

14 INTERPROFESSIONAL COMMUNICATION IN EVALUATING GERIATRIC CLIENT'S FUNCTIONING ON A HOME VISIT

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14.1 Changes according to ageing

Aging in the human body happens gradually starting from an early childhood. It affects to the whole body from the cell level to the different structures of the body. If we think about the chronologic age, officially people after the age of 65 years are said to be at the older age. But when we think about the biological age, physiologically people age in a different rhythm, if we think about the changes in the body and the functioning. There is also a psychologic age, which is based on how people act and feel (Stefanacci 2024).

Most age-related biologic functions reach their peak before age of 30. After that they gradually decline linearly. (Stefanacci 2024). The bones lose their density in ageing. The amount of calcium, which keeps the bones strong, decreases because the body absorbs less calcium and vitamin D from foods. (Stefanacci 2024). Bone density may decrease, and bone structure may deteriorate from as early as 35-40 years of age. Changes are more pronounced after age 50, especially with women. (Suominen and Suominen, 2022)

The amount of muscle tissue decreases as a person ages, while the muscle tissue that is lost is at least partly replaced by adipose tissue. (Suominen and Suominen 2022) Both, fast muscle fibers (type I) and slow fibers (type II) decrease. The connective tissue membranes between the muscle fibers thicken to some extent and fat accumulates in the muscle interstices. In sarcopenia muscle protein breakdown and synthesis are imbalanced leading to the loss of muscle mass and muscle function in old age, which in turn often leads to reduced functional capacity and quality of life. Decreased amount of physical activity and poor nutrition can cause sarcopenia. Regular physical activity can prevent sarcopenia. With aging, the tensile strength of the tendon decreases, because the tendons are almost exclusively composed of parallel collagen fibers. (Tilvis 2016.) Also, the muscle strength declines by about 1.5-2% per year after the age of 65 (Suominen and Suominen, 2022). The reaction time increases by about a quarter, due to anatomical and physiological changes in the central nervous system. (Tilvis 2016)

14.2 Functioning

Functional ability or functioning refers to a person's ability to cope with everyday life. Functioning can be considered in terms of physical functioning (e.g. getting outdoors, walking and coping with household chores), mental functioning (e.g. cognition and mood) and social functioning (e.g. loneliness and social isolation). (Pitkälä, Valvanne, Huusko, 2016) A gradual decline in functioning is seen first in the advanced activities of daily living (AADL), such as social participation and active physical activity. This is followed by problems with instrumental activities of daily living (IADLs), such as doing household chores, going to the shops, driving a car and using medicines and the telephone. Eventually, the basic activities of daily living (BADL), such as walking, bathing, getting out of bed and out of a chair, getting dressed, going to the toilet and eating, are affected. (Pitkälä, Valvanne, Huusko, 2016)

Functional impairment or deterioration in functioning is defined as a difficulty or need for assistance with activities of daily living that are necessary for independent living. A functional disability occurs when a person's mental or physical capacity is insufficient to meet the demands of the environment. The older person is an active player who reacts and adapts to their activity deficit and its consequences, e.g. by exercising, adapting their needs or using assistive devices. Another option is to modify participation, e.g. by obtaining outside help or modifying the environment to make it more functional. (Pitkälä, Valvanne, Huusko, 2016)

The more the capacity to function deteriorates, the more the older people are vulnerable to the effects of the environment. Living in a familiar environment allows the older people to be autonomous throughout life span. In a familiar environment, an older person develops compensatory and coping mechanisms as their functioning declines. An environment that is barrier-free, accessible and safe improves the elderly person's survival at home for longer. (Pitkälä, Valvanne, Huusko, 2016)

A dysfunction can occur slowly or as a sudden catastrophe. The incidence of slowly progressive functional impairment increases more rapidly with age than that of sudden onset functional impairment (Pitkälä, Valvanne, Huusko, 2016). Functional impairment or deterioration in functioning is influenced not only by a person's physical functioning, but also by psychological (e.g. cognition and mood) and social functioning (social activity, social networks), as well as by the physical environment and available aids. (Pitkälä, Valvanne, Huusko, 2016).

Several factors affect the development of disabilities. According to Verbrugge & Jette (1994), the extra-individual factors, like medical care and rehabilitation, medications, need of external supports and environment (built, physical, and social) can affect disabilities. The intra-individual factors affecting are lifestyle and behaviour changes and psychosocial resources. (Verbrugge and Jette, 1994) This shows that internal and environmental factors can speed up or slow down the onset of functional deficiencies (Pitkälä, Valvanne, Huusko, 2016).

Hospitalization is a major risk factor for older people for developing functional impairments. Around one third do not return to their pre-hospital level of functioning, even if the acute illness is successfully treated. Hospital care is often passive, with limited mobility and not necessarily adequate nutrition and fluid intake. Medications may contribute to the inactivity of the patient. Post-hospital factors, such as lack of follow-up rehabilitation, may predispose to reduced functional capacity. (Pitkälä, Valvanne, Huusko, 2016). To minimize functional impairments, unnecessary bed rest should be avoided, adequate food and drink intake, and constant critical review of the medication list should be completed. (Pitkälä, Valvanne, Huusko, 2016).

14.3 Assessment of functioning of an elderly person

Older people are usually willing to continue their lives at home as long as possible. Assessment of a person's ability to live independently at home is an important duty for health care professionals. (Schulman-Green et al 2006; Huang et al 2007.) Comprehensive geriatric assessment is a multidisciplinary process involving physical, mental, cognitive and socioenvironmental aspects of functioning. (Stefanacci, 2022). It should always have a holistic approach. (Ramani, Furnedge & Reddy 2014.) Determining functioning only in a hospital or institutional setting can give a wrong picture of an older person's ability to cope at home, unless the requirements and opportunities of their living environment are known and understood, and the views of relatives and friends are taken into account. (Pitkälä, Valvanne, Huusko, 2016) Assessment is difficult, however, as living independently involves multiple functional domains.

Interprofessional collaboration is defined within healthcare as an active and ongoing cooperation between professionals from different backgrounds and professional cultures working together in providing services for the healthcare users. (Schot, Tummers & Noordegraaf 2020)

The geriatric assessment is a multidisciplinary assessment. It aims to evaluate an older person's functional ability, physical and mental health, cognition, and socioenvironmental circumstances. It is usually initiated when the physician or family members identifies a potential problem. The geriatric assessment differs from a standard medical evaluation by emphasizing functional capacity and quality of life. Often, it is completed in a multidisciplinary team. (Bassem & Higgins 2011)

14.3.1 The short physical performance battery

The Short Physical Performance Battery (SPPB) is a well-established and reliable test for measuring the performance of the lower limbs of older people (Pavasini et al 2016). The SPPB tests balance, lower extremity strength, and functional capacity in older adults above the age of 65 years. It includes three different parts: walking, sit-to-stand and balance to assess functional mobility. (Physio-pedia) The SPPB score lower than 10 is predictive of all-cause mortality. The test may provide useful prognostic information about the risk of all-cause

mortality, but it also provides useful and reliable information about the geriatric client's ability to perform daily living activities. (Pavasini et al 2016)

The first part of this test battery is **Chair stand**, which measures the strength of the lower limbs. This ability is needed in daily living functions, like walking, dressing, cooking, to mention some of those. The test begins with single chair stand in which the person is sitting in a chair with the back resting on the backrest, arms crossed over the chest and feet firmly on the floor. If the person can complete the stand up once, we can move to repeated chair stand in which the person stand up from sitting position five times. If the person tries to stand up, but needs to take support from the knees, the test is not needed to continue (Figure 1).



Figure 1 chair stand test with arms on the side of the body. To be able the stand up, this person needs to take support also form the knees. (Picture by Törne M, 2024)

The repeated chair stand in which the person stands up from sitting position five times is then performed. The time is taken with watch. The person is asked to perform sit-to-stand movement as quickly as possible.

The results are scored as follows:

- Participant unable to complete 5 chair stands or completes stands in >60 sec: 0 points
- If chair stand time is 16.70 sec or more: 1 point
- If chair stand time is 13.70 to 16.69 sec: 2 points
- If chair stand time is 11.20 to 13.69 sec: 3 points
- If chair stand time is 11.19 sec or less: 4 points (Physiopedia)

For safety reasons it is important that the chair is placed against the wall. The physiotherapist is needed to stand very close to the person, if the balance is lost.

The second subtest in the SPPB is the balance, which has three parts: side-by-side-stand, semi-tandem stand and tandem stand. Balance is needed in almost all the daily living activities. The balance part is not performed, if the person is unable to stand independently in a stationary position without support or assistance. If the person with an assistive device can stand safely in a stationary position without support, testing can be done.

In side-by-side-stance the person stands with feet together for 10 seconds (picture 2).



Figure 2. Side-by-side stance with feet together. (Picture by Törne M, 2024)

The scoring for side-by-side stance is as follows:

- Held for 10 sec: 1 point
- Not held for 10 sec: 0 points
- Not attempted: 0 points
- If 0 points, end Balance Tests (Physiopedia)

If the person is unable to stand feet together without holding support from e.g. a chair or the feet do not stay together, the person gets 0 points, and the balance test part is not continued.

The second part is the semi-tandem stance, the person stands unsupported with the side of the heel of one foot touching the big toe of the other foot for 10 seconds (picture 3). The person may use the arms, bend the knees, or move the body to maintain balance, but they are not allowed to move their feet.



Figure 3. Semi-tandem stance. (Picture by Törne M, 2024)

The scoring for semi-tandem stance is as follows:

- Held for 10 sec: 1 point
- Not held for 10 sec: 0 points
- Not attempted: 0 points
- If 0 points, end Balance Tests (Physiopedia)

The last part of the balance test is the tandem stance (picture 4). The person is instructed to stand with the heel of one foot in front of and touching the toes of the other foot for 10 seconds. Again, in this test, the person may use their arms, bend their knees, or move their body to maintain the balance. The feet are not allowed to be moved.



Figure 4. Tandem stance. (Picture by Törne M, 2024)

The scoring for the tandem stance is as follows:

- Held for 10 sec: 2 points
- Held for 3 to 9.99 sec: 1 point
- Held for < than 3 sec: 0 points
- Not attempted: 0 points (Physiopedia)

The last part in SPPB is the walking test, which tests the gait speed. The participant walks on the line on the floor (3 or 4 meters) at a normal pace (picture 5). The time is recorded. The assistive device can be used. For safety, the physiotherapist should walk beside the person.



Figure 5. Walking speed. (Picture by Törne M, 2024)

The scoring for For 4-Meter Walk test is as follows:

- If time is more than 8.70 sec: 1 point
- If time is 6.21 to 8.70 sec: 2 points
- If time is 4.82 to 6.20 sec: 3 points
- If time is less than 4.82 sec: 4 points (Physiopedia)

14.3.2 The Barthel index

The Barthel Index for Activities of Daily Living is an ordinal scale which measures a person's ability to complete activities of daily living (ADL) (Physio-pedia). Barthel Index was created in 1965 to assess functional independence to perform 10 daily activities, and it has been mostly used with neurological diseases and the elderly (dos Santos Barros et al 2022). When the person gets very low score in Barthel Index, they are more likely to be dependent on caregivers and/or assistive devices. This is very valuable information, when we talk about functioning. The following ten daily living activities including basic mobility are measured with the Barthel index: Feeding, Bathing, Grooming, Dressing, Bowel, Bladder, Toilet use, Transfers bed-to-chair-and-back, Mobility on level surfaces, Stair negotiation. Any member of the multidisciplinary team can perform the Barthel Index. The Barthel Index is not meant to be used as the only assessment tool to see functioning of the person. It should be part of a complement of assessments to create a full picture of a person's functioning. (Physio-pedia).

When completing the Barthel Index, it is important to assess what the person actually does and how they complete the tasks instead of only asking the person their own opinion. To be able to see this, allow the person to complete the functional tasks as independently as possible without providing physical or verbal assistance. Make sure it is safe for the person. If they need assistive devices or aides, it can be allowed. Assistive devices can be used, and the test can still be scored as independent, but if the patient requires supervision they cannot be scored as independent. The examiner can also ask the patient, a family member, or other staff for information if needed. The Barthel Index is used as a part of a assessment to create a full picture of a patient's ability and rehabilitation potential. (Physio-pedia)

14.4 Interprofessional Communication

A term interprofessional collaboration is used in this learning module to describe cooperation between occupational groups representing different professions. The fluency of interprofessional communication between a physiotherapist and a nurse in assessing geriatric client's functioning to live at home independently is important. The situation of a geriatric client needs to be seen through a holistic approach. Culturally sensitive communication demonstrates understanding and respect for individuals and promotes patient and family satisfaction. (Brooks, Manias & Bloomer 2019)

Interprofessional collaboration is necessary to provide optimal and effective patient care and improve the quality of health care. It means that health care professionals with different specialties, different areas of expertise and work, and a different level of status all work together to provide high-quality, patient-oriented care. It also ensures that the patient benefits from the specific skills of each individual profession (Mahler et al 2014)

Interprofessional communication used in interprofessional collaboration must be working well to maintain the quality of care. Ineffective communication in healthcare results in different kinds of patient harm and adverse effects (Foronda et al. 2016, Hunter et al 2021). In addition to being able to communicate professionally with patients, families, communities, it is as important to be able to communicate with all professionals in health and other fields in a responsive and responsible manner. This supports the approach to the promotion and maintenance of health and the prevention and treatment of disease or disorder (Interprofessional Education Collaborative 2016)

A high quality, patient-centered care can be assured by culturally appropriate communication between health care professionals and with patients. In cross-cultural situations, cultural competency is very important for effective cooperation between health care professionals and their patients. (Hunter, Majd, Kowalski & Harnett. 2021)

14.5 The case; clinical reasoning

In the videos, the client called Martta Mäkinen and her functioning is assessed. Now you can get familiar with the case description and the test results:

Martta Mäkinen

88-yrs old lady living at home with the help of home care and home care nurse. No children, husband passed away 20 yrs ago. Her sister's daughter has helped going to the bank and grocery store. Her medical diagnosis are Type 2 Diabetes (insulin dependent), Myocardial infarction in 2015 and Hypertension for 30 yrs. She fell at home and was taken to hospital by ambulance 3 days ago. She was complaining about pain in the left shoulder. The x-rays showed no fractures, but she is having large hematoma in the shoulder and moving the arm seems painful. No acute ischemic changes seen in ECG. No cerebrovascular accident seen in head MRI. She was discharged from hospital yesterday and the doctor has given a referral to a physiotherapist for a home visit and evaluation of the ability to live at home independently.

Test results for Martta are as follows:

Short physical performance battery

1. Chair stand 0 points
2. Side-by-side-stand 0 points: the following balance tests were not needed to be done

3. Semi-tandem stand 0 points
4. Tandem stand 0 points
5. Walk test time 9,20 seconds = 1 point

For Barthel index her scoring was as seen in the picture 6.

Barthel Index of Activities of Daily Living	
<p>Instructions: Choose the scoring point for the statement that most closely corresponds to the patient's current level of ability for each of the following 10 items. Record actual, not potential, functioning. Information can be obtained from the patient's self-report, from a separate party who is familiar with the patient's abilities (such as a relative), or from observation. Refer to the Guidelines section on the following page for detailed information on scoring and interpretation.</p>	
The Barthel Index	
<p><u>Bowels</u> 0 = incontinent (or needs to be given enemata) 1 = occasional accident (once/week) 2 = continent Patient's Score: <u>2</u></p> <p><u>Bladder</u> 0 = incontinent, or catheterized and unable to manage 1 = occasional accident (max. once per 24 hours) 2 = continent (for over 7 days) Patient's Score: <u>2</u></p> <p><u>Grooming</u> 0 = needs help with personal care 1 = independent face/hair/teeth/shaving (implements provided) Patient's Score: <u>0</u></p> <p><u>Toilet use</u> 0 = dependent 1 = needs some help, but can do something alone 2 = independent (on and off, dressing, wiping) Patient's Score: <u>1</u></p> <p><u>Feeding</u> 0 = unable 1 = needs help cutting, spreading butter, etc. 2 = independent (food provided within reach) Patient's Score: <u>2</u></p>	<p><u>Transfer</u> 0 = unable – no sitting balance 1 = major help (one or two people, physical), can sit 2 = minor help (verbal or physical) 3 = independent Patient's Score: <u>3</u></p> <p><u>Mobility</u> 0 = immobile 1 = wheelchair independent, including corners, etc. 2 = walks with help of one person (verbal or physical) 3 = independent (but may use any aid, e.g., stick) Patient's Score: <u>3</u></p> <p><u>Dressing</u> 0 = dependent 1 = needs help, but can do about half unaided 2 = independent (including buttons, zips, laces, etc.) Patient's Score: <u>1</u></p> <p><u>Stairs</u> 0 = unable 1 = needs help (verbal, physical, carrying aid) 2 = independent up and down Patient's Score: <u>1</u></p> <p><u>Bathing</u> 0 = dependent 1 = independent (or in shower) Patient's Score: <u>0</u></p> <p>Total Score: <u>15</u></p>
<p>(Collin et al., 1988)</p> <p><u>Scoring:</u> Sum the patient's scores for each item. Total possible scores range from 0 – 20, with lower scores indicating increased disability. If used to measure improvement after rehabilitation, changes of more than two points in the total score reflect a probable genuine change, and change on one item from fully dependent to independent is also likely to be reliable.</p> <p><u>Sources:</u></p> <ul style="list-style-type: none"> • Collin C, Wade DT, Davies S, Horne V. The Barthel ADL Index: a reliability study. <i>Int Disabil Stud.</i> 1988;10(2):61-63. • Mahoney FI, Barthel DW. Functional evaluation: the Barthel Index. <i>Md State Med J.</i> 1965;14:61-65. • Wade DT, Collin C. The Barthel ADL Index: a standard measure of physical disability? <i>Int Disabil Stud.</i> 1988;10(2):64-67. 	

Figure 6 Martta's Barthel index (British Geriatric Society).

You could now make your own clinical reasoning for Martta's functioning and spend some time with thinking the following questions:

1. How you would describe Martta's functioning, if you consider the physical functioning?
2. In your opinion, is her still able to live at home independently?
3. What is the need for assistance and what kind of assistance she would need at home?

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