

# Perception of Hungarian elderly (aged 60 and over) of (physical) frailty and the physical aspects of healthy ageing

*PRACTICAL RESEARCH*



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# Summary

## *Introduction*

Over the last 100 years, life expectancy has increased by about 30-40 years. These added decades create a new stage of life, where many different ageing-associated diseases become more prominent. Next to these individual chronic diseases, the prevalence of frailty also increases. One of the most important cornerstones of ensuring healthy ageing and preventing frailty is living a physically active life. Though elderly people (aged 60 and over) are encouraged by healthcare professionals to participate in regular physical activity, the majority of them do not do so. In fact, Hungary has one of the lowest numbers of people in the European Union who live a healthy life. Therefore, new strategies need to be developed to motivate them to live a physically active life. In order to come up with an effective strategy for this, the perceptions of elderly about the physical aspects of healthy ageing and (physical) frailty first need to be understood. The aim of this research is to gain insight into the perception of the Hungarian elderly of (physical) frailty and the physical aspects of healthy ageing.

## *Methods*

For this research, a cross-sectional qualitative design was chosen, where in-depth interviews were conducted with the Hungarian elderly. The interview guide was initially developed in English, then translated into Hungarian, as the participants did not speak English. The interviews took place between 27. 02. 2023 and 09. 03. 2023. For the transcription process, Atlas.ti 23 was used, where the interviews were also translated back into English. For the coding of the interviews, the inductive method was used, eventually creating themes, which then were consequently analysed.

## *Results*

The six included participants were all between the ages of 63 and 82, three males and three females. They defined healthy ageing as a slow process, without sudden changes, where people maintain their independence. According to them, this is achieved by living a healthy life, which includes exercise and paying attention to one's diet. To maintain their mental health status throughout ageing, they emphasized the importance of working after retirement. They also believed physical decline to be a part of the ageing process and half of them thought it is possible to improve one's physical health as one ages. As for their definition of frailty, half of them described it as losing the ability to live independently, and additionally, half of them believed frailty to be preventable.

## *Conclusion*

Hungarian elderly defined healthy ageing as remaining capable of living independently and frailty as losing this independence. To ensure healthy ageing and prevent frailty, they believed one should live a healthy life, though the participants were not in agreement about the specifics of what this entails. They put an emphasis on maintaining physical and mental health states as much as possible, though their opinion differed on how successfully this can be achieved. Due to these disagreements and not reaching saturation on the theme of frailty, further research is indicated.

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## Introduction

The life expectancy of people in developed and developing countries has increased by about 30-40 years in the last 100 years (Fried, 2016). This increase in life expectancy comes with its own challenges. Ageing brings with itself many different diseases due to the changes happening in the body: the incidence of neurodegenerative diseases, such as Alzheimer's disease or Parkinson's disease, increases with older age. Additionally, cancer, immune system diseases and cardiovascular diseases e.g., atherosclerosis, hypertension, stroke, or myocardial infarction are also more prominent in older age (Li et al, 2021).

In the prevention of these diseases, lifestyle plays a very important role. Lifestyle is defined as the way a person, or a group of people chooses to live (Oxford University Press, 2023). It involves one's diet, physical activity level, and their habits. A healthy lifestyle is correlated with health benefits: it decreases the chance of developing cardiovascular diseases, lowers the risk of obesity and reduces the chance of developing cancer. A physically active lifestyle decreases the chance of developing type 2 diabetes and lowers the risk of metabolic syndrome, it reduces the risk of falls, and it even reduces depression and cognitive decline in older adults (Powers & Howley, 2017; Dima-Cozma, Gavrilita, Mitrea & Cojocaru, 2014).

Though the importance of a healthy lifestyle is well-known, studies show that on average less than 6% of European adults live healthily. Within the European Union (EU), Hungary has the least amount of people with a healthy lifestyle – only 1.3% of the country's population lives healthily (Marques et al, 2018). Research shows, that approximately 50% of all deaths in Hungary are caused by behavioural risk factors, such as dietary risks, both direct and second-hand tobacco consumption, alcohol consumption and low levels of physical activity. Next to this, there is also an inequality in life expectancy within Hungary based on people's gender and education level. At the age of 30, men with a low level of education have a life expectancy that is 10.7 years less than those with a university level of education. For women, this gap is much smaller, only 3.1 years. People with a lower level of education have a greater exposure to the different risk factors mentioned above (OECD & European Observatory on Health Systems and Policies, 2021).

Additionally, when there is an age-related decline in physiological reserve and function across multiple organ systems, older people's ability to cope with everyday or acute stressors may become compromised, in other words, they become frail (WHO, 2016). Having a single chronic disease shows a different phenotype than being frail. The frailty phenotype was introduced by Fried et al, in 2001. They attributed five characteristics to frailty: shrinking, weakness, poor endurance and energy, slowness, and low physical activity level (see Appendix 1). If at least three are present of these characteristics the person can be classified as frail (Fried, 2016).

Frailty is more prevalent in people who are physically inactive (Da Silva et al, 2019). According to a systematic review done by Oliveira et al, (2020), physical activity plays a significant role in preventing frailty among people who are older than 65. Despite all this, 53% of Hungarians never exercise or play sports (European Commission, 2018). Therefore, new strategies need to be developed to make sure older people live a physically active and healthy life.

There are many theories as to how to come up with and implement new strategies in healthcare. According to the precede-proceed model, first developed by Green, Eriksen & Schor in 1988, the researchers first must make a distinction between predisposing factors (e.g. knowledge, attitudes and values of the target group), enabling factors (e.g. capacity, availability and accessibility of services) and reinforcing factors (opinions and behaviours of others) before they can outline the best approach

towards implementing a new strategy (Grol, Wensing, Eccles & Davies, 2013). This research aims at discovering the predisposing factors, mainly the perception of the elderly on (physical) frailty and the physical aspects of healthy ageing. While there is enough medical data available that show the prevalence and pathophysiology of frailty, there is little known about the perceptions of patients thereof (Dresden, Platts-Mills, Kandasamy, Walden & Takaoka, 2019).

Over the years, some qualitative research has been done across Europe on how frail people understand frailty (Archibald, Dent & Kitson, 2020) and what kind of impact the terms associated with frailty has on their health (Durepos et al, 2021). But no empirical data exists on the Hungarian elderly's perceptions of the physical aspects of healthy ageing and (physical) frailty.

To find explanations for people's beliefs and values Hennink, Hutter & Bailey (2020) recommend the use of qualitative research methods. One of the most common forms of qualitative research uses in-depth interviews. In-depth interviews are especially useful when the aim of a research is to seek information on people's own perceptions and beliefs. Therefore, for this study, a research design relying on in-depth interviews was chosen.

For this study, the following research question was used: How do the elderly (aged 60 and over) perceive (physical) frailty and the physical aspects of healthy ageing?

## **Methodology**

### ***Study design***

For this qualitative research, a cross-sectional, descriptive design was chosen, because data was collected at a single point in time between the 27<sup>th</sup> of February and the 9<sup>th</sup> of March 2023. The aim of the study was to understand, gain insight into and summarize the perception of the Hungarian elderly regarding (physical) frailty and the physical aspects of healthy ageing. The research was conducted by a single researcher.

### ***Research population***

The Medical Ethical Testing Workgroup's ethical testing protocol was read and approved by the counselling teacher, stating that no ethical testing was necessary (see Appendix 2). Due to the limited timeframe of this study, the participants were all prior acquaintances of the researcher. The participants were approached via email, which was known by the researcher prior to the study. Each person who was contacted, expressed an interest in participating in the research. In the email, an information letter and an informed consent form (see Appendices 3 and 4) were sent that described the background and the purpose of the study, the participant's and the researcher's role. It also informed them that the collected data will be anonymized, remain confidential and only be used for research purposes. Only upon signing the informed consent form, were the participants included in the study. The inclusion criteria were: participants had to be at least 60 years of age, live in Hungary at the time of the research and have a Hungarian nationality. Participants were excluded if they were unable to give informed consent to participate in the study or if they had a close relationship with the researcher. The exclusion of people with a close relationship to the researcher was meant to lower the risk of receiving biased answers.

## *Data collection and analysis*

A semi-structured interview guide was developed after a preliminary literature search into the background of (physical) frailty and the physical aspects of healthy ageing. The interview guide was created with the collaboration of A. G. Brader and P. Hodselmans, researchers at Hanze University of Applied Sciences. The guide was initially developed in English, then translated into Hungarian by the researcher. Three practice interviews were conducted to optimize the interview guide (see finalized version below). The practice sessions also led to a change in the order of the items in the guide (questions 7 and 8 were switched, and 15 and 16 were switched). Based on the practice interviews, an estimated time (30-45 minutes) was measured as to approximately how long each interview should take. Once the interview guide was finalized, the participants were approached to agree on a suitable time for a personal meeting to conduct their respective interviews. The interviews were conducted in Hungarian and translated into English by the researcher during the transcription process. During the interviews audio recordings were made with the participants' consent.

The final interview guide consisted of four categories of questions: healthy ageing, physical activity and ability, ageing-related physical decline and frailty. The following questions were used for each category:

### *Healthy ageing:*

1. How do you define healthy ageing?
2. What do you think it means to age healthily?
3. What do you think is necessary to age healthily?
4. What do you think one should do to age healthily?

### *Physical activity and ability*

5. How do you define physical activity?
6. What do you think it means to have a physically active life?
7. Is there a difference between physical activity and physical ability? If so, what is this difference?
8. How do you define physical ability?
9. What do you think is the effect of ageing on one's physical activities/ physical abilities?

### *Ageing-related physical decline*

10. How do you define ageing-related physical decline?
11. How do you think people react when they are (first) experiencing ageing-related physical declines in their lives?
12. What actions do you think help to maintain physical health?
13. What do you think one can do to prevent ageing-related physical decline?

### *Frailty*

14. What do you understand by the term frailty?
15. What do you think being frail means?
16. Is there a difference between frailty and ageing-related physical decline? If so, what is this difference?
17. When would you say someone is frail?
18. How do you think frailty begins?
19. What do you think one can do to prevent frailty?

For the transcription process and coding Atlas.ti 23 was used. The coding and analysis were done through an inductive process, whereby the collected data was used for the development of a general

understanding. In this case, a summary was created about the perceptions of the elderly based on the interviews. The data collected from the interviews was the empirical data for this study (Hennink et al, 2020). Codes were created after reading the transcribed interviews several times, identifying common topics that were also relevant to the research question. The created codes were grouped together into supercodes, eventually creating themes. Each theme was then analysed by the researcher.

## Results

### *Participants*

In this research, six people were interviewed whose demographic information can be found in Table 1.

Number of participants	6
Age (in years)	Mean: 71.7 ± 8.5 Range: 63-82
Sex	3 males 3 females
Highest level of education	3 master level 3 bachelor level

1. Table. Participant background information

### *Subdivision into themes*

After the interviews, four themes, relevant to the research question, were created by the researcher following the coding of the interviews (the process is described in detail in the methodology). The following four themes were chosen: *ageing*, *lifestyle*, *maintaining health* and *frailty*. The theme of *ageing* describes how the participants define healthy ageing, what the participants believe to be signs of ageing and how people react to noticing these signs of ageing. The theme of *lifestyle* describes what the participants understand about living a healthy life and what they consider to be the most important characteristics of a healthy life. The theme of *maintaining health* examines what the participants thought was important to do to maintain their mental and physical health, and whether, in fact, their mental and physical health could be maintained as they are growing older. And lastly, the theme of *frailty* looks at what the participants understand by the term frailty, how they think frailty begins, and if it could be somehow prevented.

The data collected for each theme is detailed below.

### **Ageing**

#### *Definition of healthy ageing*

Four out of six participants defined healthy ageing as a slow process without any sudden change happening in the human body, where the person remains capable of living independently throughout their lifetime.

*“Healthy ageing is that a person’s body naturally wears and tears, and becomes slower [...] To age healthily, it means that a person primarily mentally and physically and spiritually remains in balance until they die” (Int. 4)*

One participant defined healthy ageing as being able to accept the changes that are happening in life in a way that allows the person to die in peace without longing for their past.

*"[...] when the time comes and I need to leave this earth, then I will be in a state where it does not cause suffering to die" (Int. 1)*

And for one participant healthy ageing meant the prevention of diseases as much as possible, but since most people do develop some diseases, the definition also included taking care of these diseases in the right way.

*"[...] you should have a proper health status because no matter how much you pay attention to yourself and to your things, it is unavoidable that you will have health problems. So, these problems need to be taken care of properly and that is hard." (Int. 6)*

### *Signs of ageing*

Secondly, all participants associated weakness, joint pain, slowness, the development of some chronic diseases and the changes in the different sensory systems of the body with the ageing process and they all thought that these are perfectly natural and there is not much anyone can do about these.

*"I have glasses, am a bit hard of hearing, I have an enlarged prostate, and my joints are clicking, have a bit of hypertension, because I have been through hard times, but besides these, I don't have any issues." (Int. 3)*

Additionally, four participants out of the six mentioned that the ageing process also involves an increase in body weight, which is hard to avoid, no matter how hard they try to pay attention to their diet.

*"[...] you shouldn't put on weight. Almost everyone in my generation puts on weight." (Int. 5)*

### *Reactions to ageing*

Lastly, two types of reactions were described when the participants were asked how people react to the first signs of ageing. Four out of the six said that people first fall into despair then slowly they either just accept this new state of health and do nothing, or they begin to fight against it by seeking the help of doctors and specialists.

*"Well, I think they first fall into despair. Because it's a really bad thing to lose one's feeling of safety of 'I can do anything I need to', 'I am mobile, I don't know barriers like this'. And when they are faced with it, that they are not like that anymore, they really fall into despair. But they shouldn't let that sentiment prevail. They should fight against it in every possible way. Because, of course, it won't be the same as before, when they were 50." (Int. 5)*

However, the other two participants said, that people do not notice the first signs of ageing, or they do not care about the signs. It is only when ageing has already had an effect on their quality of life for some time, that they begin to seek medical help.

*"Well, when they first notice these, they don't think that much about it. But then they start applying different creams, so it wouldn't hurt. I don't know how much time passes, or how badly it should hurt before they go to see a doctor, a rheumatologist, or an orthopaedist." (Int. 4)*

## Lifestyle

Every participant believed that the best way to ensure healthy ageing is by living a healthy life. And when it comes to perceptions about healthy lifestyles, all of them talked about the importance of exercise and diet.

*"[...] it's not just physical training, and making sure my mental health is okay, but eating is a very important part of this." (Int. 1)*

Four people also mentioned the importance of family, friends and other social relationships to live a healthy life.

*"I haven't mentioned yet, and I find this really important, and that is human relationships. Because... well, I have friends, people I've known since elementary school, university or that I've met since, they mean a lot. And when a person gets into trouble or gets down, they can lift you up." (Int. 5)*

Additionally, it was important for four of the participants to look at how other people grew old in their surroundings by examining the life of their family members or friends. These people put an emphasis on the part genetics might play in the ageing process.

*"I paid attention to my family's life, and I saw and asked my parents about how and what caused people to die in my family. Because somewhere I inherit these things, and I saw that only one person died of cancer, the rest of cardiac problems. So, from this point on, I started to think; how could I change this in my own case, or in my younger sister's case, who is also older than 60, so that we will not end up at age 73 where I think we would leave this earth too soon. And so, for this, I started cardio training again here and I will try to keep this up." (Int. 1)*

## Maintaining health

### *Turning to medical professionals*

When talking about what actions could help maintain their health status or prevent ageing-related declines, five participants mentioned turning to medical professionals could be useful, for example, general practitioners, rheumatologists, orthopaedists, or physiotherapists. These five people also thought that it was their responsibility to get in touch with these professionals themselves as soon as they start noticing any signs of ageing within themselves.

*"I know I need to do something with this, and I know I will not be able to do this alone, so I'd rather go and pay a physiotherapist." (Int. 1)*

### *Mental health*

In order to maintain their mental health three people mentioned the importance of working after retirement.

*"I might not be able to work the same way as at 60, but I can still be a mentor, a coach, a trainer, or a volunteer at a museum, or do some other volunteering job." (Int. 1)*

Another two people put an emphasis on connecting with the world after retirement as the best way of maintaining mental health.

*"[...] you need to be open to the world as much as you can. Because somewhere these things go both ways. So, if I get very closed off, then I won't go and do. Then I will live in self-pity. But if I am open and I live a little, figuratively speaking, then it helps." (Int. 2)*

### *Possibility of preventing mental decline*

While five people found it important to actively try to maintain their mental health status and prevent any potential decline, only three of them thought it actually possible to maintain their mental health throughout their life.

*“And no matter how strange, you can keep these abilities in shape. Even at an old age. I don’t do this, but it is good to solve crosswords and play board games and play chess or play cards and those kinds of things. I don’t do these, I analyse, read, I keep up with the news.” (Int. 3)*

### *Possibility of preventing physical decline*

Though all six participants believed that physical decline is part of the ageing process, only three of them thought it possible to improve their physical state as they are growing older.

*“[...] so, these deficiencies are limits to my physical activities. But of course [...] you can improve these things tremendously.” (Int. 4)*

Two other participants did not believe improvement is possible after ageing-related physical decline, but it is possible to maintain one’s physical health.

*“I can hope that maybe if I really push myself, I could improve on this, but I don’t think I could really improve, maybe I could maintain this state, but real physical rebirth isn’t possible.” (Int. 6)*

Only one participant believed neither prevention nor maintenance is possible when it comes to physical declines.

*“So, people tend to define themselves in relation to a mental image that they create of their own lives and of life itself, and they try to match that image. They try to compare themselves to that image. And when someone is older, obviously they feel that they are not the same physically. Everyone feels that. [...] And in turn, that image, that shapes their life, also gains negative elements.” (Int. 3)*

## **Frailty**

### *Frailty definition*

Three participants described frailty as being incapable of living independently either for the rest of their lives or for a shorter period, while for example, they recover from a disease.

*“I end up in a state, where I truly cannot live alone. For example, if someone breaks their hip, they end up bed bound.” (Int. 2)*

Two participants defined frailty as the inability to function in society due to mental dysfunction.

*“To me, frailty means that a person finds it difficult to navigate the world they live in, may that be a workplace, society or school, it can be anything.” (Int. 4)*

Additionally, one participant defined frailty as having an increased chance of falling.

*“[...] it means that you fall easily.” (Int. 5)*

Two people also added that frailty involves not having enough resilience to deal with everyday tasks.

*“So, for me, frailty means being unprepared. Having no resilience. So, you don’t have resilience, or you are not prepared to stand up against certain circumstances, inner changes” (Int. 1).*

### *How frailty begins*

Secondly, concerning the onset of frailty, three people mentioned a gradual process, where either psychological or physical changes start to accumulate in the body, eventually making the person frail.

*"[...] it's a process for sure. I think it has to be a process, that starts with your physical state..., well, maybe your mental state starts to, like Parkinson's or Alzheimer's disease, that leads you into this state. Or a physical decrease. And I think it begins when these changes start to happen in your body, and you don't pay attention to these." (Int. 1)*

On the other hand, the other three participants understood the onset of frailty to be connected to a physical or psychological trauma.

*"Well, it's either that some trauma happened, where there is a physical decline in a way that you cannot move anymore or psychologically, like becoming demented and then you need constant care." (Int. 2)*

### *Possibility of preventing frailty*

Lastly, when asked if frailty could somehow be prevented, three people agreed and they all mentioned that frailty can be prevented by living a healthy life and maintaining a good mental health status.

*"You need to consciously prepare for this, take care of this and do everything you can do to keep your abilities." (Int. 2)*

One participant said that though frailty is not preventable, and everyone will become frail, the state of frailty they will achieve is influenced by the life they live.

*"But this, how frail someone will be, is not purely an objective thing, a person can influence that by what they are doing, how much they fight against it or how much they let things take their course." (Int. 5)*

Only one participant believed frailty to be completely unpreventable and not influenceable.

*"You can't really prevent mental problems, so [...] It's unpredictable, it can happen to anyone." (Int. 6)*

## **Discussion**

More than one third of European adults do not live a physically active life, even though the benefits of physical activity are well known (OECD & WHO, 2023). In Hungary, this is true for more than half of the population (European Commission, 2018). As this number is so high, a new strategy needs to be developed across Europe that will motivate elderly to age healthily more effectively. To implement a new strategy in healthcare, one needs to first understand the predisposing factors of the target group. (Grol, Wensing, Eccles & Davies, 2013). This means gaining insight into the perception of elderly of the physical aspects of healthy ageing and (physical) frailty. As initial research into this topic, the aim of this study was to understand how the Hungarian elderly perceive (physical) frailty and the physical aspects of healthy ageing through in-depth interviews.

Most of the participants defined healthy ageing as a slow process, without any sudden changes in one's life, while they remain capable of living independently. According to them, this is achieved by living a healthy life. Secondly, half of the participants agreed on the definition of frailty as losing one's independence thus becoming unable to live entirely independently. Prevention of frailty or delaying becoming frail might be possible by living a healthy life.

## *Ageing*

The study participants perceived healthy ageing as a slow process, where they preserve their ability to live independently without experiencing any sudden changes in their quality of life. However, this definition differs from the World Health Organization's (WHO) definition, which is broader than theirs. The WHO puts the emphasis on developing and maintaining functional abilities into older age. These functional abilities refer to the capacities a person has, so that they are able to do everything they have a reason to value. This can mean meeting basic needs, learning new skills, making decisions, remaining mobile, building and maintaining relationships or contributing to society in some way (WHO, 2019).

Secondly, the findings of this study are in accordance with the WHO concerning the changes that are happening in one's body as one ages. They specified weakness, joint pain, slowness and some sensory changes as signs of ageing. A report from the WHO (2015) states that in general, a decline in muscle mass can be seen, resulting in a decline in strength. Bone mass and bone density also decreases, increasing the chance of developing osteoporosis, in turn increasing the risk of fractures. Joint pain is also more prominent in older age, due to articular changes happening in the body. Due to these musculoskeletal declines, a decreased gait speed is observed in older people. Next to this, sensory changes can also be seen as a part of ageing. For example, presbycusis (age-related hearing loss that mainly affects the higher frequency sounds) can be seen in the elderly, or presbyopia (a decrease in the eye's focusing ability leading to blurred near vision) becomes more prominent. Additionally, cognitive function changes are also a part of ageing, though only two study participants mentioned these as signs of ageing. Memory deteriorates and the speed of new information processing slows down. On the other hand, language features remain most of the time intact, for example, reading and vocabulary remain stable throughout old age.

## *Lifestyle*

All participants mentioned the importance of living a healthy life to ensure healthy ageing. They emphasised exercise and having a healthy diet as the cornerstones of healthy lifestyles, but their definition of the type of and amount of exercise needed differed. A report was done by the National Institute for Ageing in 2022 on this topic. They specified the importance of paying attention to one's sleep because it is important to have good quality sleep, not just a good amount of sleep. Additionally, the exercise that is necessary for a healthy life must be at least 150-300 minutes of moderate- intensity aerobic physical activity per week, as this level has shown to improve muscle function most effectively (OECD & WHO, 2023; National Institute for Ageing, 2022). Physical activity is defined as any movement that results in energy expenditure increase and does not only mean sports. Moderate intensity physical activity is measured by exercising at 64-76% of HRmax (percentage of age-predicted maximum heart rate) (Canning et al, 2014). Lastly, a healthy diet should consist of mainly fresh fruits and vegetables, whole grains, and fewer proteins. Eating foods with healthy fats and lean proteins is also recommended, next to limiting one's alcohol intake.

## *Maintaining health*

When it comes to the participants' beliefs about the possibility of improving their physical state of health, only half of them believed improvement to be possible even in older age. On this topic a systematic review was conducted by Lu et al., (2021), leading to the conclusion that many different types of exercises increase the elderly's muscle strength and function. In this study, comparisons were made of different types of training with the elderly, who had sarcopenia (an age-related geriatric syndrome, where skeletal muscle mass loss and weakness cause declines in performance). This study

showed that resistance training has the biggest improvement in the elderly's muscle strength and function.

As for maintaining mental health, and preventing its decline, three study participants advised to keep working after retirement. They believed working part-time at a paid job or as a volunteer should have an equal amount of benefit for their mental health. While working after retirement has a significant positive effect on people's mental health, there is a difference in effects between paid and unpaid work, with paid work proving to have better outcomes (Maimaris, Hogan & Lock, 2010).

### *Frailty*

The study participants defined frailty as the inability of living independently, the inability of navigating the world and having no resilience towards everyday stressors. This definition is somewhat in accordance with the definition provided by the WHO, (2016), since they both mention having problems with coping with everyday or acute stressors. However, the WHO definition specifies that this compromised coping ability is due to age-associated declines across multiple organ systems in physiological reserve and function. While frailty may lead to losing one's independence, it is not true of all frail people. According to a systematic review by Collard, Boter, Schoevers & Voshaar, (2012), 4.0% - 59.1% of community-dwelling elderly are frail in developed countries. These are people, who are over the age of 65 and live outside of nursing homes.

Additionally, only half of the participants thought that frailty can be prevented. They thought it possible simply by living a healthy life. According to a review done by Kwak & Thompson in 2021, frailty can be prevented simply by increasing one's intrinsic capacity throughout their lifetime. Intrinsic capacity is the physical and mental, including psychological, capacities that a person can use at any instance. Though there is a decline in this capacity through one's lifetime from its highly stable status, it can be preserved and increased as well, to make sure the loss of this capacity is not significant. This can be done by preventing the development or worsening of chronic conditions through early detection and controlled management. Additionally, the promotion of healthy behaviour from a person's environment plays an important role in increasing one's intrinsic capacity, next to receiving social support (WHO, 2019).

### *Socio-cultural context*

People from different socioeconomic statuses (SES) have different health behaviours (Wardle & Steptoe, 2003; OECD & European Observatory on Health Systems and Policies, 2017). This is shown in people's lifestyle choices, for example, in Hungary smoking is twice as prominent in lower SES than among most educated people. Exposure to harmful risk factors is also more prominent in lower SES due to poorer living and working environments, greater stress and unhealthy lifestyles. A study done by the Institute for Health Metrics and Evaluation (IHME, 2016) stated that almost 40% of the overall disease burden may be attributed to unhealthy lifestyles in Hungary, which is the fourth highest in the EU. Some of the leading factors for this are dietary risks, tobacco and alcohol consumption and lack of physical activity. Secondly, people from low-income households tend to report having more unmet needs for medical care, because in Hungary there is a relatively large amount of out-of-pocket spending on medicine. Out-of-pocket spending refers to health services that a patient pays for independently without insurance coverage. Additionally, there is still a big difference in life expectancy between Hungarians without a secondary education and with a university level education. Murtin, Mackenbach, Jasilionis & d'Ercole conducted a study in 2017, stating that life expectancy at age 25 among Hungarian people who have not completed their secondary education was more than 10 years

lower than for people with a university level education. Next to these, Hungary's spending on prevention (as a share of all health spending) was reduced by nearly half since 2005 (OECD & European Observatory on Health Systems and Policies, 2017). This limited the impact of prevention policies in the country. The research population for this study was all educated at a university level, and they have a higher SES, thus their answers reflect only the part of Hungarian society with a higher SES.

### *Methodological remarks*

In this study, all six participants had some prior relationship with the researcher. To minimize the risk of receiving biased information, the roles of the researcher and participant were described at the beginning of each interview. The participants were also informed about the anonymisation process. To lower the risk of bias even further, during the recruitment process, the participants were excluded from the study if they had a close relationship with the researcher.

Secondly, the translations of the interview guide and of the interviews themselves were done by the researcher. As the researcher has limited experience translating from Hungarian to English and vice versa, the translated information might lack precision. The translation also caused some challenges to the researcher, as some colloquialisms used in Hungarian do not have a direct translation into English.

Additionally, saturation was not reached in all four themes. Saturation is defined by Hennink et al, (2020), as the point, where all issues are identified and there is a repetition of the existing data without raising further issues. In the themes of ageing, lifestyle and maintaining health, saturation was reached successfully. However, on the theme of frailty, conducting further research is recommended, since only three participants mentioned the same issues with similar beliefs. The other three had different ideas about issues that were raised by the others as well, and they all raised new issues too that the others did not mention.

Lastly, one question from the interview guide was not used in all interviews, as it caused confusion and was easily misunderstood by the participants. Therefore, the question 'How do you define ageing-related physical decline?' was only used in the first two interviews and was left out from the rest. The main difficulty of the question was most likely due to the translation, as each participant used a different phrase for physical decline, and the one originally provided by the researcher in Hungarian was misleading for them. To minimize this limitation, the researcher decided to take out the question from the interview guide from the rest of the data collection period.

### *Recommendations for further research*

Though this study is part of a larger research, which is conducted across Europe, further research is recommended to be done in Hungary as well. As this research could not reach saturation on the theme of frailty, further research is recommended for the exploration of this topic. Additionally, since the study participants were all educated at a university level, it is also advised to conduct research with people who had lower levels of education.

### *Recommendations for physiotherapy*

This research shows that there are differences between elderly people concerning their perceptions of the physical aspects of healthy ageing and of (physical) frailty. When (elderly) physiotherapy patients need information and advice on these topics to ensure healthy ageing, the physiotherapist should first gain insight into how their patient perceives the physical aspects of healthy ageing and (physical)

frailty. This should be done through a conversation, after which patient-specific information and advice can be given.

## Conclusion

Despite the aforementioned limitations, this study provides an answer to the research question: How do elderly (aged 60 and over) perceive (physical) frailty and the physical aspects of healthy ageing?

Based on the data gathered through in-depth interviews, elderly in Hungary believe healthy ageing to mean a slow process, through which a person's independence remains intact, while their body naturally ages. They believe this to be possible by living a healthy life, though there was no consensus on how they defined that. To them, healthy ageing involves only experiencing signs that are unavoidably related to ageing, such as weakness, slowness, and changes in vision and hearing. While everyone mentioned exercise as an integral part of a healthy life, they all defined exercise differently and only half of them believed improvement in physical health to be possible at an older age. Additionally, half of the participants defined frailty as losing one's ability to live independently. Next to this, only half of the participants believed the prevention of frailty to be possible. Due to the lack of consensus on what the Hungarian elderly mean by living a healthy life and not reaching saturation on the theme of frailty, further research is indicated.

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## Appendix

### Appendix 1: Criteria used to define frailty by Fried et al. (2001)

**Weight loss:** “In the last year, have you lost more than 10 pounds unintentionally (i.e., not due to dieting or exercise)?” If yes, then frail for weight loss criterion. At follow-up, weight loss was calculated as:  $(\text{Weight in previous year} - \text{current measured weight}) / (\text{weight in previous year}) = K$ . If  $K \geq 0.05$  and the subject does not report that he/she was trying to lose weight (i.e., unintentional weight loss of at least 5% of previous year’s body weight), then frail for weight loss = Yes.

**Exhaustion:** Using the CES–D Depression Scale, the following two statements are read. (a) I felt that everything I did was an effort; (b) I could not get going. The question is asked, “How often in the last week did you feel this way?” 0 = rarely or none of the time (<1 day), 1 = some or a little of the time (1–2 days), 2 = a moderate amount of the time (3–4 days), or 3 = most of the time. Subjects answering “2” or “3” to either of these questions are categorized as frail by the exhaustion criterion.

**Physical Activity:** Based on the short version of the Minnesota Leisure Time Activity questionnaire, asking about walking, chores (moderately strenuous), mowing the lawn, raking, gardening, hiking, jogging, biking, exercise cycling, dancing, aerobics, bowling, golf, singles tennis, doubles tennis, racquetball, calisthenics, swimming. Kcals per week expended are calculated using a standardized algorithm. This variable is stratified by gender.

*Men:* Those with Kcals of physical activity per week < 383 are frail.

*Women:* Those with Kcals per week < 270 are frail.

**Walk Time**, stratified by gender and height (gender-specific cut off a medium height).

<i>Men</i>	<i>Cut off for Time to Walk 15 feet criterion for frailty</i>
Height ≤ 173 cm	≥ 7 seconds
Height > 173 cm	≥ 6 seconds

<i>Women</i>	<i>Cut off for Time to Walk 15 feet criterion for frailty</i>
Height ≤ 159 cm	≥7 seconds
Height > 159 cm	≥6 seconds

**Grip Strength**, stratified by gender and body mass index (BMI) quartiles:

<i>Men</i>	<i>Cut off for grip strength (Kg) criterion for frailty</i>
BMI ≤ 24	≤29
BMI 24.1–26	≤30
BMI 26.1–28	≤30

BMI > 28	≤32
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Women	Cut off for grip strength (Kg) criterion for frailty
BMI ≤ 23	≤17
BMI 23.1–26	≤17.3
BMI 26.1–29	≤18
BMI > 29	≤21

## Appendix 2: Medical Ethical Testing Workgroup's Protocol

### Step I

1. The student tests the research question and set up using the *WMO testing flowchart* in appendix 2a to find out whether testing according to the WMO is necessary. The website [www.onderzoekswijs.nl](http://www.onderzoekswijs.nl) gives more information about this.

Possible results from the flow chart:

- a. Testing is unnecessary → continue on to step II;
- b. Testing according to the testing framework, non-WMO-required research is needed → continue on to step II. If in doubt, the student informs the assisting teacher, who will then consult the ethical testing committee SAGZ/SAVK;
- c. Testing according to WMO is necessary → continue on to step III.

### Step II

1. The student describes and substantiates the research question and set up using the *Precautionary Measures Research Scheme* in appendix 2b. In order to meet all the requirements for research, the student will receive current legislation-related information from the teacher:
  - a. [Elaboration of WMO](#)
  - b. [Guideline for Good Clinical Practice](#)
  - c. [Model of information letter for participants](#)
  - d. [Behavioural call for resistance: geriatric patients](#)
  - e. [Manual for the Personal Data Protection Act](#)

The scheme should include 1) privacy/anonymity, 2) information and authorisation, 3) possible negative effects, and 4) weighing of pros and cons. The goal of the scheme is to make the student reflect critically on the research setup, detect any hiatuses, and give input to the assistance;

2. When step I shows that testing is not necessary, the student will still go through step II to check whether all the requirements for research have been complied with;
3. The assisting teacher checks the *Precautionary Measures Research Scheme* and the student adds it as an appendix to the (graduation) research..

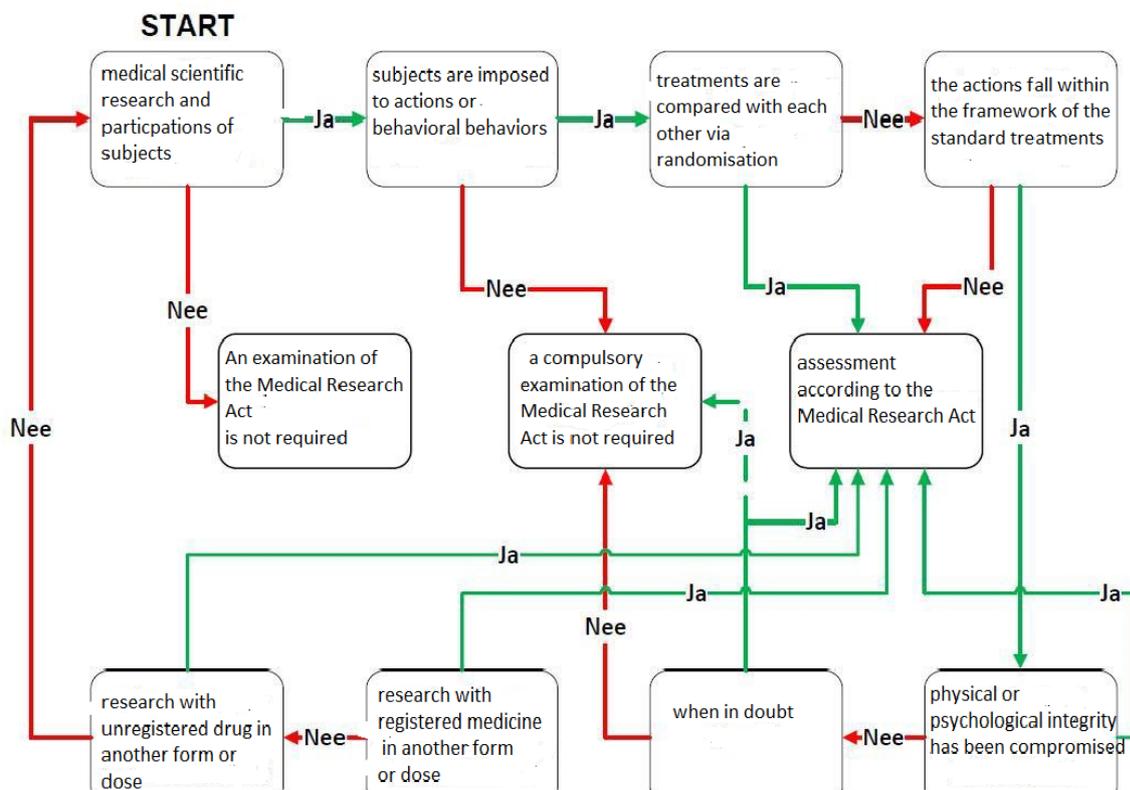
If the student has doubts as to whether or not this concerns WMO-required research, he/she should ask the assisting teacher. The teacher can then ask the SAGZ/SAVK for advice. This committee, consisting of three teachers from SAGZ, SAVK and the Transparent Care Lectorate, will test the research setup within the legal framework. Case law will be built by this committee in order to test the protocol and apply it if it decides to do so. After one year, a report from the

committee to the management team will follow with recommendations as applicable. The student decanate can act as independent confidential advisor at the request of the student. The committee will update the student and the assisting teacher of the advice within ten working days.

### Step III

1. When the WMO testing flowchart shows that WMO testing is needed, and it is not covered by third parties (e.g. UMCG), the student will inform the assisting teacher about this. Next, the student will reformulate the research question and the flowchart will be covered once more. When WMO motor testing is covered by third parties, the research can be conducted;
2. In research with external clients, preceding the formulation of research proposals a screening is conducted by the programme to intercept evident cases of WMO testing.

### Appendix 2a: WMO testing flowchart



medical scientific research and participation of subjects -> yes -> subjects are imposed to actions or behavioural behaviours -> no -> a compulsory examination of the Medical Research Act is not required

### Appendix 2b: Precautionary Measures Research Scheme

Project /subject/academic portion:	Graduation Assignment
Teacher/ coach:	Anna Griet Brader
Topic:	How do elderly aged 60 and over think about (physical) frailty and (physically) healthy ageing?

Starting and ending times of the research:	13. 02. 2023 – 21. 04. 2023.
Description of the research (brief but complete):	A qualitative research, where semi-structured interviews are conducted with people aged 60 and over to assess what they think about (physical) frailty and (physically) healthy ageing in a biopsychosocial way.

The undersigned declare, truthfully and without reservations, to have filled in the enclosed form in relation with the Graduation Assignment research to be conducted within the context of the programme.

Name(s) of student(s):	Signature:
Eszter Munkácsy	

Date: 02. 14. 2023.

	Check if applicable		Answer the following questions if the checked box is marked with a → in the previous column.	Can damage still occur here in all reasonableness? (check the correct box)	
	A	B		C	
<b>1 Privacy / anonymity</b>				No	Yes
1.1 Do you know the names of test subjects? Do you have address information?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No personal data will be included in the report, names will be changed, address information will not be asked. Data will be destroyed after 6 months by the researcher. The participants will be informed in advance about this and will only partake in the research if informed consent is given. At any time without giving a reason, the participants can ask to not be involved in the study.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.2 Do you know the email address of the test subjects?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No personal data will be included in the report. Data will be destroyed after 6 months by the researcher. The participants will be informed in advance about this and will only partake in the research if informed consent is given. At any time without giving a	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.3 Do you have (other) personal data?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No personal data will be included in the report. Data will be destroyed after 6 months by the researcher. The participants will be informed in advance about this and will only partake in the research if informed consent is given. At any time without giving a reason, the participants can ask to not be involved	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.4 Will test subjects appear on a picture or on a video or sound recording?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	With the permission of the test subjects an audio recording will be mad of the interview. This audio will only be heard by the researcher and will be destroyed once the transcripts are made of the recording. If the participant does not give permission in advance for this, there will be no audio recording done.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

1.5 Is one working with acquaintances of the researchers?	No ↙	Yes →	The participants will be distant acquaintances of the researcher and roles will be clarified before conducting the research.	X	
<b>2 Information and authorisation</b>					
2.1 Are test subjects asked for permission explicitly?	Yes ↙	No →		X	
2.2 Are test subjects informed in advance of the goal of the study / the intervention?	Yes ↙	No →		X	
2.3 Are test subjects truthfully and clearly informed who the client is / what the interests of the client are?	Yes ↙	No →		X	
2.4 Can test subjects refuse participation?	Yes ↙	No →		X	
2.5 Can test subjects stop at any moment / forego further participation?	Yes ↙	No →		X	
2.6 Are test subjects informed clearly about what role you are working with them in? (For example to learn from them, as employee of a client)	Yes ↙	No →		X	
2.7 Are test subjects offered the possibility to be informed of results?	Yes ↙	No →		X	
2.8 Are test subjects given incorrect information about the client, the goal of the study, or the like?	No ↙	Yes →		X	
2.9 Are (some) test subjects minors?	No ↙	Yes →		X	

2.10 Are (some) persons unable to give informed consent?	No ⬇	Yes ➔		X	
2.11 Is a protocol made that states how and in what wording test subjects are informed about points 2.1 to 2.8?	Yes ➔		An information letter will be sent out to the potential participants explaining the background and the goal of the research, the role of the participant, explaining how confidentiality will be kept with the collected data. It will also explain the rights of the participant connected to this research. For any further information they will be given the researcher's contact details.		
		No ➔			
<b>3</b> <b>Possible side effects</b>					
3.1 Has there been any misleading of test subjects during the study?	No ⬇	Yes ➔		X	
3.2 Does participation cause the test subject to have detrimental experiences psychologically, socially, physically or otherwise? Think here, among other things, of awareness of something unpleasant; embarrassing, frustrating or stressful; finding out about results unintendedly; etc.	No ⬇	Yes <input type="checkbox"/>	The test subjects might experience psychological side effects where they began to think they have a health problem. In order to prevent this, an interview guide will be made with careful consideration on wording and which questions they can be asked reviewed by the thesis supervisor and the research client.		X
3.3 Can groups (this also includes vulnerable groups/minorities) have detrimental experiences because of their participation in e.g. research results or publicity about it?	No ⬇	Yes ➔		X	
3.4 Can organisations and the like (for example a school or housing corporation that looks 'bad') be detrimentally affected by results or publicity related to the study?	No ⬇	Yes ➔		X	
3.5 Can decisions based on research be taken (for instance by the client) that could be detrimental for certain people / groups of people?	No ⬇	Yes ➔		X	

3.6 Can results/test results be shocking/unpleasant for those involved?	No ↙	Yes →		X	
<b>4. Weighing pros and cons</b>					
If the text above includes issues through which test subjects or others could be wronged, there may be advantages in the research against this (improvement of people's situation, educational/learning goals, earnings, etc.). Are such advantages present?	Yes	No →			

### Appendix 3: Information letter

How do elderly people (aged 60 and over) perceive (physical) frailty and the physical aspects of healthy ageing?

The life expectancy of people in developed and developing countries has increased by about 30-40 years in the last 100 years (Fried, 2016). This new stage of life that was added by these decades comes with its own challenges. There are many different diseases that are associated with older age for example, Alzheimer's disease or Parkinson's disease (Li et al., 2021). Additionally, in this new stage of life a new physical state may appear called frailty. Frailty is defined as a clinical state where a person's ability to cope with different stressors is compromised due to aging related declines in physiological reserves and due to functional declines in multiple organ systems (*WHO Clinical Consortium on Healthy Ageing*, 2016). This means that people who are frail lose weight unintentionally, are prone to exhaustion, slowness, weakness and have low levels of physical activity.

In this study, in-depth interviews will be conducted to explore how older people perceive their own physical health and what they think they should do to prevent frailty in order to age healthily. The interviews can be done in person or online depending on the preference of the participant either in English or in Hungarian. Each interview will take about 30 -40 minutes, and each participant will only be visited once concerning this study.

All gathered data will be anonymized, remain confidential and used for research purposes only.

Participation is voluntary and all participants may withdraw from the study at any point before as well as during the study without giving a reason.

For any further information, do not hesitate to contact the researcher:

Eszter Munkácsy

[e.munkacsy@st.hanze.nl](mailto:e.munkacsy@st.hanze.nl)

+36309432203

Bibliography:

Fried, L. P. (2016). Interventions for Human Frailty: Physical Activity as a Model. *Cold Spring Harbor Perspectives in Medicine*, 6(6), a025916. <https://doi.org/10.1101/cshperspect.a02591>

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#### **Appendix 4: Informed consent form**

### **Consent form: How do elderly people (aged 60 and over) perceive (physical) frailty and the physical aspects of healthy ageing?**

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*Budapest,*

*Dear Sir/Madam,*

As part of the Physiotherapy Programme at Hanze University of Applied Sciences Groningen you are invited to participate in a research project: How do elderly people (aged 60 and over) perceive (physical) frailty and the physical aspects of healthy ageing?

#### **What is the study about?**

In this study, in-depth interviews will be conducted to explore how older people perceive their own physical health and what they think they should do to prevent frailty in order to age healthily.

The life expectancy of people in developed and developing countries has increased by about 30-40 years in the last 100 years (Fried, 2016). This new stage of life that was added by these decades comes with its own challenges. There are many different diseases that are associated with older age for example, Alzheimer's disease or Parkinson's disease (Li et al., 2021). Additionally, in this new stage of life a new physical state may appear called frailty. Frailty is defined as a clinical state where a person's ability to cope with different stressors is compromised due to aging related declines in physiological reserves and due to functional declines in multiple organ systems (*WHO Clinical Consortium on Healthy Ageing*, 2016). This means that people who are frail lose weight unintentionally, are prone to exhaustion, slowness, weakness and have low levels of physical activity.

#### **What does this mean for you?**

The interviews can be done in person or online depending on your preference either in English or in Hungarian. The interview will take approximately 30-40 minutes and you will only be visited once concerning this study. Your participation in the study is limited to giving consent for the information you provide during the interview and the anonymized information being

used for research purposes. The information gathered anonymized, remain confidential and used for research purposes only.

**Would you like to participate?**

By signing this form, you indicate that you agree to participate in this study. You state that you are aware of the fact that the information you provide is, and will remain, confidential.

Even after signing this form, you reserve the right to withdraw from participating in the study at any time, without giving a reason. Your decision with regard to participating in the study will not affect the treatment you receive from your physiotherapist in any way whatsoever, both now and in the future.

Looking forward to your cooperation in this study,  
Kind regards,  
Eszter Munkácsy

<i>By signing this form, I indicate that I have been sufficiently informed about the research and agree to voluntarily participate in the study.</i>	
Name .....	
Date .....	Signature .....