteers	• Administration of volunteers • Management of volunteers (time slots etc.) • Time and task documentation system

Table 1: Summary of requirements and functions per service

2 Introduction

2.1 Purpose of the document

This document represents the official deliverable D4.1 of the AAL JP project CiM – CareInMovement. The user requirements engineering process is used to derive, confirm or reject functions of a planned system. Furthermore, implementation constraints and constraints under which the system will be operated are determined (Thomas et al. 2009). Additionally, system stakeholders are described and domain-specific terms are defined. The requirements analysis forms the basis for all other project activities.

2.2 Definitions, acronyms and abbreviations

CiM	CareInMovement
Human-centred design (HCD)	Human-centred design is an approach to interactive systems development that aims to make systems usable and useful by focusing on the users, their needs and requirements, and by applying human factors/ergonomics, and usability knowledge and techniques (*ISO 9241-210:2010 Ergonomics of Human-System Interaction -- Part 210: Human-Centred Design for Interactive Systems* 2010)
Stakeholder	Individual or organisation having a right, share, claim or interest in a system or in its possession of characteristics that meet their needs and expectations (*ISO 9241-210:2010 Ergonomics of Human-System Interaction -- Part 210: Human-Centred Design for Interactive Systems* 2010)
Usability	Extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use (*ISO 9241-210:2010 Ergonomics of Human-System Interaction -- Part 210: Human-Centred Design for Interactive Systems* 2010)
User interface	All components of an interactive system (software or hardware) that provide information and controls for the user to accomplish specific tasks with the interactive system (*ISO 9241-210:2010 Ergonomics of Human-System Interaction -- Part 210: Human-Centred Design for Interactive Systems* 2010)
LTC	Long-term care
6MWT	six-minute walk test measures the distance an individual is able to walk over a total of six minutes on a hard, flat surface
MOCCA	MOCCA is an e-health system, which is used by employees of Hilfswerk on a smartphone for documentation of the caring process

2.3 Relationship to other deliverables

As mentioned above, this document deals with the end user requirements analysis. The end user requirements of CiM have been gathered from the perspective of potential future users. This document does not deal with system requirements, system architecture or the user interface concept which are dealt with in separate documents. The use cases document (D 4.2) represents an extension of this document.

2.4 Structure of the document

In the following, the objectives of CiM (Chapter 3) are described. The target group is further specified (Chapter 4). Chapter 5 describes the human-centred design approach applied for user involvement. The process of requirements collection and activities conducted to involve all relevant stakeholders are discussed in Chapter 6. Chapter 7 is devoted to the results of the requirements analysis.

3 Objectives of CiM

According to the description of work (CiM-Consortium 2016), the objectives of CiM are described from the two perspectives supply and demand side of care (cf. Figure 1).

On the supply side of care (formal/informal), the objectives of CiM are:

Increase the number of carers and **build** up a sustainable care community by **mobilizing** and empowering volunteers and **family carers** through

- Promoting **standardized collaboration** between the community, formal carers and care recipients
- Applying a **time-based care currency system** as a kind of compensation/incentive
- Attract informal carers to use the service as preventive measure for controlling and improving their health status

On the demand side of care (care recipients), the objectives of CiM are:

- **Supporting the care recipients** to prolong independent living (and to reduce/delay care demand) by
- **Maintaining** the current **health status** through **enhancing everyday life activities**
- Proposing individually tailored **motion activities**

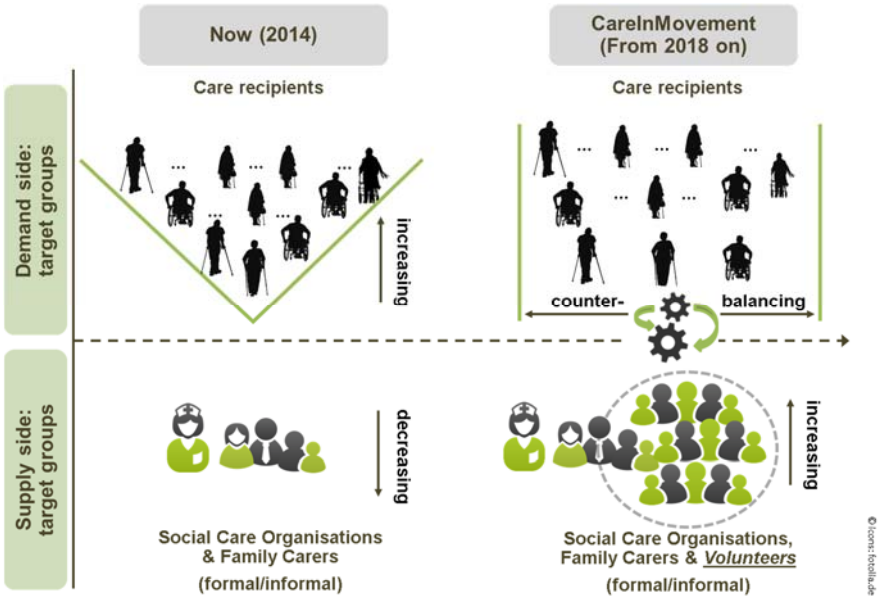


Figure 1: CareInMovement objectives (source: CiM-Consortium 2016)

4 CiM target groups

In CiM we address demand and supply side of care (four target groups):

- Primary end users on the demand side of care (care service users)
- Secondary end users on the supply side of care (care workers, family carers and volunteers)

Demand side: Primary end users	Supply side: Secondary end users		
Care Recipient	Informal Care		Formal Care
Care service users	Volunteers	Family carers	Care workers
55+ retired people (with limitations in mobility). Clients of social care organisations, living at home and slowly becoming more dependent on care.	People who would like to volunteer and take over support tasks. They may be either: 1) Retired or unemployed people looking for meaningful activities, interested in maintaining their health status 2) Young people considering the care profession as a future occupation 3) Employed people considering a career change	People of all ages who care for a close relative, such as a spouse, a sibling or grandparents.	Care workers who are able to perform professional care tasks according to their specific education, including certified nurses, home nursing carers, home assistants.

Table 2: Target groups (source: CiM-Consortium 2016)

4.1 Care service users (clients of social care organisations)

In order to define the CiM target group more precisely, client data of Hilfswerk and ALDIA have been prepared and analysed according to following characteristics:

- Sex
- Year of birth
- Postal code
- Primary disease

- Secondary disease
- Disabilities (0 = no disabilities, 1 = low visual impairment, 2 = low hearing impairment, 3 = moderate or severe visual or hearing impairment)
- Mobility (1 = fully mobile – can walk without help more than 6 min continuously [regarding 6MWT], 2 = with moderate limitations – can walk with (simple) walking aids 6 min or more – e.g. cane, crutches, used to one (lower or upper leg) prosthesis for years, 3 = with limitations – can walk a few meters/minutes (< 6 min , <200m) with walking aids e.g. walking frame, whole artificial lower limb, crutches, 4 = with severe limitations – can´t walk)
- Mental state (0 = without cognitive impairments, 1 = mild cognitive impairments, 2 = moderate to severe cognitive impairments (including dementia))
- How many hours per week of professional care does the service user receive (Note: "0" if none)
    - Home care
    - Home help
    - Meals on wheels
    - Befriending services
    - Other services, please specify

Given the planned system and based on experiences of former AAL projects it has been a foregone conclusion that older people with cognitive impairments should not be part of the target group (problems in learning and dealing with new technologies). To ensure that people are able to benefit from motion promotion, the LTC allowance level was set to 0 – 3 which means less than 160 hours of care per month. Therefore, the mobility level has been limited to 2. Regarding visual and hearing impairments the consortium decided to include only people with low impairments in order to make sure that they are able to use the CiM system.

A preliminary analysis of the data sets of ALDIA and Hilfswerk has shown that an extension of the age limit makes sense with respect to the number of potential trial participants. In contrast to the proposal (65+), the age limits now have been set to 55 and 85 years. The additionally defined criteria may guarantee that trial participants are able to use the CiM system.

According to the WHO ICD-10 scale, the most common diseases within the two data sets are diseases of the circulatory system, diseases of the musculoskeletal system and connective tissue, endocrine, nutritional and metabolic diseases and diseases of the respiratory system – in total diseases for which motion promotion makes sense.

Throughout this deliverable, used synonyms for care service users are older people, care recipients, clients, older people with care needs and people with limited mobility.

4.2 Volunteers

In CiM volunteers are characterized as people who are willing to take over support tasks. For CiM three groups of volunteers have been identified:

- Retired or unemployed people looking for meaningful activities, interested in maintaining their health status
- Young people considering the care profession as a future occupation
- Employed people considering a career change

- In general, people who are willing to participate in the CiM project

4.3 Family carers

Family carers in CiM are defined as people of all ages who care for a close relative, such as a spouse, a sibling, parents or grandparents.

Throughout this deliverable, used synonyms for family carers are family members and caring relatives.

4.4 Employees of social care organisations

This CiM target group are employees of social care organisations who support older people living at home and slowly becoming more dependent on care. According to their specific education, this group consists of certified nurses, home nursing carers and home assistants.

Throughout this deliverable, used synonyms for employees of social care organisations are care professionals, care workers, formal caregivers and professional caregivers.

5 Human-Centred Design Approach (HCD)

In order to reach high usability and technology acceptance, end users will be involved in all project phases following the human-centred design approach (*ISO 9241-210:2010 Ergonomics of Human-System Interaction -- Part 210: Human-Centred Design for Interactive Systems* 2010). What does user involvement mean? In a literature review Kujala (2003) pointed out different meanings of user involvement which range from „focus on users“ (Wilson et al. 1997) to „participation of users“ (Heinbokel et al. 1996).

On closer examination, differences between the approaches of user involvement within the product development cycle are apparent. User centred design for instance focuses on information, consultation and inclusion of primary end users whereas human-centred design also includes other stakeholder (*ISO 9241-210:2010 Ergonomics of Human-System Interaction -- Part 210: Human-Centred Design for Interactive Systems* 2010). Participatory approaches even go further because they involve the user and its environment decision making processes concerning the future product (Wright, Block, and von Unger 2007). Moreover, in some software development projects stakeholder negotiation based approaches to achieve a win-win situation between stakeholders have been established (Boehm et al. 2001).

In all project phases of CiM the human-centred design will be applied. In some phases (e.g. system design) the human-centred design approach will be extended by elements of participatory and negotiation based approaches to a comprehensive participatory approach (cf. Figure 2).

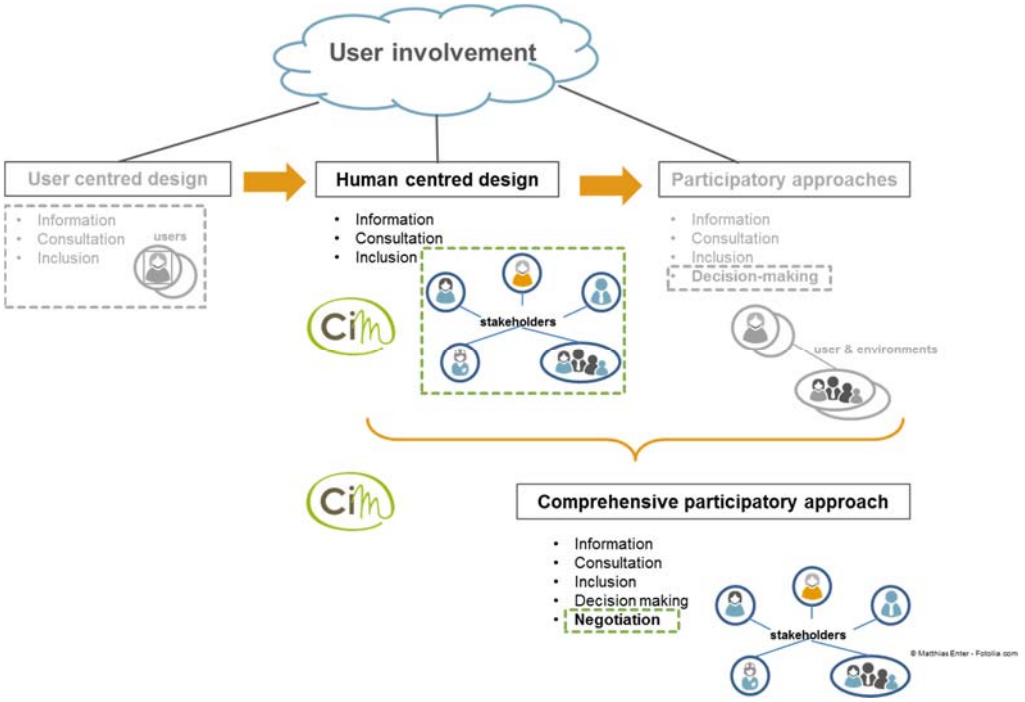


Figure 2: Approaches used in CiM – Human-centred design and comprehensive participatory approach (source: based on Schneider and Trukeschitz 2015)

5.1 CiM Stakeholders

For implementing the human-centred design and comprehensive participatory approach in CiM a precise knowledge of all stakeholders is necessary. In addition to the CiM target groups described above, also companies and researchers involved in the realisation of CiM are taken into account.

For CiM following stakeholders have been identified:

- Primary end users: Older people with care needs
- Secondary end users: Informal (volunteers, family carers) and formal carers (employees of social care organisations)
- Companies: Social care organisations, UI designer(s), software provider(s)
- Researchers: Sport scientists, social scientists, computer scientists

Depending on the project phase, the required stakeholders are involved.

5.2 HCD for user requirements

As mentioned before, HCD will be used as a conceptual approach to gather user requirements. By the use of HCD the planned core services of CiM are shaped together with all stakeholders within several workshops. In the following table, activities are assigned with respect to HCD and the project phases for HCD according to (Nedopil, Schauber, and Glende 2013).

Activities	Outputs from human-centred design	Phases according to Nedopil

Understand and specify the context of use	Context of use description • Target group definition (based on detailed data of the customer structure of each end user organisation)	
Specify the user requirements	Context of use specification • Personas and scenarios (together with end user organisations) User needs description (according to CiM core services) • 1st user workshops (end users, family carers, volunteers, formal carers) – with focus on CiM topics • 2nd user workshops (end users, family carers, volunteers, formal carers) with focus on CiM services User requirements specification • Coordination of the workshop results (social care organisations, UI designer, sport scientists, social scientists, software providers, computer scientists) • User requirements document (Shaping of core services and use cases)	Phase 1: Understanding

Table 3: Activities of stakeholder involvement for gathering user requirements for CiM (source: ISO 9241-210, p. 5 with own adaptations)

6 Gathering user requirements

6.1 Process

In a first step, necessary stakeholders have been identified (cf. section 5.1). In the next step, the involvement of the individual stakeholders in the form of lead users for gathering user requirements was planned.

6.2 Lead user

Lead users are defined as customers whose needs and purchasing power are representative for a certain market. By involving lead users into the entire development process, companies can achieve significant competitive advantages (“Gabler Wirtschaftslexikon, Stichwort: Lead User” 2016).

To ensure end user acceptance in CiM, lead users (i.e. care recipients, family carers, volunteers and social care organisations) are involved in all project phases. Six clients of social care organisations with limited mobility, three family members, three care professionals and three potential volunteers from each trial country (15 persons in total per country) are selected to act as lead users.

We know that even for a qualitative design the number of lead users seems to be low. In our case the general idea/topics and main services of CiM have already been roughly defined within the description of work (CiM-Consortium 2016). In the requirements phase, the task of the lead users is, together with the consortium, to shape and further develop the CiM idea/topics and its services. For this purpose the amount of planned lead users seemed to be sufficient.

6.3 Activities of lead user involvement

For older people with care needs, formal carers, family members and volunteers, two workshops in Austria and Italy have been scheduled. The first workshop focused on planned CiM topics and the second on potential CiM services. On request of Hilfswerk, the two workshops in Austria were additionally conducted in an urban and a rural area (City of Salzburg and Pinzgau). The user requirements have been finalized during a coordination meeting in which all project partners have been involved.

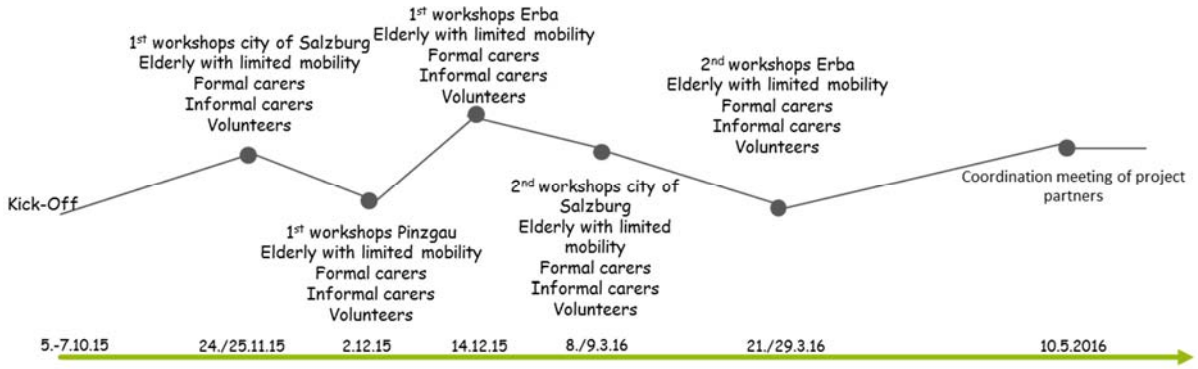


Figure 3: Procedure - gathering user requirements (source: own diagram)

6.4 First workshops

6.4.1 Organisation, objectives, structure and evaluation

6.4.1.1 Participants (planned)

In each trial country (Austria twice – urban and rural area):

- 6 Older people with care needs
- 3 Family carers
- 3 Care professionals
- 3 Potential volunteers

6.4.1.2 Venue

Premises of participating end user organisations

6.4.1.3 Objectives

Gather needs of older people with care needs, volunteers, formal and family carers with respect to planned **CiM topics**:

- Movement (in general)
- Training
- Motivation
- Technological support
- Information, education
- Volunteers
- Communication, collaboration
- Incentives

6.4.1.4 Structure

- Welcome (5 min.)
- Get to know each other (25 min.)
- Short introduction to CiM (15 min.)
- Based on a tailored interview guide questions concerning the aimed CiM topics are asked to each target group – with different focal points for each target group (depending on the amount of participants discussion took place in one, two or three working groups) (90 min).
- Information on further project activities (workshops etc.) and farewell (15 min.)

6.4.1.5 Evaluation of results

Workshops in the City of Salzburg, in the rural region Pinzgau (Salzburg, Austria) and in Erba (Italy) have been conducted. For the workshops in the City of Salzburg minutes have been taken. The workshops in Pinzgau and Erba have been recorded and transcribed.

Based on the workshop results a content analysis (based on Mayring, 2008) has been conducted. Starting from the interview guide which has been developed based on CiM topics thematic areas have been determined. Sub-areas have been surrendered based on how often a sub-area has been mentioned during the discussion.

6.4.2 Workshop with older people with care needs

6.4.2.1 City of Salzburg (Austria)

Date/Time

24.11.2015 9:00 – 11:00

Participants

9 older people with care needs (8 women, 1 man), mean age 66 years (min. 47, max. 80)

3 employees of Salzburg Research

2 employees of the Hilfswerk (area manager social work)

Premises

Familien- und Sozialzentrum Salzburg Stadt

6.4.2.2 Pinzgau (Austria)

Date/Time

2.12.2015 9:00 – 11:00

Participants

3 older people with care needs (3 women; 83, 89 and 63 years)

2 employees of Salzburg Research

1 employee of the Hilfswerk (deputy area manager care)

Premises

Familien- und Sozialzentrum Zell am See

6.4.2.3 Erba (Italy)

Date/Time

15.12.2015 14.45 – 16.00

Participants

4 older people with care needs (3 women 1 man; 84, 85; 91 and 84 years)

1 employee of Aldia

Premises

Spazio Arcobaleno, Erba

6.4.2.4 Interview guide

CiM topics

- Movement (in general)
- Training and motivation
- Technological support
- Information
- Volunteers

Questions

Intro: What do you connect with movement in everyday life?

How important is movement for you? (On weekdays, at weekends, winter, and summer)

Which forms/types of physical movement/activity can you currently perform well? (Bicycling, hiking, going for a walk, take the stairs, swimming, enter or exit the bath tub, sitting down, getting up, tying your shoes, getting dressed, washing, eating…)

In which physical activities are you limited?

Which physical activities are you not able to do anymore?

What currently motivates you to move? (Doing exercises, going for a walk)

Which physical activities do you definitely want to maintain as part of your mobility and quality of life? (Movements of everyday life and sports)

What motivates you to maintain your physical movability/mobility? (For example doing something with friends or family members, fitness centre, trips, special offers for seniors/older people)

From the movements/activities of which your performance is limited or you cannot do/perform them anymore, which would you like to improve or regain?

What prevents you from doing exercise or going for a walk?

When you have the possibility to receive a guided training, which offer would attract you? (Personal trainer/coach, group sessions, alone with feedback of a trainer, video-tutorial, volunteers, etc.)

Have you ever received exercises from experts (like physiotherapists or from hospital, spa houses, etc.) which you exercise or should have done at home?

- How was it? How did the descriptions of the exercises look like (sketches, pictures, written, etc.)? Were they explained satisfying/accurate enough/motivationally?
- How long have you performed the exercises? Do you still exercise them? If yes, what do you like about them? If no, why do you not exercise them anymore?
- What did you like, what not?
- What should have been different so that you would still exercise them?

Which information about your movability/mobility would you permit to forward to formal caregivers, caring relatives/informal caregivers, volunteers?

If you had a training watch, would you use it? (Before asking, question if anybody currently possesses a pulse watch or show smart training watch)

- What should the training watch offer so that you would use it?
- What would you like to know during movement (for example pulse, distance, time, calories …)?
- Which information is interesting afterwards? (Course of the week …)
- …

Do you like to move together with other people? Do you like to do motion exercises within a group?

Could you imagine performing exercises which are shown in a video?

Would you like to compete with others to measure your training success?

- How could this look like?

Are there topics or information in health and movement in which you are particularly interested?

- From where do you currently receive that information?
- Would you like to know more about it?
- Would you like to prove your knowledge through quizzes etc.?
- How useful or interesting would daily advices concerning health and movement be? How should they look like to be interesting/ attractive?

6.4.2.5 Results

Sample characteristics:

- n = 16
  - 9 City of Salzburg
  - 3 Pinzgau
  - 4 Erba

6.4.2.5.1 Result overview

Following **thematic areas and sub-areas** have been determined:

Important issues

- Movement
- Be/stay mobile
- Autonomy
- Community
- Safety
- Money
- Household / Cooking
- Neighbourhood assistance
- Not burden relatives
- Being able to drive a car

Opinions/ Positions

- Walking is important
- Being in nature
- Movement is healthy
- Gym/fitness studio is unhealthy
- Physicians are disinterested
- With raising age you listen increasingly to your own body

Health conditions

- Health problems
- Some are physically weak
- Increased fall risk
- Sensitive to weather changes
- Weight problems
- With raising age spatial orientation decreases

Movement - what is currently performed?

- Going for a walk or rather walking
- Courses focused on "smooth movement"
- Miscellaneous

Motivation

- Performing movement together with others
- To be able to motivate oneself is important and necessary
- Movement offers must be in the surroundings/ close to one's home
- Fixed times for movement are important
- Offering trainings during daylight hours is important

Used aids

- Support
- Rollator/ walker
- Cane
- Emergency button

Used fitness devices

- Home trainer
- Rubber straps

Technologies

- No competition with others regarding success of training is needed
- Technology has to be easy
- Look what others have done is interesting
- Step counter would be interesting
- Competition with others
- Automatic blood pressure measurement would be nice to have
- Interest in calorie consumption
- Useful and individual tips
- Training watch
- Interest in personal heart rate
- Interest in exercise videos
- How to remain interest in technology

Considerations for developing the exercise program

- Evident success of exercises is needed
- Exercises have to be created by professionals
- Performing medical exercises
- Large groups are not good
- Training sessions together with others
- Exercises are often performed for the therapist
- Continuously motivation for exercises
- Tele-fitness

- Individualized exercises
- Room issues

Interesting topics

- Diet

Miscellaneous

- Information are often gathered in the internet
- Internet would be good
- Offer internet courses

6.4.2.5.2 Detailed results

What is important for them?

Movement

- move/stay active as long as possible to avoid social isolation and maintain quality of life
- Move with respect to personal impairments/disabilities (e.g. weakness in the knee, etc.)

Be mobile

- fear of being isolated/ loneliness
- movement means to be with people (e.g. doing groceries)

Stay mobile

- move independently from aids like cane or wheel chair

Autonomy

- stay self-determined
- want to do everything alone
- maintain one self's perseverance (try something as long as it is done)
- regain abilities after diseases
- fear that one has to go to a retirement home
- move independently
- travel independently
- be able to go outside alone
- decide independently
- live casually (free and easy)

Community

- fear of common decrease in friends due to death or they stay away because of disease/impairment/spouse's death
- social environment avoids them due to hearing loss and/or disease
- support from family

- have healthy relationships/communication to family members and friends
- Like to do exercises or just be together with others (friends, social aspect, communication, motivation) without competition but with assisting/supporting one another

Safety

- fear when walking/driving alone
- scepticism towards strangers
- fear that something happens while there is no one who helps
- experience security due to support by family, friends
- nobody should know neither about personal information (living alone, photos, address,..), about financial situation nor about possible dizziness

Money

- fear of being ripped-off
- financial problems
- small pension

Household/ Cooking

- cook for themselves/ meals on wheels

Neighbourhood assistance

- feel safer because neighbours have keys if something is wrong/ if help is required
- important that they are nice
- neighbours help them
- they do something together with them (e.g. watching TV)

Not burden relatives

- do not burden children or family members
- need to feel needed

Being able to drive a car

- move independently
- travel independently
- stay self-determined

Opinions/ Positions

Walking is important

- stay mobile

Being in nature

- important for one's mind
- movement outside is better than inside

- fresh air
- performing exercises outside instead of performing them while watching exercise video

Movement is healthy

- movement is everything
- lack of movement leads to deteriorations of health

Gym/fitness studio is unhealthy

Physicians are disinterested

- identify age too fast as reason for issues/ impairments

With rising age you listen increasingly to your own body

- not to a heart rate alert of a home trainer
- older people perform exercises dependent on their self-assessment rather than on heart rate alarm of a training watch

Health conditions

Health problems

- diabetes
- retention of fluid
- heart problems
- dizziness
- iron deficiency
- forgetfulness

Some are physically weak

- need cane
- dizziness
- fall risk
- weakness in the knee
- weak shoulder
- general weakness (neither hiking nor bicycling possible)

Increased fall risk

- physical weak
- related to age

Sensitive to weather changes

- headache

Weight problems

- weight problems and diabetes
- healthy food

With raising age spatial orientation decreases

Movement - what is currently performed?

Going for a walk or rather walking

- Nordic walking
- walking with a dog
- use the stairs
- perform it regularly

Courses focused on "smooth movement"

- regular age-appropriate sports to maintain strong and active
- Qi Gong
- yoga
- autogenic training
- gymnastics
- how to lift correctly
- spinal medical gymnastics
- how to breathe correctly

Miscellaneous

- bicycling
- bicycling is difficult
- go to the doctor (alone or with relative)
- do shopping
- be in the nature
- exercises on home trainer
- dancing
- hiking
- swimming
- golf
- massages
- activate muscles daily after wake-up/ self-motivation

Motivation

Performing movement together with others

- people as motivation
- better than moving alone (e.g. hiking)
- social environment: doing something together with others (community)

To be able to motivate oneself is important and necessary

- one's weaker self is often the problem to start with exercises
- maintain positive thinking/ motivate oneself
- experience improvement
- visible or noticeable success (of exercises)
- be also used to do something alone (without spouse) without losing motivation

Movement offers must be in the surroundings/ close to one's home

- gymnastics or community offers should be in the neighbourhood for people with limited mobility

Fixed times for movement are important

- exercise schedule

Offering trainings during daylight hours is important

- group offers are often in the evening - would be better during the day
- gymnastics or community offers should not be in the night or at the evening
- do not like car driving in the dark, prefer daylight

Used aids

Support

- to do some shopping
- to go on errands
- bathing
- home help

Rollator/ walker

- remains one mobile

Cane

- to keep balance

Emergency button

- button on wrist eases fear of falling

Used fitness devices

Home trainer

- try do performing exercises daily

Rubber straps

- perform exercises

Technologies

No competition with others regarding success of training is needed

- do not like to compare with very ambitious people
- do not want older people than themselves to perform exercises better

Technology has to be easy

- no long programming until exercises start

Look what others have done

- knowing which exercises others do would be exciting
- would like to competition exercises

Step counter would be interesting

- check if 10 000 steps/day are reached
- integrated in training watch

Competition with others

- would like to compete with others by doing exercises
- comparing their times and performance

Automatic blood pressure measurement would be nice to have

Interest in calorie consumption

- display via training watch

Useful and individual tips

- tips/recommendations should be individual and useful (not to general)
- weekly tips would be sufficient
- individual tips via telephone or email – no paper
- with videos and accurate descriptions
- recommend to drink more

Training watch

- with tips and reminders
- week overview of data/ progress
- time
- walked kilometres
- measure blood pressure
- exercise schedule
- data acquisition over a specific period of time, but not regularly interesting (for control and observation)

Interest in personal heart rate

- display via training watch

- Interest in exercise videos
- consider deafness

How to remain interest in technology

- technology must remain interesting - user should not be bored after a while
- easy to handle

Considerations for developing the exercise program

Evident success of exercises is needed

- exercises are performed when success is evident
- exercises are performed when someone's condition becomes worse when they are not performed
- no too difficult/ not performable/ disliking/ not too much exercises
- feedback should be given

Exercises have to be created by professionals

- e.g. physiotherapists
- only if support is really professional
- selected once a week by mobile caregiver
- exercises shown by an expert (e.g. physiologists, therapists) or from a stay at a health spa

Performing medical exercises

- almost everybody had to do exercises after a hospital stay or a stay at a health resort
- performing medical exercises as long as they are successful
- performing medical exercises for good conscience/ until better physical condition has been reached
- perform them longer than usual
- are still performing them

Large groups are not good

- not too much persons for each exercise group

Training sessions together with others

- would like training sessions with others outside
- for example walking at the park taking into account individual differences

Exercises are often performed for the therapist

- because he/she is nice
- motivation depends on quality of instructor

Continuously motivation for exercises

- if condition is improved, exercises are not performed anymore

- no too difficult/ not performable/ disliking/ not too much exercises
- have to be easy to handle
- incentive that physician allows it
- incentive of weight loss

Tele-fitness

- gymnastics program via TV would be good
- physical exercises in public channels
- possess exercise videos which they perform at home
- issue of how to use DVD player

Individualized exercises

- exercises have to "fit" to the one who has to perform them
- age-, disease- and impairment-appropriate exercises
- exercises appropriate for the individual user
- no temporal pressure

Room issues

- too small flats to perform exercises
- consider exercises while standing/sitting

Interesting topics

Diet

- exciting
- tips/recommendations
- diet for older people is important
- healthy diet too expensive
- like to know chemical substances within nutrition
- age-related recommendations
- balancing deficiency signs

Miscellaneous

Information are often gathered in the internet

- experiences from others with same disease/ impairment (e.g. internet forum)
- information about medications
- information about own diseases/impairments like strokes or chronic autoimmune diseases (e.g. diabetes)
- information about medications
- experiences from others with same disease/ impairment (e.g. internet forum)
- magazines from doctors, pharmacies or health insurances
- inform about future possible diseases/impairments, e.g. cognitive impairments

Internet would be good

- to stay connected

Offer internet courses

- courses for how to use computers and internet are important
- know how to use a computer/ internet to stay connected

6.4.3 Workshop with formal carers

6.4.3.1 City of Salzburg

Date/Time

24.11.2015 13:00 – 15:00

Participants

5 employees of the Hilfswerk (3 from domestic support and 2 from medical nursing care at home)

3 employees of Salzburg Research

Premises

Familien- und Sozialzentrum Stadt Salzburg

6.4.3.2 Pinzgau

Date/Time

2.12.2015 12:00 – 13:30

Participants

3 employees of the Hilfswerk (1 from domestic support and 2 from medical nursing care at home)

2 employees of Salzburg Research

Premises

Familien- und Sozialzentrum Zell am See

6.4.3.3 Erba

Date/Time

15.12.2015 17:00 – 18:00

Participants

3 formal carers (3 from domestic support)

1 employee of Aldia

Premises

Spazio Arcobaleno, Erba

6.4.3.4 Interview guide

CiM topics

- Communication, collaboration
- Movement
- Training
- Volunteers

Questions

Intro: Communication/Collaboration between formal, informal caregivers and care recipients – what do you think about it?

How important is this communication/collaboration?

Which physical movements should the care recipient train, exercise, maintain to improve his/her quality of life and security?

Which information about the physical ability of the care recipient would you like to share with relatives? Which information would you like to know from relatives? (on a regular basis?)

Which information about the physical ability of the care recipient would you like to share with volunteers?

Which information about the physical movability of the care recipient should never be shared? (With relatives, with volunteers?)

How many caregivers (formal and informal) are involved on average in the care of one care recipient (at different care levels 1-3 and mobile services)? (Note persons who support care recipient- how, about what and why is each person informed?)

Which information is currently shared? (On a regular basis? And how (email, phone…)?)

What should relatives know?

How could the process of sharing information be executed?

In your opinion, which problems could arise?

Are there any trainings currently offered to you like „how do I move correctly at work“?

If yes, what is positive, what is negative?

What would be (additionally) interesting for you?

Would such trainings be also useful for caring relatives/informal caregivers?

If yes, how should such trainings be set up or rather how could the caring relatives/informal caregivers be attracted to the offer?

How would you promote the care recipients to move more, if required? (What is motivational?)

How would you promote the caring relatives/informal caregivers to move more? (What is motivational?)

What do you think about motion promotion for older people?

Dependent on limitations – which exercises, in your opinion, would be useful for older people of different care levels?

6.4.3.5 Results

Sample characteristics:

- n = 11
  - 5 City of Salzburg
  - 3 Pinzgau
  - 3 Erba

6.4.3.5.1 Result overview

Following **thematic areas and sub-areas** have been determined:

Care in general

- Care requires much of sensitivity
- Help is often not accepted
- Formal caregivers are often between affected person and relatives
- Care recipients sometimes do not tell their caregivers what they really need
- Difficult organisation of joint activities (relatives and clients)

Important things concerning clients

- Network of care process
- Autonomy of the clients
- Clients are not able to use tablets
- Clients fear isolation
- Fall risk

Relatives in general

- Relatives should not be burdened by additional appointments
- Caring relatives are often alone
- Care burden
- Missing family association
- Caring relatives have not any time for themselves
- Offers for former caring relatives

Communication

- Communication with relatives depends on clients
- Relatives call divisional head
- Information exchange within the organisation via telephone, team meetings, single case reviews, emails
- Relatives need to know everything which is care-related

- Electronic documentation
- Current information situation is very good
- Difficult if relatives are not nearby
- Communication is important
- Relatives leave notes
- Relatives write emails
- Relatives write into process reports

Motion promotion

- Individualized exercises
- Consider biographies
- Going for a walk
- To be able to be outside is important
- Exercises should be classified by health condition
- Movement is very important
- Exercises should be classified by body postures
- 1 video per week
- Exercises for the clients should be selected by the formal caregivers
- There have not yet been volunteers who move with clients
- Space limitations in flats of clients

Movement incentives

- Movement together with others motivates
- Motivation is very important
- Use client-related (individual) incentives
- Motivation depends on daily condition
- Social inclusion should be motivational
- Motivation depends on sympathy

Education for employees

- Social care organisation offers courses and they are accepted
- Training for volunteers is important

Education for relatives

- Care-related instructions
- Training in the care environment
- Individual trainings
- Time issue
- Basic course
- Evident benefits of the courses

Education for clients/tips of the day

- Furnishing
- Good footwear

Technology

- Comparison and competition
- Anonymous comparison (only by age and health condition)
- Comparison as incentive
- Evident progress
- Everyday life tips
- Roles concept for data protection
- Sensitive information depend on clients and clients decide what is allowed to be forwarded
- Comparison between people with same health status
- Smart watch
- Easy technology
- Visible which exercises have been performed
- Time banking system as incentive

6.4.3.5.2 Detailed results

Care in general

Care requires much of sensitivity

- know how to communicate with clients
- possess delicacy of feeling

Help is often not accepted

- know that people have to overcome themselves to accept help
- requires time until acceptance

Formal caregivers are often between affected person and relatives

- there are three types of relatives:
  - committed ones (call if something is important)
  - disinterested ones (never call, are informed when person is admitted to hospital)
  - over-committed ones (call all the time due to everything)

Care recipients sometimes do not tell their caregivers what they really need

- complains of care recipient after mobile care visit about things that have not been done because they did not tell the formal caregiver
- receive information from family carers

Difficult organisation of joint activities

- difficulty to organize activities for family carers and care recipients simultaneously

Important things concerning clients

Network of care process

- mobile care (home help, home care), neighbours, children, physicians, spouses are parts of the care process
- home help service
- home care service
- general practitioner (home visits)
- 1-2 relatives
- neighbours as observers
- network of farmers is bigger
- change of professional caregivers is difficult

Autonomy of the clients

- mobile carers are visitors
- support people, neither patronize nor force people to do something
- formal care should not put pressure on clients

Clients are not able to use tablets

- clients would have problems with technology

Clients fear isolation

- children are living far away
- missing support from family
- happy when mobile care is coming

Fall risk

Relatives in general

Relatives should not be burdened by additional appointments

- additional appointments like special offers/ courses for relatives
- difficult to organise support at home while they attend courses (also financial issue)

Caring relatives are often alone

- children live far away
- missing support from family

Care burden

- formal caregivers know the challenges for caring family members (regular work and care of a family member)

Missing family association

- are alone
- no support from other family members

Caring relatives have not any time for themselves

- busy with care, work and social life
- social isolation (decrease or loss of friends during care period)

Offers for former caring relatives

- meeting of former caring relatives right after caring periods should be offered to reintroduce people to social life/ society
- during and after care period (meet people, share experiences)
- get-together for coffee (games, singing, movement)

Communication

Communication with relatives depends on clients

- during home care visits relatives stay to talk
- some relatives are very co-operative and engaged, others not
- to receive recent information about the client (both ways)
- depends on relationship of clients with relatives (should be good)
- to get to know things the client probably won't tell the formal caregivers

Relatives call area manager

- relatives receives phone numbers of divisional head or representative
- employees give their phone numbers to relatives- should not do that

Information exchange within the organisation

- team meetings (once a month)
- if required, there is a case review with the divisional management
- emails to employees
- home care share information via telephone
- coordination of employees is very important
- documentation about what employee has done with the client: if it is not documented anywhere, it has not happened

Relatives need to know care-related issues

- share everything which is care-related (e.g. depression) or urgent (e.g. admission to the hospital)
- personal contact, telephone or e-mails

Electronic documentation

- will be used in the future
- new system GRIPS: documentation software
- an advantage of GRIPS in contrast to the current paper-based documentation (which stays at the client's site) is that the clients and relatives cannot add irrelevant information

Current information situation is very good

- current information exchange works

Difficult if relatives are not nearby

- reachability

Communication is important

- clients tell them things they probably won't like to tell their children, etc.
- clients avoid being a burden to someone in the family

Relatives leave notes

- for mobile care

Relatives write emails

- care-relevant
- ask for information

Relatives write into process reports

- folder at the client's site – open to read for everyone at client's home

Motion promotion

Individualized exercises

- provide age-, disease-, impairment-related (low-level) exercises/ movement promotion with adequate motivation and depending on the client's current (daily) condition (time for exercise, weather, ..)

Consider biographies

- know the biography of the person to be cared for

Going for a walk

- fresh air
- keeps oneself mobile

To be able to be outside is important

- appetite and thirst increase outside
- just going outside

Exercises should be classified by health condition

- exercises related to disease/ impairment

Movement is very important

- clients have to experience the success/improvement of movement to start to move
- morning activation

Exercises should be classified by body postures

- sitting
- standing

1 video per week

- is possible after smooth introduction
- consider deafness
- consider space limitations in flats of clients
- clients should be able to decide which exercises they want to do

Exercises for the clients should be selected by the formal caregivers

- depending on current health condition of clients

There have not yet been volunteers who move with clients

- there is a 70-year-old lady which plays cards with clients or goes for a walk with them
- initial instructions for volunteers should be mandatory

Space limitations in flats of clients

Movement incentives

Movement together with others motivates

- alone is not funny
- motivate one another
- community as motivation

Motivation is very important

- it is especially challenging to motivate people with psychological problems

Use client-related (individual) incentives

- everybody needs a different type of motivation
- going to a coffee house
- goodies could be offered
- vouchers as motivation
- convince of physical and psychological benefits

Motivation depends on daily condition

- exercises in the morning to prevent stiffness

Social inclusion should be motivational

- a problem of the targeted generation is, that they worked a lot in their lives and movement means work for them: they should be convinced that mobility means that you are still a part of the society
- prevents social isolation

Motivation depends on sympathy

- clients' sympathy with formal caregivers

Education for employees

Social care organisation already offers courses and they are accepted

- kinaesthetic courses
- yoga
- self-defence
- spinal exercises
- Works council of the Hilfswerk “Motto Fit”

Training for volunteers is important

Education for relatives

Care-related instructions

- training for how to lift correctly, etc.

Training in the care environment

- training at home: train directly in care situation

Individual trainings

- dependent on care situation and required care

Time issue

- do not have enough free time
- when they are caring: time pressure, costs, additional appointments are burdensome

Basic course

- to learn basics, not specified on individual care situation
- to assess required knowledge for future courses
- first course and afterwards special courses

Evident benefits of the courses

- to maintain health
- promote the reason of the instruction/ highlight benefits for the family caregivers

Education for clients/tips of the day

Furnishing

- how to furnish flat "correctly": prevent falls caused by carpets
- tip for good carpet sales

Good footwear

- learn which shoes help preventing falls
- tip for good shoe sales

Technology

Comparison and competition

- success/ progress of training visible for others

Anonymous comparison (only by age and health condition)

- look what others have done (anonymously)

Comparison as incentive

- older people like to compare each other

Evident progress

- clients can watch their progress of exercises

Everyday life tips

- should be useful

Roles concept for data protection

Sensitive information depend on clients and clients decide what is allowed to be forwarded

- Receiver-related share of information (dependent on client)
    - What does the client want to share with volunteers?
    - What with family members?

Comparison between people with same health status

- he/she has the same problems as I do and can (not) do this (anymore)

Smart watch

- step counter
- progress display
- should be easy
- older people are often under-estimated

Easy technology

- easy to handle

Visible which exercises have been performed

- caregivers want to know what/which exercises the volunteers have already done with the clients
- sharing information between formal care and volunteers (e.g. meals on wheels) is lacking/missing

Time banking system as incentive

- sign gathered "time" over to another person (e.g. family member who needs support)

6.4.4 Workshop with family carers

6.4.4.1 City of Salzburg

Date/Time

2.12.2015 14:00 – 16:00

Participants

5 family carers (2 men, 3 women; caring for 2 mothers-in-law, 2 mothers, 1 wife)

1 employee of Salzburg Research

Premises

Zentrum Walser Birnbaum

6.4.4.2 Pinzgau

Date/Time

15.12.2015 14:00 – 15:30

Participants

3 family carers (1 man, 2 women; caring for 1 wife, 1 brother, 1 brother-in-law)

2 employees of Salzburg Research

1 employee of the Hilfswerk

Premises

Familien- und Sozialzentrum Zell am See

6.4.4.3 Erba

Date/Time

14.12.2015 16:00 – 17:00

Participants

2 family carers (1 man, 1 woman; caring for 1 wife, 1 mother)

1 employee of Aldia

Premises

Spazio Arcobaleno, Erba

6.4.4.4 Interview guide

CiM topics

- Communication, collaboration
- Movement
- Training
- Volunteers

Questions

Intro: Communication/Collaboration with formal caregivers– What do you think about it?

How important is this communication/collaboration?

Which physical activities/movements are particularly burdening during caring or rather in the care situation?

Which physical activities/movements do you wish to particularly train to stay fit for the care?

Which physical movements should the care recipient train, exercise, maintain to improve their quality of life and safety?

Which physical movements should the care recipient train, exercise, maintain to preserve your movability?

Which information about the physical movability/mobility of the care recipient would you like to share with formal caregivers? Which information would you like to know from formal caregivers? (Regularly?)

Which information about the physical movability of the care recipient would you like to share with volunteers?

Which information about the physical movability of the care recipient should never be shared? (With formal caregivers? With volunteers?)

Which information is currently shared? (On a regular basis? And how (email, phone,…)?)

How could the process of sharing information be performed?

In your opinion, which problems could arise?

Are there any trainings currently offered to you like „how do I move correctly in the care situation“?

If yes, what is positive, what is negative?

Do you think such trainings for movement promotion would be useful for you?

If yes, how should such trainings be set up or rather how can you be motivated? What has a motivational effect to move?

What do you think about motion promotion for older people?

How would you promote the care recipients to move more, if required? (What is motivational?)

6.4.4.5 Results

Sample characteristics:

- n = 10
    - 5 City of Salzburg
    - 3 Pinzgau
    - 2 Erba

6.4.4.5.1 Result overview

Following **thematic areas and sub-areas** have been determined:

Tasks

- Medical tasks
- Everything that helps the care recipient

Challenges/ Problems

- Often do not know who should be asked
- Often alone with the situation
- Helplessness
- Missing communication interface between hospital and care service
- Threat to own health
- Relatives have a great responsibility
- No time for oneself
- Double burden
- Transfer emotions (insecurity, hopelessness) to care recipients
- Long, complicated official channels
- Some withdraw from social life
- Varying reliability and education level of formal caregivers
- Older people often do not listen to anything

What helps?

- Individual trainings
- Know that there is someone who could help if required
- Talks with experienced people
- Communication
- Tips for easing the burden
- Network knowledge of caring persons

Education for relatives

- Lift and carry
- Easy exercises to maintain fitness
- Evident benefits of courses
- Diet of care recipients

Motion promotion of care recipients

- Relatives take care recipients for a walk

- Motion promotion is important
- Active motivation is necessary

Volunteers

- Networking with volunteers via social care organisation
- Initial sympathy check between volunteers and care recipients
- Very individual situations
- Relatives should contact/call social care organisation if volunteers are needed
- Information exchange via video telephony
- Data protection
- Caring relatives become a volunteer
- Community building for volunteers
- Exchange via telephone
- Volunteers with experience in helping care recipients

Miscellaneous

- Decreasing number of family caregivers

6.4.4.5.2 Detailed results

Tasks

Medical tasks

- relatives take tasks for which formal caregivers or physicians are necessary

Everything that helps the care recipient

- do everything for them to ease situation of the care recipients

Challenges/ Problems

Often do not know who should be asked

- need to know where to find support

Often alone with the situation

- support from professionals is important
- are happy when formal caregiver is coming
- difficult to avoid social isolation

Helplessness

- do not know where to find support
- feel alone with their situation
- are insecure how to handle care recipient - correctly lifting and carrying without harming or causing unnecessary pain for the care recipient

Missing communication interface between hospital and care service

- interface between formal care, hospital, authorities, etc. is lacking or missing
- relevant information after a stay in a hospital are not directly forwarded from the hospital to the mobile care services

Threat to own health

- do not know if they handle care recipients correctly or rather if they carry/lift him/her correctly concerning their own health

Relatives have a great responsibility

- have great responsibility for the care recipient
- have to maintain positive thinking/realism
- do not lose hope

No time for oneself

- no time for personal fitness
- no time for doing something only for oneself

Double burden

- time pressure - employment and care
- care situation is easier if not employed
- exhausting movement while caring (e.g. carry/lift care recipient)

Transfer emotions (insecurity, hopelessness) to care recipients

- insecurity of family caregiver of wrong interaction with care recipient
- maintain positive thinking/realism
- do not lose hope (affect care recipient)

Long, complicated official channels

- unsatisfied with care level assessment

Some withdraw from social life

- busy with care situation
- busy with care situation and employment
- hear too many recommendations of other people who never cared and cannot hear the "tips" of them
- particularly concerning long term care

Varying reliability and education level of formal caregivers

- mobile care is not always reliable / punctual
- quality varies
- formal caregivers have also time pressure

Older people often do not listen to anything

- have to convince care recipients

What helps?

Individual trainings

- trainings at home for the individual care situation

Know that there is someone who could help if required

- receive support from social care organisations (e.g. Day center,)
- need to know that there is support
- need to know where to find support and accept it, or at least that there is the possibility of support

Talks with experienced people

- share experience with formal caregivers
- need someone to talk to
- talking is very important during the care situation

Communication

- talking is very important during the care situation
- need someone to communicate with
- for urgent information contact the social care organisation

Tips for easing the burden

- need to know where to find support and accept it, or at least that there is the possibility of support

Network knowledge of caring persons

- like to share experience with other family caregivers
- found association/society of family caregiver
- wish to connect with other caregivers
- negative association to term self-help group
- in the city and the country

Education for relatives

Lift and carry

- burdensome movements while caring
- correctly lifting and carrying
- prevent insecurity of family caregiver of wrong interaction with care recipient

Easy exercises to maintain fitness

- just moving
- Nordic walking

- Kinaesthetic exercises
- dancing – balance exercises
- physiological exercises for balance, strength, avoiding falls

Evident benefits of courses

- how to use/handle different supporting devices for the care (cane, rollator, etc.)
- together with care recipient
- courses should be entertaining (e.g. music)
- offer solutions
- individual instructions dependent on care situation

Diet of care recipients

- only few latest books on diet for care recipients available
- change of mealtime schedule

Motion promotion of care recipients

Relatives take recipients for a walk

- care recipients should go at least for a walk

Motion promotion is important

- convince care recipient to move
- perform condition-related works, exercises

Active motivation is necessary

- push care recipient to move

Volunteers

Networking with volunteers via social care organization

- social care organization should provide information about available volunteers
- social care organizations in charge of coordination of volunteers

Initial sympathy check between volunteers and care recipients

- integration of volunteers depends on sympathy, trust
- integration of volunteers depends on acceptance of care recipient

Very individual situations

- depends on care situation (e.g. long term, short term)
- tasks of volunteers have to be selected/ chosen by affected persons
- volunteers should not control medication
- for promotion e.g. drinking water

Relatives should contact/call social care organization if volunteers are needed

- social care organization has to be responsible for volunteers and their coordination
- should be visible where for how long a volunteer is available

Information exchange via video telephony

- personal communication with volunteers

Data protection

- volunteers who have been prepared/ selected/ verified by social care organization may receive all relevant information
- clarification of data protection

Caring relatives become a volunteer

- it would be easier with a time bank
- they could ask easier how they can give something back
- they can become volunteers giving something in return

Community building for volunteers

- as incentive

Exchange via telephone

- call social care organization and they tell who is available in the surroundings
- social care organization forward relatives' requests to volunteers asking for support

Volunteers with experience in helping care recipients

- volunteers should have experience in care
- some existing volunteers are people who cared for someone in the past

Miscellaneous

Decreasing number of family caregivers

- care has become more difficult due to smaller families

6.4.5 Workshop with volunteers

6.4.5.1 City of Salzburg

Date/Time

2.12.2015 14:00 – 16:00

Participants

5 volunteers (3 already active as volunteer, 2 potential volunteers)

1 employee of Salzburg Research

Premises

Zentrum Walser Birnbaum

6.4.5.2 Pinzgau

2.12.2015 16:00 – 17:30

Participants

3 volunteers (1 already active as volunteer, 2 potential volunteers)

2 employees of Salzburg Research

1 employee of the Hilfswerk

Premises

Familien- und Sozialzentrum Zell am See

6.4.5.3 Erba

14.12.2015 14:45 – 16:00

Participants

3 volunteers (3 already active as volunteer)

1 employee of Aldia

Premises

Spazio Arcobaleno, Erba

6.4.5.4 Interview guide

CiM topics

- Motivation
- Movement (possible tasks for volunteers)
- Incentives

Questions

Intro: Why do I voluntarily support/help/care for older people or rather support them in their movability/mobility? (What are my reasons to volunteer?)

In your opinion, which older people could you care for with respect to physical motion promotion?

Which types of motion promotion would you perform with care recipients?

When would you be concerned? When would you have doubts/concerns?

For how long/ which duration could you imagine to support an older person?

In which perimeter could you imagine to support an older person?

Within the project what would you like to receive instead of time? (For example vouchers, etc.)

Which physical movements should the care recipient train, exercise, maintain to improve their quality of life and safety?

Which physical movements would you like to train/exercise to stay fit for the support?

Which information about the physical movability of care recipients would you like to know, when you do motion promotion with the care recipient?

6.4.5.5 Results

Sample characteristics:

- n = 11
  - 5 City of Salzburg
  - 3 Pinzgau
  - 3 Erba

6.4.5.5.1 Result overview

Following **thematic areas and sub-areas** have been determined:

Attributes

- Are able to encourage/ engage/ motivate people
- Have free time
- Experiences in the field of care
- Punctual and reliable
- Should not entertain false hopes

Network

- Exchange with other volunteers
- Exchange with caring relatives
- Caregivers have to inform care recipients about volunteers
- Exchange between volunteers and caregivers

Care recipients who are visited by volunteers should

- live in the same area/city
- be acquainted
- be mobile
- be pleasant
- not have cognitive impairments
- have a low care level
- be reachable by walking or bus

What to know/ to be able to do

- Volunteers need person-related knowledge
- Volunteers need trainings
- Volunteers need enough information about how to deal with particular care recipients
- Current/Daily condition of person
- Responsibility knowledge

Challenges/ Problems

- Liability question
- Great responsibility
- Independence of people

Reasons to volunteer

- Recognition
- Was asked
- Acquaintance
- Fun
- Interesting
- Good friendship
- Desire to encourage people
- To not be bored while retired
- By chance
- You have a new task

Where to recruit volunteers/ who could be those volunteers

- Persons who have dealt with care before
- Persons who get security through instructions and clear responsibilities
- Recently retired people
- Persons who have time
- Recruiting by existing volunteers
- Community/ church
- Persons who get to know how to lift people
- Persons who are addressed and motivated through something

Incentives to participate in CiM (including time banking system)

- Little recognition/ social activities
- Time bank is not useful
- Time bank transfer
- Need to know for what time can be used
- Convincing project
- Clear goals

Possible tasks

- Going for a walk
- Visits
- Provide age-, disease-, impairment-related exercises/ movement promotion
- Easy exercises
- Playing cards
- Do an excursion
- Spinal gymnastics
- Gymnastics

- Partner activities
- Passive exercises
- Water gymnastics
- Support in mobility
- Call them and talk
- Have meals together
- Meals on wheels

Framework conditions

- Close by/ in the same village
- Specification of fixed times
- Should be easy

6.4.5.5.2 Detailed results

Attributes

Are able to encourage/ engage/ motivate people

Have free time

- for example retired people

Experiences in the field of care

- persons who have dealt with care before

Should not entertain false hopes

- volunteers should be initially certain to meet care recipients' requirements
- should be aware of when and how long someone should be supported

Punctual and reliable

- volunteer decide if he/she supports person on regular basis or not
- possibility to postpone/cancel appointment should be given

Network

Exchange with other volunteers

- share experiences
- social meetings

Exchange with caring relatives

- share information regarding care recipient

Formal caregivers have to inform care recipients about volunteers

- caregivers give information about volunteer; what they do, etc.

Exchange between volunteers and formal caregivers

- would be useful
- share information concerning care recipient

Care recipients who are visited by volunteers should

live in the same area/city,

- close by

be acquainted,

- it is easier to support friends
- be familiar to /known by volunteers

be mobile,

- can go for a walk

be pleasant,

- sympathy to each other should be given

not have cognitive impairments,

- only if you know how to deal with it

have a low care level,

be reachable by walking or bus.

What to know/ to be able to do

Volunteers need person-related knowledge

- know much about the care recipient due to much responsibility
- resilience of person
- walk aids of person
- how far can the person move/ walk
- how secure is the person
- dizziness of person
- diseases, cognitive/ physical impairments
- what is the person allowed to do

Volunteers need trainings

- first and on-going instructions
- first aid/ how to act in different situations
- fitness of volunteer
- need to know what to consider when going for a walk with a care recipient
- safety of volunteers through knowledge and information

Volunteers need enough information about how to deal with particular care recipients

- age-related or rather instructions depending on person who will be visited
- safety of volunteers through knowledge and information

Current/Daily condition of person

- current walk aids of person
- how far can the person move/ walk today
- current dizziness of person
- possible problems

Responsibility knowledge

- knowledge about what is allowed to do and what should be done
- have clear responsibilities - what happens if something has happened
- volunteers do not want to control medication use

Challenges/ Problems

Liability question

- who is liable if something happens

Great responsibility

- what happens if something happens

Independence of people

- do not forget independence of people
- let care recipients perform what they can do and support only in difficult situations
- do not forget of oneself

Reasons to volunteer

Recognition

Was asked

- by previous meals on wheels driver
- by daughter (employee of social care organization)
- by others

Acquaintance

- knows person and looks after her sometimes

Fun

- to work with people

Interesting

Good friendship

- help a good friend

Desire to encourage people

To not be bored while retired

- too much free time

By chance

You have a new task

Where to recruit volunteers/ who could be those volunteers

Persons who have dealt with care before

- best case

Persons who get security through instructions and clear responsibilities

Recently retired people

- have time

Persons who have time

Recruiting by existing volunteers

Community/ church

- recruiting in communities and churches

Persons who get to know how to lift people

Persons who are addressed and motivated through something

Incentives to participate in CiM (including time banking system)

Little recognition/ social activities

- verbal appreciation
- payed dinner with others
- social interactions, community
- meetings (meals) to share experiences

Time bank is not useful

- decrease already existing volunteers and offend voluntariness
- may be no motivation for people who already volunteer
- no need: you help a person and this will be returned

Time bank transfer

- use time banking for their relatives
- good idea to transfer time to relatives

Need to know for what time can be used

- within project for example vouchers
- travel vouchers (excursion with volunteer group)

Convincing project

- volunteers should be convinced of the project

Clear goals

- know objectives of the project

Possible tasks

Going for a walk

Visits

Provide age- , disease-, impairment-related exercises/ movement promotion

Easy exercises

Playing cards

Do an excursion

- take person with the bike
- do an excursion to a friend in other countries

Spinal gymnastics

Gymnastics

Partner activities

Passive exercises

Water gymnastics

Support in mobility

- e.g. car driving

Call them and talk

Have meals together

Meals on Wheels

- driver for meals on wheels

Framework conditions

Close by/in the same village

- reachable persons by bus or walking
- in the same area

Specification of fixed times

- regular basis or not
- cancel/postpone appointments

Should be easy

- should not need a computer
- volunteer has not a computer for time bank system
- should be a transparent system

6.5 Second workshops

6.5.1 Organisation, objectives, structure and evaluation

6.5.1.1 Participants (planned)

In each trial country (Austria twice – urban and rural area):

- 6 Older people with care needs
- 3 Family members
- 3 Fare professionals
- 3 Potential volunteers

6.5.1.2 Venue

Premises of participating end user organisations

6.5.1.3 Objectives

Inform about results of the first workshop. Gather ideas on how to solve challenges identified in the first workshop with respect to the planned **CiM services**:

- Motion promotion
- Motivation
- Education
- Collaboration
- Community

6.5.1.4 Structure

- Welcome (5 min.)
- Results (20 min.)
- Ideas on how to solve challenges which were identified in the first workshop with respect to the planned CiM services (85 min.)
- Information on further project activities (workshops etc.) and farewell (10 min.)

6.5.1.5 Evaluation of results

Again workshops in the City of Salzburg, in the rural region Pinzgau and in Erba have been conducted. For the workshops minutes have been taken. These minutes have been evaluated and different ideas for solving challenges identified in the first workshop have been

assigned to the planned CiM services. This resulted in a list of target group specific requirements for CiM services which the respective target group is intended to use.

6.5.2 Workshop with older people with care needs

6.5.2.1 City of Salzburg

Date/Time

8.3.2016 13:00-15:00

Participants

1 man (58 years) – 2 women have been excused because they were ill

2 employees of Salzburg Research

Premises

Landesgeschäftsstelle Hilfswerk Salzburg

6.5.2.2 Pinzgau

Date/Time

10.3.2016 08:00-10:00

Participants

1 woman (83 years) – 2 women have been excused because they were ill

2 employees of Salzburg Research

1 employee of the Hilfswerk

Premises

Familien- und Sozialzentrum Zell am See

6.5.2.3 Erba

Date/Time

04.04.2016 14:45 - 16:00

Participants

5 older people with care needs (4 women and 1 man; 84, 85, 89, 91 and 84 years)

1 employee of Aldia

Premises

Spazio Arcobaleno, Erba

6.5.2.4 Workshop content

Services

- Motion promotion

- Motivation
- Information (education)

Motion promotion

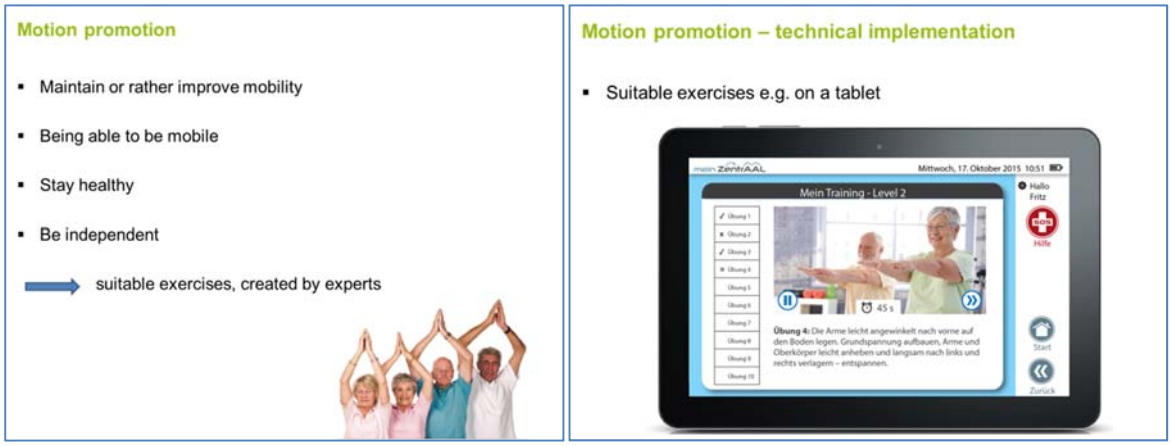
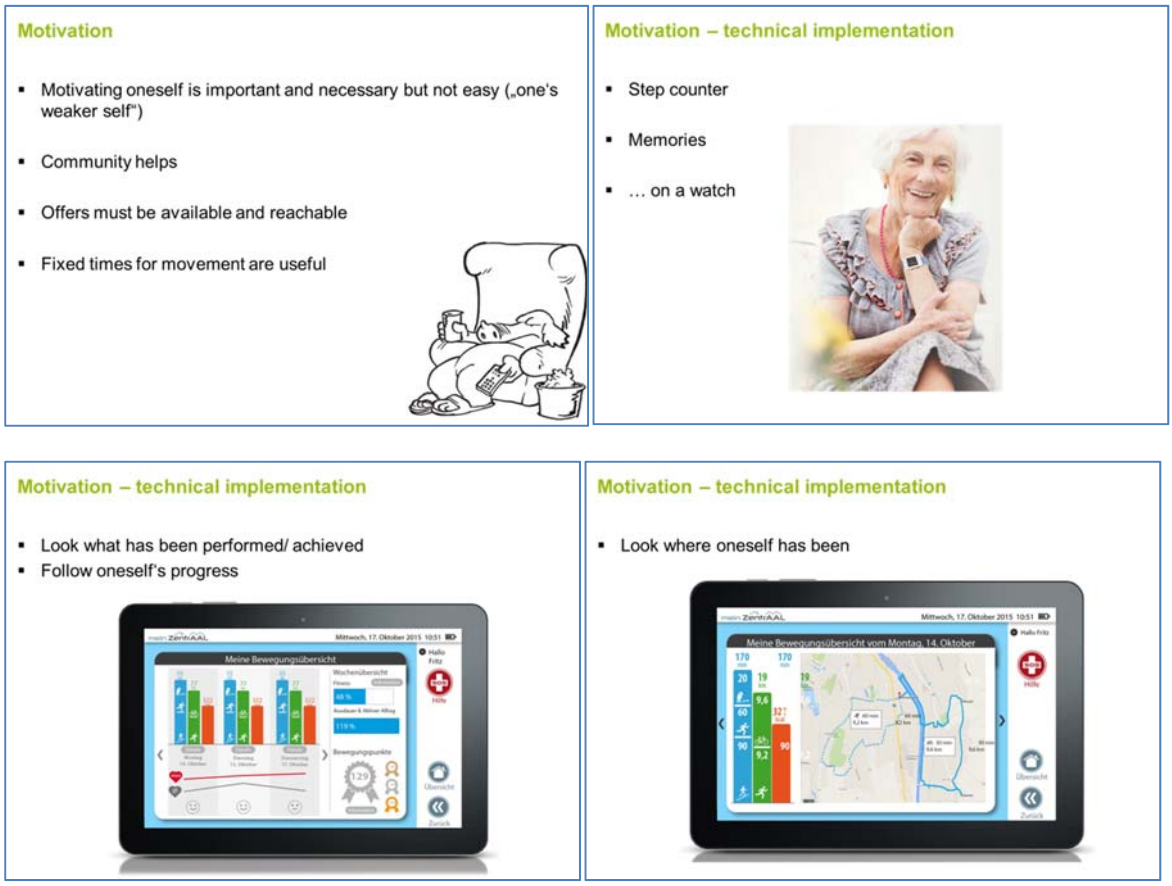


Figure 4: Presentation slides – motion promotion (source: presentation 2nd workshop older people with care needs)

Motivation



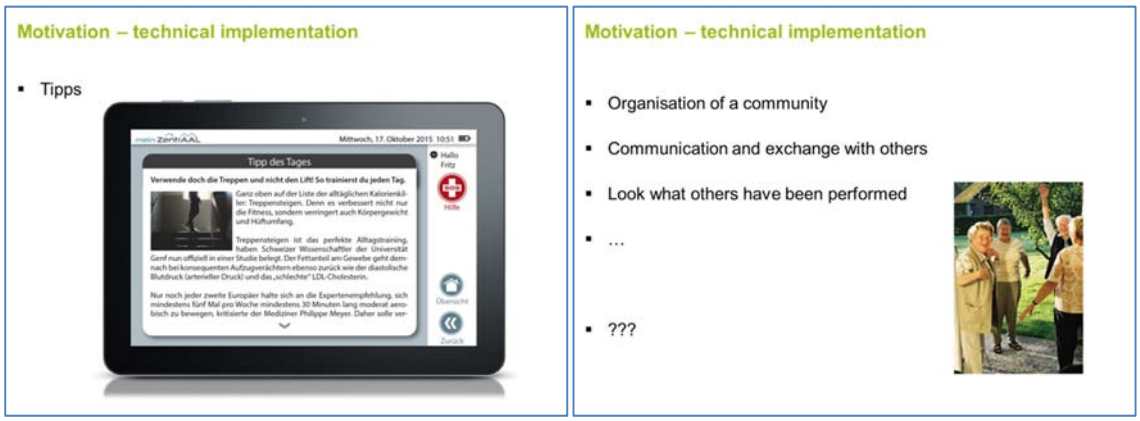


Figure 5: Presentation slides – motivation (source: presentation 2nd workshop older people with care needs)

Information

Figure 6: Presentation slides – information (source: presentation 2nd workshop older people with care needs)

6.5.2.5 Results

Sample characteristics:

- n = 7
  - 1 City of Salzburg
  - 1 Pinzgau
  - 5 Erba

6.5.2.5.1 Motion promotion service

Possible suitable exercises on a tablet:

- stretching exercises of upper leg to reduce/ prevent pain in the back
- move arms behind shoulders
- perform exercises outside
- walking groups
- provide exercises dependent on weather information (in-/outside)
- integration of exercises in everyday life movement - to stoop, to take the stairs, dusting, cleaning the windows
- exercises to improve breathing
- bicycling

Videos of exercises:

- transfer/display them on TV
- videos are big enough
- tablet glares because of the sun
- without the text

Establish a schedule and a fixed day

6.5.2.5.2 Motivation service

Watch as control for oneself and is interesting

Overview of movement

- very good as incentive
- see what and where I achieved something
- can be shown as a proof that I did something - not only talking about what I had achieved
- nice to receive further information on movement
- daily calorie consumption is interesting
- movement points and achieved daily objectives are good incentives

Joy is the best motivation

Older people like the tips of the day

What can others perform - comparison is interesting

Motivating oneself is still very important (e.g. by children, grandchildren)

Motivation depending on seasons - "I'll do it in spring to be fit in summer"

The group can motivate

A tour, a daily trip with others (a walking day)

A dog can motivate

6.5.2.5.3 Education service

Fitness devices (also bike) are expensive

- possible conjunction with willhaben.at or sharing website to compare prices
- "it has to be cheap" - feeling to pick up a bargain

One should be able to share tips with others

Possible topics:

- training on motion exercises
- tips on how to stay healthy or become healthy
- topics concerning traffic: bus, costs, bargains (e.g. westbahn), information of penalties, etc.

- shopping bargains for comparison: where are bargains? Also for seniors? Are there differences between Germany and Austria?
- security in the internet - where are the traps
- tips for keeping animals
- security at home (fire, burglary, etc.)
- TV program: mark favourite series and set up a reminder
- financial support: fundings?
- lending library: lend eBooks and reserve them
- reminders (bus ticket in the other jacket)
- using technologies

6.5.2.5.4 Collaboration service

-

6.5.2.5.5 Community service

Older people like to perform exercises rather with others than alone

- convince neighbours and friends to participate
- who does it with me - how to motivate people

Social care organisation should organize movement meetings at places where many of the participants are interested

- in Mittersill: organize meetings to perform exercises in Caritas centre, gyms, schools, etc.
- in the late afternoon
- in Erba: Aldia organizes walking groups in the park

6.5.3 Workshop with formal carers

6.5.3.1 City of Salzburg

Date/Time

9.3.2016 13:00-15:00

Participants

4 formal carers

2 employees of Salzburg Research

Premises

Landesgeschäftsstelle Hilfswerk Salzburg

6.5.3.2 Pinzgau

Date/Time

10.3.2016 13:00-15:00

Participants

3 formal carers

2 employees of Salzburg Research

Premises

Familien- und Sozialzentrum Zell am See

6.5.3.3 Erba

Date/Time

04.04.2016 16:00 – 17:00

Participants

3 formal carers (3 from domestic support)

1 employee of Aldia

Premises

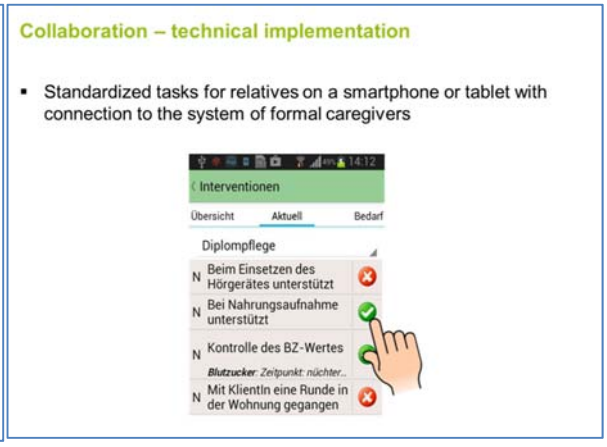
Spazio Arcobaleno, Erba

6.5.3.4 Workshop content

Services

- Motion promotion, motivation
- Collaboration
- Education
- Community

Collaboration with relatives (collaboration)



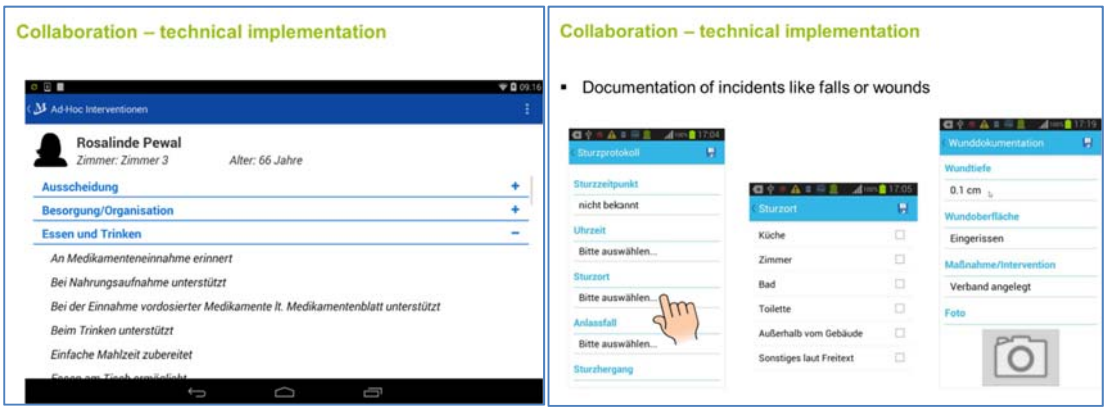


Figure 7: Presentation slides - collaboration (source: presentation 2nd workshop formal carers)

Support of caring relatives (education)

Figure 8: Presentation slides - education (source: presentation 2nd workshop formal carers)

Motivation and motion promotion of care recipients (motion promotion, motivation)

Figure 9: Presentation slides – motion promotion, motivation (source: presentation 2nd workshop formal carers)

Integration of volunteers (community)

Figure 10: Presentation slides – community (source: presentation 2nd workshop formal carers)

6.5.3.5 Results

Sample characteristics:

- n = 10
  - 4 City of Salzburg
  - 3 Pinzgau
  - 3 Erba

6.5.3.5.1 Motion promotion service

Performing exercises is not a task of professional caregivers (tasks are body care, dressing changes, drinking, documenting)

- some perform few exercises some do not
- no resources
- documentation of "just" walking is not possible - has to be in combination with doing groceries
- care recipients do movement exercises with physiotherapists

Interface for care recipients has to be very simple

Few volunteers and few relatives could use the system because many are at an advanced age

Few of care recipients would perform exercises alone and autonomously - but there are exceptions - all of them need help

They need professional help during the exercises

Tablet should be able to stand upright

- show videos and promote care recipient to participate like on TV
- videos have to be recorded with older people - otherwise care recipients won't take them seriously

Videos and font size on the tablet are too small for care recipients

- button to switch from "normal" view to full view and vice versa
- text to video could be read by a verbal playback

6.5.3.5.2 Motivation service

Suitable exercises are more fun for care recipients when performed together with others - positive influence

Comparison of care recipients with others should be separated by age groups or by ability

- comparison depending on diseases is difficult - particularly in small villages everybody knows everyone

To be praised/ obtain recognition is always good

- “fireworks” on the watch right before going to sleep if an aim (exercise, steps) has been achieved

Display of care recipient's progress is important

Display of movement overview

- medals could blink/ light up --> people would be happy
- aligning scale -> smiley scale (people make an effort to make the smiley smile) or weather scale (people make an effort to make the "sun shine")
- track where oneself has been would be interesting for care recipients

Step counter as incentive for care recipients is good

- control by professional care
- smileys -> the more steps the greener and the more the smiley would smile

Always new movement tips

- tips related to current weather situation

Tips have to be aligned to older people

- drinking water, etc.

Memories on the watch for care recipients would be important

- medication
- birthdays
- visits to doctors

6.5.3.5.3 Education service

f2f (face to face) trainings and education from professional caregivers of social care organisations to relatives is very important

Trainings for relatives should be held by professionals (social care organisation) and previous caring relatives (they know what they are talking about)

Offer caring cafés for relatives

- impart information
- promote exchange of relatives

At the countryside courses related to health care are commonly visited by many people

First f2f trainings and education courses by social care organisation and afterwards have the possibility to read contents of courses online at home - a concept which professional caregivers meet with approval

f2f trainings should be organized in intimate conversations ("Stammtisch"= group of regulars)

- should be able to talk about sorrows, fears, etc. with like-minded people
- relatives are overstrained --> should experience that they are not alone
- priority number one: talking
- particularly for the persons who are always around the care recipient

Quiz:

- anonymously: opponent does not know who I am
- individually : just for oneself

Training content in videos is more helpful than pictures --> to refresh training contents at home

Possible training contents for caring relatives:

- lair
- washing
- wound management
- provide contact person for distinct topics
- dementia
- transfer
- suddenly a caring relative: after a hospital stay a relative becomes a nursing case - what should I do now? (do not leave caring relative alone)
- attitude changes of care recipients: why-me-of-all-people-feeling of care recipient, handling of frustration and mood of care recipients
- mental support: take relatives seriously
- costs: how does payment increases if more support is required (financial limitations, not affordable)
- psychological burdens: too many problems within families, missing social backup, little pension

Education for volunteers is important

Possible training contents for volunteers organized by social care organisation:

- first aid
- what do I do in particular situations
- what to do if something has happened - who is the contact person?
- what do I do if disputes/ conflicts arise

- handle heart patients, etc.
- handle aid devices like rollator/walker, etc.
- relieve fears of volunteers
- question concerning liability
- clarify responsibilities
- danger of psychological burden

Training contents for employees:

- who organizes errands, who is responsible for visits to a doctor and prescriptions
    - professional care takes over many tasks out of their task area and do them within free time -> unpaid work
    - tasks for which missing relatives should be in charge
    - a lot of responsibility
    - social care organisation does not assist with information --> this is not its task
    - professional caregivers take over relatives' tasks -> if relatives would do it, it would take too long
    - anything professional caregivers can do, they do (pity care recipients)
- where to report if transfer of care recipient from hospital to house has not been performed correctly/ sufficient enough
- personal distinction to care recipients („do not carry it home“)
- overview where what can be received concerning financial supports (in care levels, social welfare office - which criteria for support/how much pension)
    - opening hours
    - phone numbers
    - location
- how much is the minimum income (in the care levels)? What does it mean?
- changes of criteria for financial support
- for which aids there are prescriptions and for which there are not any - for example, bath tub elevator
- for home helping service: what does the home nursing services do - what are the employees allowed to do
- for home nursing service: what does the home helping services do - what are the employees allowed to do

6.5.3.5.4 Collaboration service

Conjunction/connection to GriPS would be helpful

Short messages to smartphone via MOCCA would be great if something happened - professional can look at changes

Messages are useful bidirectional

- professional knows that he/she will not see relative during caring time

For important things written messages (free text) via MOCCA would be good

- text blocks are not suitable because of very individual important messages

Professional caregivers select tasks for caring relatives

- what can caring relatives perform
- information if tasks have been done or not
- professionals can imagine to arrange tasks for the relatives dependent on relatives' cooperation

Overview of tasks and application for caring relatives is good and interesting

- possibility for professional caregiver to directly ask caring relatives during support/ care period about how activities/ tasks have been performed and if there is any help necessary
- relief
- running errands particularly for older people with dementia --> what has been already done by relatives

For home helping service information about what relatives have already done would be great

Information should be transferred to smartphones

Relatives should be able to document important information

- pain patch has been already changed because care recipient had to take a shower because ...
- visit to the doctor, e.g. because care recipient is injured
- etc.

Relatives should be able to document/ report incidents

- e.g. falls

Documentation of wounds and falls is difficult

- there are not many relatives at the care recipient's home (city)
- at the countryside this documentation would be more useful
- current situation (city): falls are documented by the professional caregiver if the care recipient tells about it
- caregiver receives information of a fall after which care recipient has to be admitted to the hospital
- no photo

Document why task has not been done

Messages to relatives of care recipients would be nice

- particularly if they are living far away
- relatives could receive short message after professional caregivers had visited, for example, that someone was there and everything is alright
- satisfy consciences of relatives (are far away or currently at work)

Online forum:

- provide possibility for relatives to ask anonymously questions
- tablets for caring relatives

- simpler, bigger than a smartphone
- available with a pen - easier than with a finger

City: challenge relatives

- care recipients are often alone, have less or not any contact to relatives
- relatives are not nearby
- relatives live far away
- relatives have no contact to care recipient
- visits to doctors and prescriptions are organized by formal caregivers
- mobile care is and will be relief for the relatives
- will be difficult to address relatives for CiM - how can we motivate them - many have little time and their own lives
- suggestions to involve relatives in communication is good but due to the lack of communication with relatives very difficult

Information exchange between home nursing service and home helping service

- where are parking lots
- on which level is the flat
- is there an elevator

Information for volunteers:

- health status of care recipient (heart, paralysis, etc.)
- which loops can be walked, which cannot - too long, too far, too exhausting for care recipient

6.5.3.5.5 Community service

There should be one contact person at the social care organisation for the volunteers and one person who coordinates the volunteers

At Hilfswerk and ALDIA the volunteers are insured

Organisation of get-togethers of care recipients is difficult

- they do not even come to Christmas parties although employees would drive them there

Organisation of get-togethers of caring relatives is a great idea

- fixed appointment
- little patience - do not expect that a lot of relatives participate right from the beginning
- needs some time but then it could work

Any benefit for volunteers would be great

Assessment of volunteers by social care organisation

- assess what volunteers would want to do (e.g. walking, mow the lawn, chop wood, etc.)

- needs of care recipients should be assessed with the clients and then the volunteers select the care recipient from that list

Recruit volunteers by volunteers

Consider get-to-know-each-other time of care recipients and volunteers

At the countryside there are persons doing social support for going for a walk (volunteers)

6.5.4 Workshop with family carers

6.5.4.1 City of Salzburg

Date/Time

8.3.2016 15:30-17:30

Participants

1 woman (caring for her mother)

2 employees of Salzburg Research

Premises

Landesgeschäftsstelle Hilfswerk Salzburg

6.5.4.2 Pinzgau

Date/Time

10.3.2016 10:30-12:30

Participants

3 women (caring for brother, mother, brother-in-law) – 1 man has been excused

2 employees of Salzburg Research

1 employee of the Hilfswerk

Premises

Familien- und Sozialzentrum Zell am See

6.5.4.3 Erba

Date/Time

21.03.2016 16:00 – 17.00

Participants

2 family carers (1 man, 1 women; caring for wife, mother)

1 employee of Aldia

Premises

Spazio Arcobaleno, Erba

6.5.4.4 Workshop content

Services

- Motion promotion
- Collaboration
- Education

Collaboration

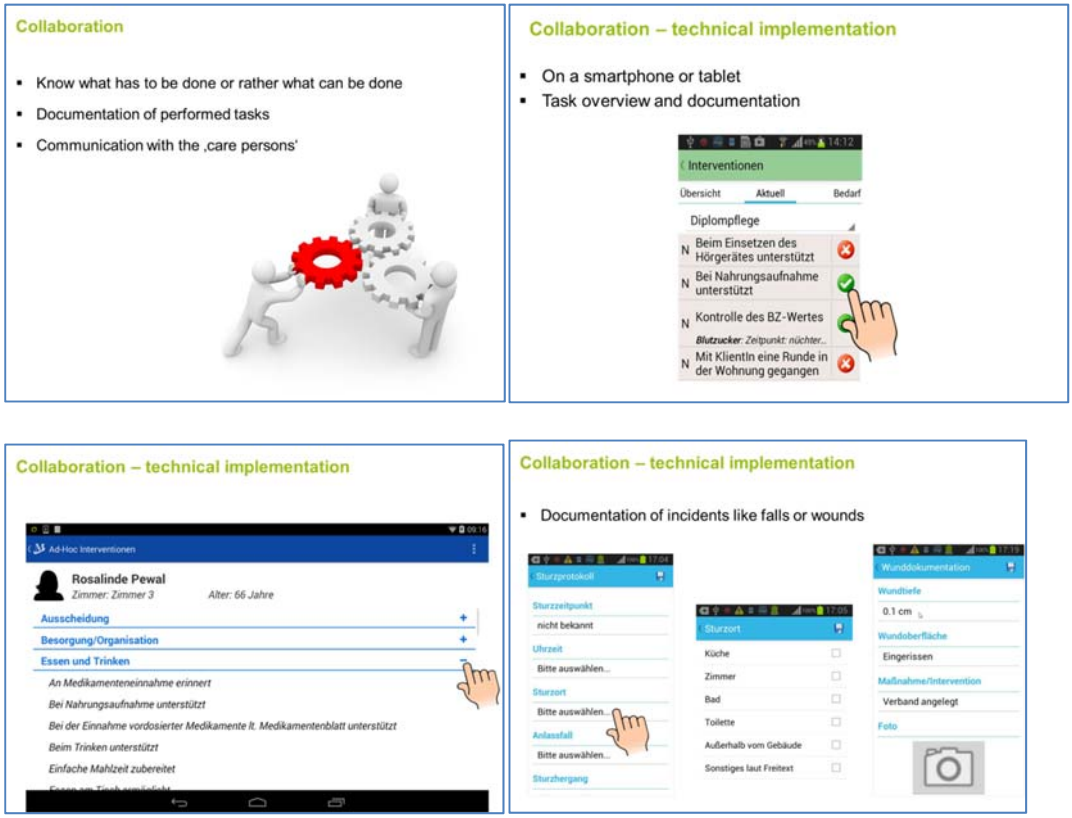


Figure 11: Presentation slides – collaboration (source: presentation 2nd workshop family carers)

Education, training

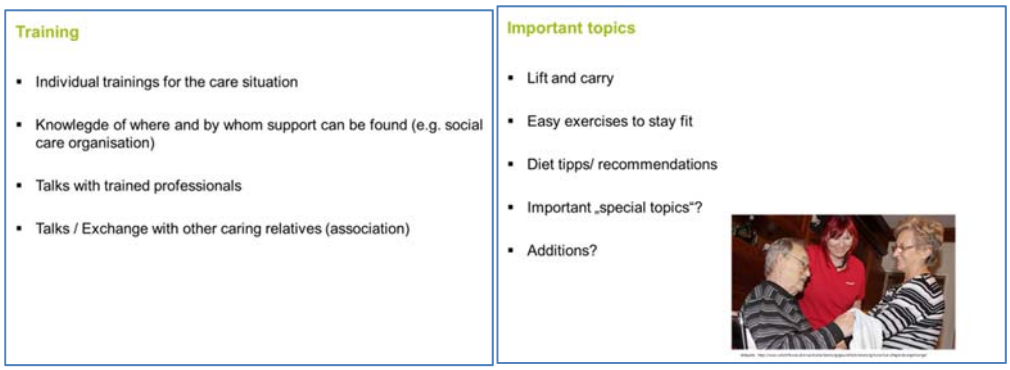


Figure 12: Presentation slides – education (source: presentation 2nd workshop family carers)

Motion promotion

Figure 13: Presentation slides – motion promotion (source: presentation 2nd workshop family carers)

6.5.4.5 Results

Sample characteristics:

- n = 6
  - 1 City of Salzburg
  - 3 Pinzgau
  - 2 Erba

6.5.4.5.1 Motion promotion service

Short videos with yoga exercises

Possible exercises:

- yoga

- dancing
- Pilates
- how to correctly jump on a trampoline
- simple exercises for arms and legs

Videos of exercises are good

- reason why exercise is good
- enlarging the video should be possible
- controlling the mute should be possible
- for care recipients as well as for relatives

Exercises on videos should be renewed monthly - so they do not become boring

Suitable exercises dependent on health status

Showing the correct movement and the wrong movement

Performing exercises together with care recipient

6.5.4.5.2 Motivation service

When care recipient drinks water, he/she receives a reward

Regular exchange of care persons in a chat room

Reward system: instead of coffee and cake offer fruits

- provide healthy alternatives
- for example, receive courses as reward (dancing, yoga)

Watch should not be considered - only for few care recipients useful

- pressure on care recipient
- care recipients should not be overloaded
- instead, exercises and courses as incentive

Movement points of movement overview are for men

Seeing progresses is very important

- listen to own body
- see useful progresses -> individual with different priorities
- danger: could pressure care recipients - different pain feelings and movement status

Some are interested in achieved things and others are interested in progresses

Should be possible to set goals individually

Movement overview/ diagrams are a "woman"-tool

Playfully studying/ learning supported by quiz

- should be anonymously

- it should be possible that persons can play on their own -> prevent fear of failing

Performing exercises together with care recipient (older people)

6.5.4.5.3 Education service

Provide possibility to ask questions

Chat room for care network

- challenge for professionals
- helps non-mobile, by weather hindered and lonely persons
- including 5-6 persons

Care concept on tablet

- look things up

Diet tips are very important - impart them simple and understandable

- what happens if someone drinks too little
- why are fruits good for me

Impart topics with wrong/right columns

- what is wrong/right in the bathroom
- diet tips

Possible topics:

- what happens if the stove is left on
- which offers are in the surroundings? - for example, Kneipp facilities and how do I use them
- natural medicine, Kneipp school
- how to handle tablets (question of generation) - tablet brightness is important, costs and life cycle of a tablet
- how do I handle information
- handling of new media
- reasons why facebook & co. are dangerous
- attention concerning whatsapp
- general data security and safety
- liability questions: what happens if you share information which should not be shared
- know where and who can support relatives
    - dementia: who can support relatives
    - there is no possibility at higher care levels to hire a formal caregiver for several hours if something unusual/ unexpected happens
- how do I recognize if someone suffers from dementia? Where do I find help/support?
- wound management
- improve movement of care recipient – which exercises should be performed
- medications: interactions and side effects: alternatives to medication if it is not tolerated

Blog to share experiences

Relatives should use a tablet to look trainings up while being at the care recipient

6.5.4.5.4 Collaboration service

Checklist of tasks is good

- additional paper templates – if caring relative cannot handle technology

Documentation with technology should be very easy – best would be just a checklist or rather little to write

Caring relatives should be able to insert tasks for themselves and the care recipient --> extend list of tasks

Care recipient should also be able to report things like how much has been drunk

Tablet for care recipient is better than smartphone which is too little and complicated

- care recipients have less fear of tablets

With approval of care recipient: relatives can look up care-related information

Care recipient has to approve who receives information

- no one should be scared of or felt being controlled

Set up a Face Time Video Chat is important

- hence, relatives can talk and see care recipient even when relatives are on vacation – less worries

Regular chat room of all persons participating in the care process

- once a week for 5 minutes every three days
- whatsapp - group
- feeling of control - dare to ask questions
- professional caregivers can send simple messages when they were at the care recipient's home, what has been noticed
- relieves relatives - know about the state of the care recipient without daring to ask caregivers

Professional caregivers leave notes on the tablet for relatives

App with medical/ clinical reports of care recipient

SOS-button

Relatives should use tablets not a computer because the tablet can be carried to the care recipient and then the documentation can be directly inserted

- documentation with pictures is then possible

Professional caregivers would receive more information before they visit

It is important that relatives receive information of professional caregivers in that way

Problem at care recipient's tablet: not everybody should be able to use tablet and look information up

6.5.4.5.5 Community service
Relatives should also take care of themselves

6.5.5 Workshop with volunteers

6.5.5.1 City of Salzburg
Date/Time

9.3.2016 15:30-17:30

Participants

2 women (already working as volunteers)

2 employees of Salzburg Research

Premises

Landesgeschäftsstelle Hilfswerk Salzburg

6.5.5.2 Pinzgau
Date/Time

9.3.2016 15:30-17:30

Participants

3 women (1 already working as volunteers, 2 potential volunteers)

2 employees of Salzburg Research

1 employee of the Hilfswerk

Premises

Familien- und Sozialzentrum Zell am See

6.5.5.3 Erba
21.03.2016 14:45 – 16:00

Participants

3 volunteers (3 already active as volunteer)

1 employee of Aldia

Premises

Spazio Arcobaleno, Erba

6.5.5.4 Workshop content

Services

- Collaboration
- Education
- Motion promotion

Education, training

Figure 14: Presentation slides – education (source: presentation 2nd workshop volunteers)

Collaboration and communication

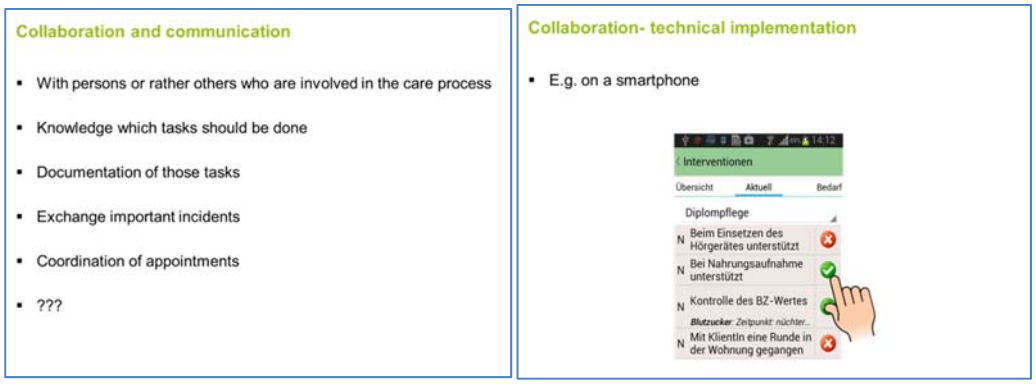


Figure 15: Presentation slides – collaboration (source: presentation 2nd workshop volunteers)

Motion promotion

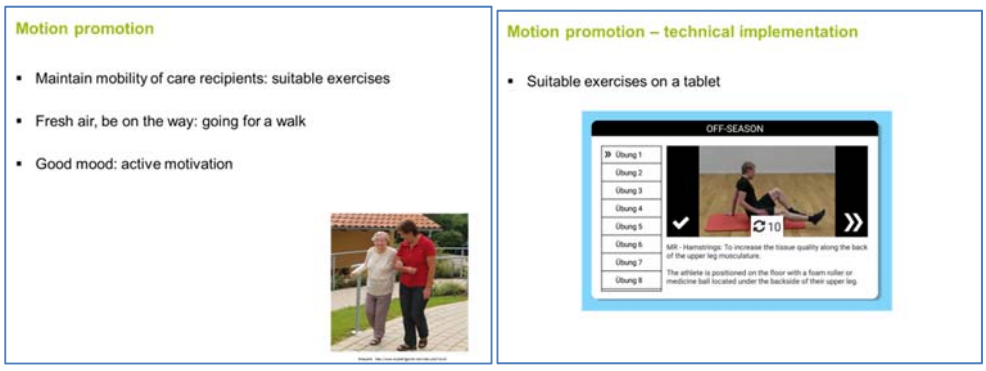


Figure 16: Presentation slides – motion promotion (source: presentation 2nd workshop volunteers)

6.5.5.5 Results

Sample characteristics:

- n = 8
  - 2 City of Salzburg
  - 3 Pinzgau
  - 3 Erba

6.5.5.5.1 Motion promotion service

Exercises have to be defined precisely

Videos of exercises

- breathing exercises
- exercises while sitting
- exercises in the bed
- passive exercises (tension and relaxation)
- stretching exercises
- walking outside with other people

Mobile tablet stays at older people's homes

Exercises will be executed by older people more likely with "strangers" than with relatives

6.5.5.5.2 Motivation service

Increase exercise level

- 3-4 exercises for one week
- next week an increase of exercises/ exercise level

Movement overview is interesting for older people

Provide information about offers in the surroundings at which older people can participate

As less challenges as possible for volunteers (e.g. optional insurance)

Establish a schedule and a fixed day

6.5.5.5.3 Education service

Education/training is very important for volunteers

There should be topic-related education modules

Quiz would be nice -> for studying and memorizing

Meetings with other volunteers to discuss the training

Meetings with the formal caregivers to discuss the training

Message forum - insert comments or suggestions

Process courses so that the contents can be backtraced/ imparted at home

Imparting topics with wrong/right is good

- for example, how do I use a rollator or how to set a rollator

Suggested contents for trainings:

- data security
- technologies
- general introduction: why volunteering, what do I need - imagination of volunteering, personal distinction, temporal structure (when do I want to volunteer)
- insurance
- which aid devices are available and how to use them
- what I am not allowed to do as volunteer
- confidentiality
- dealing with older people: no discussion with older people about sensitive topics, violence, also psychological violence in the care situation (sensitive topics like politics, religion, etc.)
- know contact person - who should be contacted in an emergency case
- contents for specific needs - e.g. "diabetes and nutrition", "cardiovascular disorders, specific needs"

Contents for education of special tasks

- for example installation of key safes

Educate volunteers - which movement exercises are available and what should be considered (e.g. osteoporosis patient - what is possible and what is not)

Education for older people - what is ok, what is not and how and where to report inappropriate volunteers?

6.5.5.5.4 Collaboration service

Volunteers need information about people - from formal carer

- what do they (not) like?, etc.
- know the health status of the care recipient, for example, how far a person can walk

Volunteers need contact person at social care organisation

- who should be contacted in an emergency case

Exchange of information between volunteers is important

- for example, meals on wheels: driver of the current week tells driver of the next week about news like what happened last week etc.

Communication is important

- for example, meals on wheels: person needs aid to open meal box but driver does not know. Driver thinks, "why did not anyone tell me?"

Professional care has to prepare what the patients want volunteers to do

Tasks have to be defined precisely

- before beginning, at least one week before
- no vague task area
- for each care recipient - which tasks
- checklist - what has been performed
- additional tasks have to be reported to/clarified with the centre

Prepare what older people like to do with volunteers and what the relatives think of that

Volunteers should be able to leave notes

At the beginning: guided volunteering - volunteer is accompanied by professional

6.5.5.5.5 Community service

Central organisation (centre) of volunteers

- professional coordination
- volunteers are contacted if they are required
- responsibility of centre - what does this mean? - define processes precisely

Control of volunteers by documentation of tasks and feedback to them, meetings and get-togethers

- evaluate activities and discuss them within meetings
- evaluation once a half-year

Centre has data bank of volunteers

- where are volunteers
- availabilities
- tasks - what do the volunteers do
- sympathies - who does a volunteer want to visit
- which persons do volunteers not want to visit (specific diseases, gender, smoker/non-smoker,..)
- preferences of relatives and older people
- attitudes of older people (think positive/ negative)

Challenges with filtering of suitable volunteers and older people

- matching: volunteers to older people, what does volunteer like, want to do and are there any preferences

Possible tasks of volunteers

- assess from older people possible tasks
- older people should think about what they want and they should be asked what they want
- ask people to develop ideas of possible tasks - give older people examples, ideas

Older people should be able to reveal their interests and share them with others (also other older people)

- for example, playing cards, watching movies, etc.

Some things are not assessed by social care organisation, for example, alcoholism

Provide possibility where volunteers can ask questions

- for example, provide a forum in which volunteers ask their questions and professionals answer them

Feedback of volunteers is very important

- centre calls volunteer to check if everything went fine after the visit
- give older people the possibility to report inappropriate volunteers

Networking: meeting of volunteers once a half-year

Check insurance of volunteers - is there one and how does it look like

Hours of volunteering should be credited

- in life everything should not be taken for granted/ free of charge
- get something in return as volunteer
- particularly important if only a little pension is available (cannot pay for care in the future)
- compensate with driving costs for example

Informed consent for volunteers, certificate of good conduct of volunteers

Do not forget volunteers during the project - keep them up-to-date about project progress

- volunteers should not be left alone

6.6 Coordination meeting of project partners

The coordination meeting of the project partners concerning the user requirements was conducted as part of the consortium meeting in Pavia.

A summary of the results of the two workshops was presented. For each service, requirements and functions have been discussed.

7 Results of user requirements analysis

7.1 Requirements and functions

7.1.1 Motion promotion service

Especially elderly lead users told us that staying mobile is important for them. Mobility means:

- Social inclusion
- Possibility to live self-determined/alone
- Independence/freedom

The workshops have shown that despite some limitations in mobility older people are interested in exercises and are aware of the necessity to perform exercises. However, they also mentioned that it is often difficult to overcome oneself to do so. They would prefer to do exercises together with other people:

- Group of older people with nearly the same fitness level
- Family members
- Volunteers

It turned out that it will be hard to motivate formal carers to perform exercises with older people because they think this is not their task.

However, family members are interested in motion promotion but only for their relatives in need of care and not for themselves. Nevertheless they would perform exercises with their relatives.

All lead users agree that the system has to be simple and easy to use.

Requirements which can be derived from the workshops are:

- Individual set of exercises depending on the fitness level
- One-time personal training on how to perform exercises
- Guided training with dedicated exercises and instructions on how to perform these exercises
- Reminders in order to perform exercises regularly (possibility to set fixed times)
- Possibility to perform exercises together with other people

From the workshops following **functions** for the motion promotion service have been derived:

- Training plans (including possibility to plan fixed regular times for training; possibility to alternate exercises; possibility for reclassification if fitness level in- or decreases)
- Guided training instructions (video and written description)
- Reminders in order to not forget the training
- Overview of training results

7.1.2 Motivation service

For our elderly lead users, motivation to perform exercises is almost as important as performing the exercises.

Older people with care needs and formal carers told us, that tips for older people regarding the maintenance of their current health status would be useful and perhaps motivate them. Relatives would prefer tips for easing their burden.

Elderly lead users reported that performing exercises in groups or together with their relatives would motivate them and improve social inclusion.

All lead users agree that an overview of the training results would be motivating from different points of view:

- Overview of achievements
- Overview of progress
- Possibility to show others what has been done
- Gather points/stars/medals/smiles (reward)

A fancy gadget like a modern pedometer or a smartwatch, which only a few people possess, would be motivating. This gadget should be able to count steps/kilometres and calories. An additional goody of this gadget could be a SOS button. This could motivate them to go outside because they feel safe.

Older people are sceptical regarding challenges with others. But they would like to be able to compare themselves anonymously with others at nearly the same fitness level.

Requirements derived for the motivation service are:

- Tips for older people and informal carers
- Group activities
- Overview of results with rewarding system
- Gadget for counting steps/kilometres and calories

From these requirement following **functions** can be deduced:

- Tips for older people and informal carers
- Rewarding system (extension of overview of training results)
- Gadget for collecting movement data and providing SOS functionality

7.1.3 Education service

All user groups told us that a course for using the CiM systems will be necessary. They think that face-to-face (f2f) training in combination with online courses for refreshing certain topics would be suitable.

Most of the workshop participants would like to refresh different course topics by playing quizzes on a mobile device.

Some of the workshop participants suggested to have meetings with others also using CiM to exchange experiences.

Requirements:

Courses dedicated for care workers:

- They reported that courses for them already exist and that they are happy with them
- Maybe: Information about care allowance and services of their company despite care

Courses dedicated for relatives:

- Care related instructions like “How to lift or carry older people”
- Exercises to maintain fitness and how to motivate them
- Diet for older people
- Furnishing and daily business

Courses dedicated for older people:

- Exercises to maintain their current health status
- Diet
- Furnishing and daily business

Courses dedicated for volunteers:

- Introduction to first aid
- What does volunteering mean (insurance etc.)
- How to deal with older people in different situations?

Following **functions** for the education service can be derived:

- Create courses (with different content for different user groups)
- Execute courses
- Quizzes for different user groups with different content

7.1.4 Collaboration service

Formal carers reported that they sometimes feel like “the man in the middle” between care recipient and relatives. They agreed that communication is important but it depends on the situation/relatives whether this communication is working or not. Relatives sometimes phone them, write them e-mails, write into their report etc.

Family carers sometimes feel alone with their care situation. In many cases they do not know who they can ask care specific questions. A communication channel between formal carers and family carers would be appreciated. They also mentioned that a checklist where all tasks they can perform are written down would help. Some of them told us that they would be willing to use a tablet to document tasks they have done or important things concerning the elderly like how much he/she has drunk etc. During the discussion it turned out that family carers are aware about data protection issues. They also mentioned that only relatives whom the care recipient accepts should be able to see care related information. Another important point they mentioned was that they would be interested in a possibility to directly exchange with formal carers, for example, in a chat room, group, notes on tablet etc.

Volunteers told us that they are interested in general information about the care recipient:

- How far can they walk

- Contact person in case of an emergency
- …

They are also interested in a lively exchange between volunteers even when volunteers care for the same people. A task list with tasks they should perform with each care recipient would be appreciated. They also mentioned that they should have the possibility to leave notes (e.g. tablet) for relatives or formal carers.

In summary following **requirements** for the collaboration service can be written down:

- Information channel for formal carers, family carers and volunteers
- Communication channel between formal carers, family carers and volunteers
- Possibility to leave notes on an electronic device
- Data protection
- Task list for family carers and volunteers

From these requirement following **functions** can be deduced:

- Task list with care guidelines for family carers/volunteers
- Communication channel
- Information channel
- Electronic notes

7.1.5 Community service

Older people told us that this service might help that they need not perform their exercises alone. They think that maybe friends or neighbours can be motivated. It would be appreciated that social care organisations organise “exercise/movement” meetings where they can meet regularly.

Formal carers mentioned that a responsible person for volunteers is needed (coordination):

- Who needs a volunteer?
- When do volunteers have time?

They think that it will be challenging to bring people together because they know that even for Christmas parties where they drive the older people they do not come. They propose to organize meetings for relatives. Additionally, they told us that it will be important to assess what a volunteer can do and what care recipients need. In order to bring volunteers and care recipients together they would recommend planning an event.

The data protection issue was again brought in by family carers. They think that a volunteering network should be set up by a social care organisation. Another aspect they stressed out was that it might be an advantage when a volunteer already has experiences with older people.

Volunteers told us that a professional coordination is necessary. They would like to be contacted if they are needed. The process of volunteering has to be defined precisely and responsibilities have to be clear. A documentation e.g. which tasks have been performed etc. would be useful. Based on this documentation, volunteers can be evaluated and there is a possibility to check whether things have been done right. They also mentioned that

volunteering hours should be credited (points, certificate etc.). A compensation for several expenses would also be expected (e.g. driving costs). A very important point they mentioned is that they would not like to have the feeling of being left alone.

Following **requirements** can be derived for the collaboration service:

- Process for recruitment
- Process for volunteering
- Management of volunteers
- Tasks of volunteers
- Credits for volunteers
- Documentation for volunteers

From these requirements following **functions** can be deduced:

- Administration of volunteers
- Management of volunteers (time slots etc.)
- Time and task documentation
- Functions already mentioned in 7.1.4 (task list with care guidelines for volunteers, communication channel, information channel)

7.2 Personas

7.2.1 Definitions

In recent years in software development projects user centred approaches have prevailed. Among others this is reflected in the ISO 9241-210:2010 (*ISO 9241-210:2010 Ergonomics of Human-System Interaction -- Part 210: Human-Centred Design for Interactive Systems* 2010). Potential users/customers move into the centre of the development process. Since in many projects people with different backgrounds work together they have different ideas on how a potential user/customer might look like. Therefore, the persona approach is used to develop a common, homogeneous picture of the user (Arnold, Gaiser, and Panke 2005; Cooper 1999). Thus, the user is tangible for all project partners. Personas are used to get an insight into a likely user profile. This approach is not intended to fully reflect the reality; however, it provides an idea of the user based on motives and aims of real users (Cooper, Reimann, and Dubberly 2003). By the use of personas it is possible to design for specific user groups – software for “someone” rather than for “everyone” (Holt, Winter, and Thomaschewski 2011).

7.2.2 ICF enriched Personas

It has been shown that especially AAL projects are very complex regarding their potential users. This might be due to the heterogeneity of the target group. In addition to

- Characterization of the potential user
- Needs and behaviour of the potential user and how this may change over time
- Motivation and expectation of the potential user with respect to the system

It might be necessary to also include social and health aspects by the use of ICF (International Classification of Functioning, Disability and Health) (Queirós et al. 2015):

- Physical condition
- Activities both alone and in groups
- Context factors both environmental factors (e.g. technical systems or services) and personal factors (e.g. as already described for “normal” Personas – specific life stories, individual lifestyle or daily activities)

7.2.3 Austrian Personas

7.2.3.1 Persona 1: Martha - 80 (older person with care needs)

Age	80
Gender	female
Family status	widow, two daughters, one son-in-law, three grandchildren
Origin	Austria
Native language	German
Education	Vendor (vocational training)
Lives in	A flat in a village (~3.000 inhabitants)

pixabay.com

Technical background	Martha owns a mobile phone
Use of technology	TV, mobile phone (feature phone)
Socio-economic background	Martha lives alone in a small flat on the third level. She has been living there for 15 years. Currently, there are 5 neighbours within the house to whom she is well acquainted. Since there is no elevator in the house, she always uses the stairs, though she needs a cane for longer distances.
Living	Martha lives in a beautiful small flat (bed room, kitchen/living room, bath room) with a balcony on the third level.
Hobbies	Martha likes to go for a walk, though for longer walks she needs a cane. She likes to play with her grandchildren, particularly cards. Reading books is her passion.
Life Style	Martha likes to go for a walk at least twice a day. She goes outside even when it is raining. To be outside and in nature is very important for her.
Concerns/ Fears/ Problems	She fears that she might lose more mobility with increasing age. Bicycling and longer walks or hikes are already impossible. Also she is afraid of hearing loss which could reduce her life quality. She is afraid of social isolation through disease. Losing her friends would be very tough.

Social networks

Family	Martha’s husband died 15 years ago. She hast two daughters. Her first daughter Susi lives in the next village. Her second daughter Laura lives in Germany. Martha has three grandchildren who come and visit her sometimes. Susi visits her with her children (Sarah, 10, Tamara, 12 and Lukas, 14) once or twice a week. Laura visits at least every two months and on holidays. She is a physiotherapist and gives her mother exercises which she sometimes does.
Friends	Martha’s neighbours are her friends. Berta and her husband Gert live next door and often invite her to watch TV or to chat. Gert also helps her when easy repairs have to be done, for instance, changing light bulbs. Since her husband’s death she has lost contact to many friends.
Informal care/ support network	There are some acquaintances in the village which she meets at the supermarket or on her walks.
Formal care	A home help comes once a week to help cleaning the flat and doing the

	groceries.

Health (ICD-10)

H52.4 Presbyopia	Presbyopia; She needs reading glasses.
I10	Essential (primary) hypertension; She suffers from high blood pressure
R26.89	Other abnormalities of gait and mobility; She suffers from gait weakness. When she walks longer distances she is and for longer distances her gait is unsteady.

Functional status

ADL	For longer distances she needs a cane to walk. Martha does not need help with hygiene, eating or dressing.
iADL	She still does light housework like cooking and cleaning the dishes but her daughter Susi helps her, for example to clean the windows. Once a week a home help comes to clean the flat and do groceries with her due to heavy bags and the absence of an elevator. She likes to cook but does only easy dishes because she likes to cook for others and not only for herself. When her grandchildren come, she loves to cook for them.
Functional fitness	Martha needs a cane for longer walks outside of her flat. Nevertheless, she likes to move and do easy exercises, for instance, to activate herself in the morning.

Daily routine

Martha wakes up between 07:00 and 09:00. She has breakfast for an hour with a good coffee and reads the newspaper. At about 10:00 her daughter Susi calls her. Then she goes for a walk in the surroundings, for instance, to the local bank, and sometimes she does some little groceries like buying a piece of cake at the bakery. When her grandchildren or her daughter come to visit her, she cooks lunch for them. Otherwise she does some housework, talks with her neighbours and cooks an easy dish for herself. In the afternoon she goes for a second walk. When her grandchildren are with her, they play games like cards or she looks after them while they are playing outside. In Summer they like to go to the ice store for an ice cream. She likes to read books in the afternoon or do some handcraft. At about 17:00 she has a snack for dinner and afterwards she likes to watch TV. Sometimes her neighbours Gert and Berta invite her to watch some shows like Carmen Nebel or ski races with them.
She does not go very often on vacations anymore. Sometimes she attends excursions with other retirees and if she is in good health, she visits her daughter in Germany for longer weekends. Twice a year, she stays with her grandchildren, Susi and her husband Peter at a house at a lake for a week.

Needs

Martha would like to stay mobile and maintain her current health status as long as possible. She already is limited within her mobility due to her cane. She does not like to rely on it in the flat. She would like to become stronger or rather receive information on how to move more beneficially.

Although, her daughter Laura gives her some exercises she would like to have professional guidance of the exercises. She would like to do exercises together with her neighbours or other persons in the village. Martha would like to know how much she has moved on one day. She heard about step counters and would like to try one of them.

Martha feels very lucky that she comes along with all her neighbours in the house and that she can rely on their help. Nevertheless, she fears losing her friends due to social isolation because of illness. Once she was sick and could not leave the house because it was impossible for her to use the stairs. At that time she felt very lonely and abandoned from her friends.

Martha likes to read and would like to inform herself about information concerning diet and new technologies. She would like to be informed about new technologies because when Susi or her grandchildren visit her they sometimes talk to her daughter Laura via Skype. She would like to be able to use it independently at home too.

Corresponding CiM functions

1. Motion promotion service
    a. provide health-enhancing physical activities, exercises
2. Motivation service
    a. step counter, overview of movement
3. Education service
4. Community service
    a. perform exercises with others
    b. include neighbours as volunteers

Table 4: Persona 1 (source: own representation)

ICF-Model

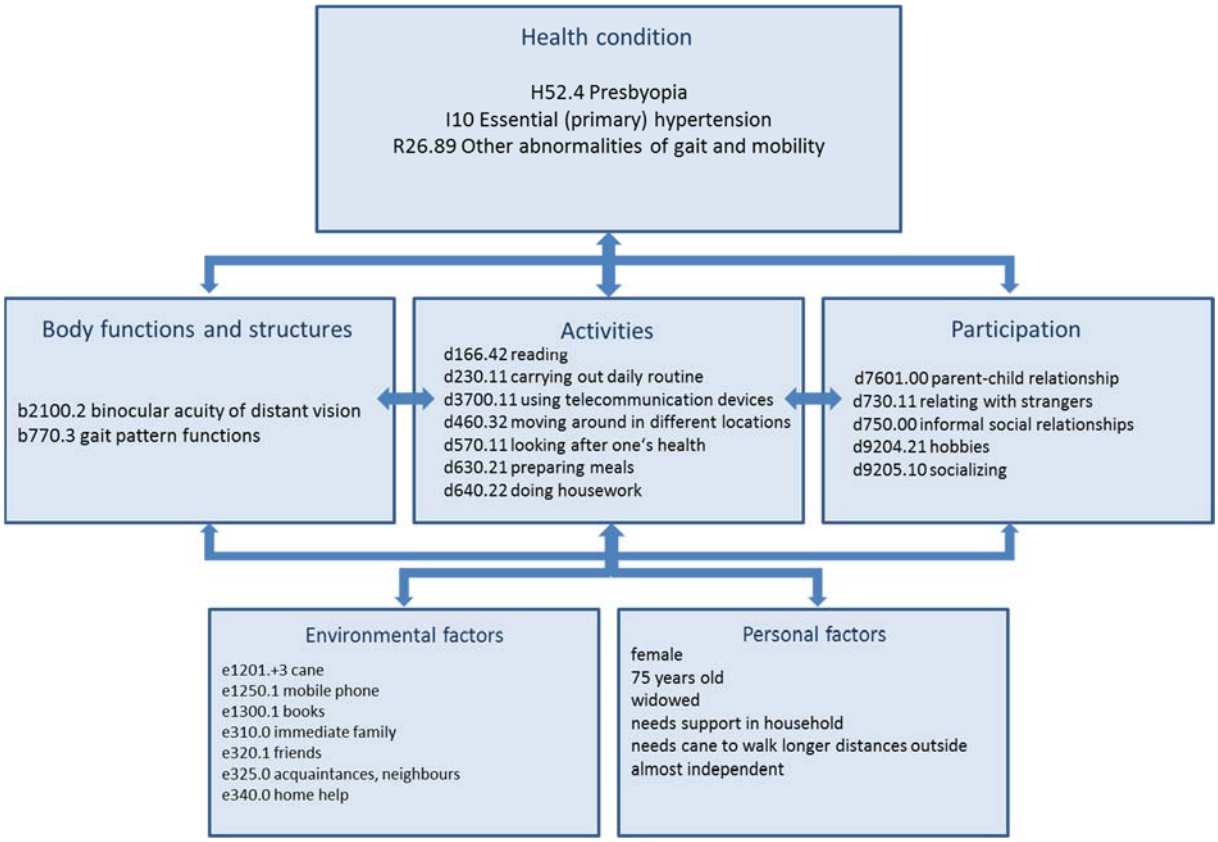
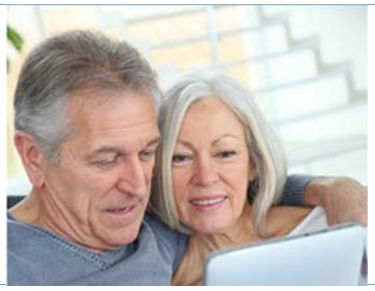


Figure 1 ICF Model Persona 1 (source: own representation)

7.2.3.2 Persona 2: Renate (caring relative)

Age	60
Gender	female
Family status	married with Alex for 35 years, lives together with her husband, two daughters and a son
Origin	Austria
Native language	German
Education	Waitress (retired)



Lives in	She lives together with her husband and her father-in-law (Arthur) in their house at the countryside.	Fotolia.com
Technical background	She has a smart phone and a digital camera. At home she has a PC to do online-banking and manage her photos.	
Use of technology	TV, PC, smart phone, digital camera	
Socio-economic background	Renate together with her husband cares for her father-in-law Arthur who is in care level 2. He had a stroke two years ago and since then he came a long way to recover to independence. Now, Arthur has some issues with walking in the house and he needs a cane when walking outside. Nevertheless, he is mentally fit. Since her retirement Renate is responsible for most of the care of Arthur. They receive help from the Hilfswerk Salzburg twice a week. She receives an average pension. Her husband and she own a car.	
Living	Renate lives together with her husband and her father-in-law in a house with a small garden. The house is established and furnished barrier-free.	
Hobbies	She likes to do yoga and go on bicycle tours with her husband.	
Life Style	Although it is exhausting, Renate likes to care for her father-in-law. His smile and sparkling eyes are enough in return.	
Concerns/ Fears/ Problems	Renate is afraid of not being able to care for her father-in-law anymore, for instance, if she becomes sick. When her father had been in need of care, she shared care activities with her siblings. After the death of Arthur's wife, Arthur has only her family left. Also she is very afraid to forget of herself and her free time which has been the case right after Arthur's stroke. She fears that Arthur's current health status might deteriorate. Renate fears social isolation because since her retirement she takes care of Arthur. She likes to care for him but sometimes she would like to share experiences with others. Her husband feels so too. Mobility is very important to her. She would like to have more time to do more bicycle tours with her husband. Currently, there is some time for leisure activities..	

Social networks

Family	Renate and Alex have two daughters and a son: Luisa, Maria and Thomas. All three live with their families close by (radius of 30 km). Their children help them whenever they plan a short vacation.
Friends	Renate has some friends in the surroundings. She likes to meet them. When they meet, they usually meet at Renate's house. The number of friends has been reduced after Arthur's stroke because at that time she had not any time for herself and some of her friends were not interested to stay in contact.
Informal care/ support network	Renate is supported by her husband. He is still employed as civil engineer but close to his retirement. He helps to clean the house and does easy repairs. Particularly, at the weekends he helps with the care of Arthur.
Formal care	Home nursing service visits twice a week and supports Renate.

Health (ICD-10)

M54.9	Dorsalgia, unspecified; Renate suffers from back pain.

Functional status

ADL	Renate is independent.
iADL	Renate is independent.
Functional fitness	Renate likes to move and does yoga not very often because of her back pain. She goes for walks and on bicycle tours with her husband. Sometimes she does easy exercises or goes for a walk with Arthur.

Daily routine

Renate wakes up between 06:00 and 07:00. She makes herself ready and prepares the breakfast for Arthur and Alex. Arthur wakes up around 07:00 and 08:00 when Alex has to leave for work. She helps Arthur to wash and dress. Then they have breakfast together. Before noon they like to go outside for a walk. She likes to read a book to Arthur so he can relax in this time. Renate prepares lunch for Arthur. They have lunch at around 12:00. In the afternoon Renate promotes Arthur's mental and physical fitness by doing exercises. Twice a week the home nurse from the Hilfswerk visits them. During this visit, Renate sometimes does groceries or some housework. They go for a walk in the afternoon again. In the evening her husband Alex is back from work. Arthur goes to sleep at around 20:00. Sometimes their children Luisa, Maria or Thomas take care of Arthur for a day so that Renate can do something with Alex or just for herself.

Needs

Renate feels sometimes insecure when dealing with Arthur. She would like to support him more while walking outside but she does not know how to not impair him with his cane.
She would like to do more yoga or other suitable exercises alone or with Arthur to stay healthy and also to offer variety of her and Arthur's daily routine.

She fears that Arthur's current health status might deteriorate so that she would have less time for herself. To avoid such situation she would like to do or offer Arthur something which supports him in maintaining his current health status as long as possible.

She does everything which can help Arthur. Although her husband supports her, she feels often alone with the care situation. There is sometimes a helplessness concerning where to find support or to whom questions could be addressed.

She is happy when mobile care supports her. She would like to tell them what she has already done with Arthur. Renate thinks that it would be also great to let her husband know what has been done and what he could do.

She feels that she withdraw herself more from social life since her retirement. She would like to share her experiences with people in the same or similar situations. Renate thinks that talking and listening are very important. At least she has her husband and her children who listen to her. Nevertheless, she would like to meet new people.

Concerning variety of their daily routine, she would like to receive some new recipes for Arthur. She has a list from the hospital but she would like to have more ideas how to combine those ingredients.

Corresponding CiM functions

1. Motion promotion service
    a. Performing exercises with Arthur
2. Education service
    a. Courses on care topics
3. Motivation service
4. Collaboration service
    a. Care task list
    b. communicate with carers
5. Community service
    a. Integration of volunteers

Table 5: Persona 2 (source: own representation)

7.2.3.3 Persona 3: Anton (volunteer)

Age	63	

Gender	male	Fotolia.com – Daria Filiminova
Family status	married (for 35 years), 2 grown-up children	
Origin	Austria	
Native language	German	
Education	Electrician	
Lives in	The City of Salzburg in a flat with his wife.	
Technical background	Anton had worked as an electrician until his retirement. He owns a smartphone and a PC. Among others, he uses the smartphone to stay in contact and skype with his children.	
Use of technology	TV, PC, smartphone	
Socio-economic background	Anton had worked as an electrician until his retirement. Since then he drives for meals on wheels for one week every 9 weeks. Furthermore, he is the chairman of the ice stock sports association. He and his wife Maria receive an average pension. They own a car.	
Living	Anton and Maria live in a house with a garden.	
Hobbies	Anton likes gardening and playing ice stock sports. He likes to move and go for a walk. Furthermore, his wife and he do some gymnastics within a local group of seniors once a week.	
Life Style	They like to be at home or travel to their children.	
Concerns/ Fears/ Problems	He is sad that his children live far away. When driving for meals on wheels he meets many lonely people without families and he is afraid that this will be his future too.	

Social networks

Family	Anton is married to Maria. They have two children: Lukas and Simon. Both are living abroad. They see each other regularly on holidays. Once or twice a year Anton and Maria visit them in Switzerland or rather in Poland.
Friends	Anton has friends in the ice stock sports association as well as in his gymnastics group.
Informal care/ support network	When repairs have to be done or he needs a helping hand, his friends from the ice stock sports association help him.
Formal care	He does not need formal care services.

Health (ICD-10)

	None

Functional status

ADL	He is independent.
iADL	Anton works in the garden and takes some tasks in the household such as doing the hoovering. Regularly, he does the groceries together with his wife. Most of the time his wife cooks. He does the barbecue, particularly during the summer season.
Functional fitness	He is generally fit. Anton does once per week gymnastics with a local group of older people. He plays ice stock sports in an association. Furthermore, he does bicycling and hiking.

Daily routine

Anton wakes up between 07:00 and 09:00. When he is in charge of doing meals on wheels, he drives to the close care home where the meals are prepared. On Monday morning he calls the driver of last week to receive latest information concerning their route and people. Then he loads the car with the boxes and starts his tour. In two to three hours he finishes his tour. Afterwards, he has lunch with his wife and in the afternoon they do different things like visiting friends, working in the garden, riding bicycles, hiking,

watching TV or skype with their children. Once a week he and his wife go to gymnastics. In the winter season he regularly goes to meetings of the ice stock sports association.

Needs

When driving meals on wheels, Anton is worried about misunderstandings or lack of information. For instance, once no one told him to open the meal box for an older lady. Instead of telling him the older lady tried to go with the heavy box to her neighbours and on her way she fell and broke her leg. He would like to have a standardized communication tool to share information for meals on wheels drivers. It would be also nice to know if there are home nurses or home helps at the older people' homes when they are coming, particularly, if the older people need aid to eat or need to measure their blood glucose level before they have their meals.

He would also like to know what he has to do or whom he can contact if unexpected situations at older people' homes occur. For instance, he came to a person who lied on the floor and was not able to stand up on his own. He did not know what to do so he lifted the person and carried him to his bed. It would be very helpful in his opinion to have a contact person so that he knows when help is coming or what he should do or rather is allowed to do.

Anton would like to have some education like first aid or how to lift and carry the meal boxes correctly. He is not sure if the weight of the boxes harms his back.

He likes to speak with the meals on wheels drivers and share experiences. In his area there are many drivers but he knows that there are other areas with less or none drivers at all. He complains about the lack of promotion for the meals on wheels service.

Due to his experience with the gymnastics group, he would like to engage people to do easy exercises. He already motivates his wife to do sports and exercises with him. He thinks that exercising with more than one person can motivate people.

Corresponding CiM functions

1. Collaboration service
    a. Sharing information between volunteers and formal caregivers
    b. Contact person at social care organisation
    c. Volunteer meetings
2. Education service
    a. First aid
    b. How to correctly lift/carry meal boxes
3. Motion promotion service
    a. Do easy exercises with older people
4. Motivation service
    a. Performing exercises with him

Table 6: Persona 3 (source: own representation)

7.2.3.4 Persona 4: Hannah (home nursing service)

Age	48
Gender	female
Family status	married (for 15 years), one married daughter, two grandchildren
Origin	Austria
Native language	German
Education	School for general healthcare and nursing care in Salzburg
Lives in	Himmelreich in a flat

Hilfswerk

Technical background	Due to her three children she knows how to use a PC and the care management system MOCCA on her smartphone. At home she has a PC for online banking, administration tasks and for managing her photos.
Use of technology	TV, PC, smartphone, digital camera
Socio-economic background	First, Hannah worked in the home helping service of Hilfswerk Salzburg. After some years she had the wish to become a home nurse because she likes supporting and working with people. After her three-year education period, she has been working in the mobile home nursing care service of Hilfswerk Salzburg for 10 years.
Living	Hannah lives together with her husband Wolfgang in a flat at first level with a small garden outside.
Hobbies	Hannah likes to go for a walk, hiking, bicycling, swimming and skiing, particularly when her husband accompanies her or her daughter with her family. She likes to listen to music.
Life Style	She separates work from private life very strictly. Nevertheless, she thinks that it is very difficult to do so, i.e. not carrying the problems of the people with her all the time. In her spare time, she sometimes carries out little errands for her clients.
Concerns/ Fears/ Problems	Hannah is often as a formal caregiver between relatives and clients. This burdens her particularly when there are no relatives who care for or support the older people. For those older people she carries little errands although this is not her task as a home nurse. She is concerned about the development of family structures. Hannah is worried about the shrinking number of supportive family members which she has observed over the last 20 years.

Social networks

Family	Hannah is married to Wolfgang. They have a daughter called Gloria who has two sons and lives with her family in Salzburg City.
Friends	Hannah has some friends at work, particularly from the home nursing care service. She also has some friends from nursing care school and neighbours.
Informal care/ support network	Her husband supports her doing the housework and cooking. He is the director of the elementary school in Wals, hence, he works close to their flat.
Formal care	She is independent.

Health (ICD-10)

H52.4 Presbyopia	Light presbyopia; She needs reading glasses.

Functional status

ADL	Hannah is independent.
iADL	She is independent.
Functional fitness	Hannah does sports together with her husband Wolfgang. They bicycle, hike, swim and ski, also with her daughter and her family. Whenever Hilfswerk offers a course like yoga or gymnastics, she attends it.

Daily routine

Hannah wakes up at 6:00. After breakfast she starts her tour. At 12:00 she has lunch break. She works until 16:00. Afterwards, she sometimes does some errands for her clients. In the evening she likes to eat dinner with her husband. Sometimes they go to the cinema or dancing. Hannah also works on every second weekend.

Needs

Within her profession, she would like to educate caring relatives so that their burden is eased. For instance, how wound management can be organized or how to deal with psychological burdens would be interesting topics for them. Hannah would like to have an information platform on which the employees of home nursing and home helping services can share their experiences concerning tasks they do for their clients in their free-time like organizing errands. She thinks that it would be also helpful to know what the caring relatives have already done with the clients, particularly for the home helping service. Hannah would like to promote movement because she thinks that movement is very important for her clients. Some love to tell her what they have done physically the whole day. She thinks that they are motivated by telling her what they have achieved that day. Unfortunately, mostly she doesn't have enough time to do movement exercises with her clients. She thinks that if exercises would be provided in a simple way, older people would have the possibility to train together and volunteers could support them.

Corresponding CiM functions

1. Motion promotion service a. Perform suitable exercises with clients 2. Collaboration service a. Communication with relatives and volunteers 3. Motivation service a. Motivate clients 4. Education service

Table 7: Persona 4 (source: own representation)

7.2.4 Italian Personas

7.2.4.1 Persona 1: Letizia - 84 (older person with care needs)

Age	84
Gender	female
Family status	widow, two sons, two daughters-in-law, 2 grandchildren, one brother, one sister
Origin	Italia
Native language	Italian
Education	Teacher
Lives in	A flat in Erba

ALDIA

Technical background	Letizia owns a mobile phone, no more a fixed phone
Use of technology	TV, mobile phone (feature phone)
Socio-economic background	Letizia lives alone in a small flat on the first level. She lives with a dog that needs twice a day to go out for a walk. She lives in the same building/house as her brother does; he lives on the second floor.
Living	Letizia lives in a beautiful small flat (bedroom, kitchen, living room, bath room), she does not have an elevator and she has to do one flight of stairs.
Hobbies	Before her stroke, Letizia went out with the dog twice a day. Now she moves with a stick for longer distances and goes out more rarely. She loves to knit, and takes some tea with her friend Lucia.
Life Style	Letizia spent her youth at the countryside, so she loved to bring her dog in the park, with other pets. Nowadays, she only goes outside when her dog requires it but then

	she just stays in the street under her flat.
Concerns/ Fears/ Problems	Before her stroke, she was able to do everything alone and independently, now her brother and her son help her. She fears that she will lose all her mobility with increasing age. She moves at home without her stick but she fears to go outside alone except for her dog's businesses. For doing the groceries she always needs the help of someone else.

Social networks

Family	Letizia's husband died 35 years ago. She has two sons. Her first son lives in Como, ten minutes from her house, with his wife and two sons. Her grandchildren are teenagers and they rarely come to visit their grandmother, only twice a month. The second son lives in Bologna. He is a researcher at the university. She always sees/meets her brother who lives close to her and helps her with the groceries and with the dog too.
Friends	Letizia has got one friend: Lucia, who visits her twice a week. They live in the same street, so it's simple to stay in contact.
Informal care/ support network	Lucia and her husband help Letizia. In Erba there is the daily center that can host Letizia.
Formal care	A home help comes/visits two times a week to help cleaning the flat and doing the groceries.

Health (ICD-10)

H52.4 Presbyopia	Presbyopia; She needs reading glasses.
ICD-10-CM I63.50	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery
R26.89	Difficulty in walking, not elsewhere classified

Functional status

ADL	For longer distances she needs a stick to walk. Letizia does not need help with hygiene, eating or dressing. For the hygiene she has got a shower with a chair, so she can do everything alone.
iADL	She is completely unable to shop, but she plans, prepares, and serves adequate meals independently. She maintains house with occasional assistance for example for "heavy work domestic help". She launders small items such as rinsing stockings, etc. She manages day-to-day purchases, but needs help with banking, major purchases, etc.
Functional fitness	Letizia needs a stick for longer walks outside of her flat. Nevertheless, she likes to move at home. During her domestic works, she can use her arms perfectly. And for the dog she goes outside at least twice a day.

Daily routine

Letizia wakes up early in the morning at 07.00 because of the dog which needs to go outside. Then after a few minutes, her pet is really quick, she takes tea with biscuits. Then she starts to clean her flat. At 12.00 she prepares the lunch for her and for her brother who always eats with her. In the afternoon she takes a nap and then she goes for a second walk with the dog. Lucia comes to visit/visits her twice a week. Her grandchildren visit her at the weekends when she organizes the Sunday lunch with her son, her daughter-in-law and her two grandchildren. She does not go on vacations anymore. She thinks that it would be nice to involve her in a trip organized by the day care center in Erba.

Needs

Letizia's desire is to remain independent. She would like to move her leg like 6 months ago, because she

loves her family and her dog, and she wants to take care of everybody for a long time. Letizia heard about the walking group organized in Erba and she would like to participate with her friend Lucia in order to meet other people and be in contact with the rest of the world. She would like to keep in contact with her son, the researcher. She has never seen his flat, so she would like to do a tour to Bologna to visit him.

Corresponding CiM functions

1. Motion promotion service a. provide health-enhancing physical activities, exercises 2. Motivation service a. step counter, overview of movement 3. Education service 4. Community service a. perform exercises with others

Table 8: Persona 1 (source: own representation)

7.2.4.2 Persona 2: Francesco (caring relative)

Age	65
Gender	male
Family status	married with Pinuccia for 32 years, lives together with his wife, three daughters that live far from them
Origin	Italia
Native language	Italian
Education	Maths teacher (retired)
Lives in	He lives together with his wife in their flat in Erba.
Technical background	He has a smart phone and a PC.
Use of technology	TV, PC, smart phone, digital camera
Socio-economic background	Francesco is a retired teacher who cares for his wife since she needs a wheelchair after an accident. Since his retirement Francesco is responsible for most of the care of Pinuccia. They receive help from Aldia, through a formal operator, three times a week for the assisted bathroom.
Living	Francesco lives together with his wife in a flat. The flat is on the third floor, with an elevator.
Hobbies	He doesn't have a lot of hobbies but he loves reading books and newspapers.
Life Style	His life is completely absorbed by his wife- he lives for her.
Concerns/ Fears/ Problems	Francesco is really worried about their future. Due to his back pain, he doesn't know if he can care his wife all his life long. Francesco fears social isolation because after his retirement he gives 100 % in order to take care of his wife. He feels very tired, full of guilty feelings whenever he takes times for himself.

ALDIA

Social networks

Family	They have three daughters: Cristina lives in Sicily, really far from them (1000 Km), with whom they have long callings. Alessandra lives in Milan, 50 km from Erba and Teresa lives in Como, near her parents. But Francesco is really independent and he doesn't ask them for help or anything.

Friends	Before the accident, they had a lot of friends. Now, the situation has a little bit changed, because they feel lonely. Only a couple of friends visit them weekly.
Informal care/ support network	Francesco is alone. Francesco sometimes asks Aldia for some help, for example, for cleaning the flat and cooking too.
Formal care	Home nursing service visits three times a week and supports Francesco.

Health (ICD-10)

M54.07	is grouped within Diagnostic Related Group(s) (MS-DRG v32.0): 552 Medical back problems without mcc, Francesco suffers from back pain.

Functional status

ADL	Francesco is independent.
iADL	Francesco is independent.
Functional fitness	Francesco was sportive, he loves to go out for walking and bicycling, but now his life is really full and he goes out only to the supermarket and the pharmacy.

Daily routine

Francesco wakes up at 8.00 and prepares the breakfast for him and his wife. He reads the newspaper and smokes a cigarette in front of the window. After that, he cares his wife, goes out for the groceries and prepares lunch. Three times a week the formal operator supports them. After lunch at 13.00 they have a nap and then he cleans their home. In the late afternoon he reads and prepares the dinner. In the evening they usually have skype calls with their three daughters.

Needs

Francesco needs time for himself. He would like to spend time outside without guilty feelings, with the idea that his wife is with a person. He would like to go outside with his bike or to visit her daughters.

He expresses the desire to be inserted/included/part of a in a time banking because he would give lessons in mathematics in exchange for hours for his wife.

Francesco is worried about his back pain. Probably he doesn't use his back correctly so he needs education training and some exercise for his back.

He feels lonely. Aldia's help isn't enough for their necessity: he feels alone and near a burn out.

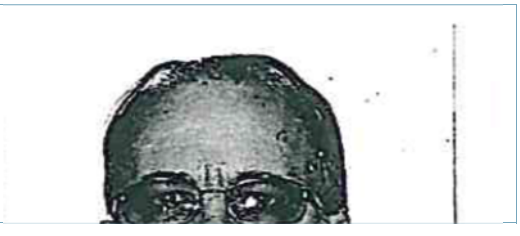
Corresponding CiM functions

1. Motion promotion service
2. Education service
3. Motivation service
4. Collaboration service
5. Community service

Table 9: Persona 2 (source: own representation)

7.2.4.3 Persona 3: Marco Flavio (volunteer)

Age	60
Gender	male
Family status	married (for 37 years), 2 children
Origin	Italia
Native language	Italian
Education	Janitor



Lives in	Erba, with his wife and his 2 daughters	ALDIA
Technical background	Marco is retired; he had worked in a secondary school for 45 years. He owns a smartphone and a PC.	
Use of technology	TV, PC, smartphone	
Socio-economic background	Marco is a volunteer. He accompanies older people to the daytime centre of Aldia and some older people to the supermarket. He is very active.	
Living	Marco, his wife and his 2 daughters live in a flat.	
Hobbies	Marco is sportive, he organizes walking group for our elders twice a week.	
Life Style	They like to be at home or travel in summer with their daughters.	
Concerns/ Fears/ Problems	He would like to do more because he has a lot of free time and he would like to organize some trips for our elders. He feels the loneliness of the older people.	

Social networks

Family	Marco is married to Luciana. They have two children: Elisa and Sofia. Both are living with them. They attend the secondary school. They always go on holiday together but in the last year the two girls are growing and expressing the desire to go on holiday independently that is a blow for Marco.
Friends	Marco has got a lot of friends his bowling association. They play together once a week and on the weekend they have lunch together in the bowling club.
Informal care/ support network	When he needs a helping hand, his brother Antonio helps him.
Formal care	He does not need formal care services.

Health (ICD-10)

H52.4 Presbyopia	Light presbyopia; He needs reading glasses.

Functional status

ADL	He is independent.
iADL	Marco does not do anything at home, his wife takes the entire household, and he does the groceries together with his wife. He cooks pizza very well and once a week he prepare the dinner for his family.
Functional fitness	He is generally fit. Marco does walking groups for elders of Aldia twice per week. Furthermore, he does bicycling and plays bowling with his friends.

Daily routine

Marco wakes up at 08:30. During his breakfast, he watches the television news. On Monday mornings he does with his wife the groceries. Afterwards, he has lunch with his wife and in the afternoon they do different things like reading, riding bicycles or watching TV. Three times a week he accompanies older people to the daily centre He starts at 14.00 and stops his tour at 15.00. Twice he goes to the park with 10 older people to guide walking groups. On Wednesdays, he plays bowling and at the weekend, he has lunch with his friends.

Needs

During the walking groups he would like to know the differences between older people' capacities He worries about their health status. Marco would like to have some education from an expert of gym or a doctor and something like first aid, because he is worried about the fact that somebody could have some problems.

He would like to involve other people to his walking group, because he likes to do something for other

people and because he has seen that this is a perfect way to involve an elderly that never goes out.

Corresponding CiM functions

1. Collaboration service a. Sharing information between volunteers and formal caregivers b. Contact person at social care organisation c. Volunteer meetings 2. Education service a. First aid 3. Motion promotion service a. Do easy exercises with older people 4. Motivation service a. Performing exercises with him

Table 10: Persona 3 (source: own representation)

7.2.4.4 Persona 4: Maria (home nursing service)

Age	45
Gender	female
Family status	divorced, one son
Origin	Italia
Native language	Italian
Education	2010: Certificate of attendance at the course O.S.S. (Upgrading 400h) at Training Works of Como, with the performance of the related internship of 200 of hours at the Holy Family Hospital - Fatebenefratelli Erba (Co), Medicine Department 2009: certificate of attendance at the course A.S.A. (Qualification 800h) at Training Works of Como, with the performance of the related internships to 350 of hours at the Nursing Home Villa St. Benedict of Albese con Cassano (Co), industry residence for the elderly and disabled
Lives in	Erba in a flat
Technical background	Basic knowledge of PC, Word, Internet, e-mail
Use of technology	TV, PC, smartphone, digital camera
Socio-economic background	First, she was the owner of commercial activities – a plant shop, flowers and gifts duties performed. After some years she had the wish to study and keep in contact with helpful people, becoming a home nurse. After her education period, she has been working for Aldia for 6 years.
Living	Maria is divorced, she lives together with her son in a flat
Hobbies	Maria loves to go for a walk, bicycling. She goes to gym twice a week. In particular, she loves gardening. On her balcony she has got a lot of plants and flowers.
Life Style	She works a lot. She starts early in the morning and finishes late in the afternoon. Twice a month she works during the weekends.
Concerns/ Fears/ Problems	Maria is a formal caregiver who works for her clients at their homes. She is often the literally bridge between relatives and clients. She often is accompanied by a colleague because in certain cases they have to work in two because some clients are heavy. In particular cases, she is an important reference person for the clients. They only have her help. She thinks that these are the most difficult situations because when she goes home she cannot forget her lonely clients.

ALDIA

Social networks

Family	Maria lives with her son and she never meets her ex-husband. They don't keep contact. She is really worried about her son's future and she works a lot to guarantee him a good education.
Friends	Maria has got a lot of friends, some from the gym and others from the work.
Informal care/ support network	She is alone. She does everything alone at home: the housework and cooking.
Formal care	She is independent.

Health (ICD-10)

	None

Functional status

ADL	Maria is independent.
iADL	Maria is independent.
Functional fitness	Maria goes to the gym, she bicycles and often goes for walk.

Daily routine

Maria wakes up at 6:00. After breakfast, she starts her tour. At 12:15 she has lunch break. She works until 17:00. Afterwards, she takes care of her son. When he goes to play soccer, she goes to the gym and sometimes she invites some friends for dinner. Maria also works two weekends in a month.

Needs

She is really interested in her clients and she would like to involve other people because her thoughts are to build a network around the older people' lives. They often are alone and without a family, even often without a neighbour, thus, isolated.

Maria would like to have a platform on which the formal operator and the informal caregiver can share experiences concerning tasks they do for their clients.

She thinks that it would be also helpful following educational training, for them (formal operator) and informal caregivers, to promote movement and motivation.

Corresponding CiM functions

1. Motion promotion service
2. Collaboration service
3. Motivation service
4. Education service

Table 11: Persona 4 (source: own representation)

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