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Laying the foundation for an International Classification of Functioning, Disability and Health Core Set for community-dwelling elderly adults in primary care: the clinical perspective identified in a cross-sectional study

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ABSTRACT

Objectives Having more information about the biopsychosocial functioning of their geriatric patients might help physicians better balance medical interventions according to patients' needs. For this reason, we aimed to develop an easy-to-handle International Classification of Functioning, Disability and Health (ICF) Core Set for community-dwelling geriatric patients aged 75 and older in primary care. In this empirical study, we describe the functioning and health of community-dwelling patients aged 75 and older in primary care in Germany and identify the most common problems encountered by these individuals when using the ICF.

Design In this exploratory, cross-sectional study, a health professional conducted semi-structured interviews.

Setting Community-dwelling older adults aged 75 and older in Germany.

Participants 65 participants (mean age=80.2, SD=3.6).

Outcome measures Extended ICF Checklist V.2.1a, patients prioritised chapters of the 'activities and participation' component.

Results The three most common impairments for 'body functions' were *visual system functions* (ICF-code *b210*; 89%), *blood pressure functions* (*b420*; 80%) and *sensations associated with hearing and vestibular functions* (*b240; 59%*). For 'body structures', they were *eyes, ears and related structures* (*s2*; 81%), *structure of mouth* (*s320*; 74%) and *structures related to the digestive, metabolic and endocrine systems* (*s5*; 49%). For the 'activities and participation' component, adequate aids compensated for activity limitations to a certain degree. Still, after having adequate aids, the category in which the participants had the most difficulty was *walking* (*d450;* 35%). Participants rated the 'mobility' chapter as the most important of all chapters. 'Environmental factors' were facilitators of participants' functioning.

Conclusions This empirical study provides a list of ICF categories relevant to older adults from the clinical perspective. Along with lists from the other three preparatory studies, it will form the basis for the development of an ICF Core Set for community-dwelling older adults in primary care.

Trial registration details The trial is registered in ClinicalTrials.gov (NCT03384732).

Strengths and limitations of this study

- For the 'activities and participation' component, we assessed both the capacity and the performance qualifier.
- The health professional conducting the interviews was trained in the International Classification of Functioning, Disability and Health (ICF), and all interviews were conducted by the same person.
- The study design followed the standardised process proposed by the ICF Research Branch.
- The study sample was not representative and consisted of community-dwelling older adults living in Germany who had regular contact with a general practitioner and were not very limited in their independence.
- The ICF Research Branch recommends the use of the ICF Checklist for the empirical study of the development of an ICF Core Set; however, this instrument has not been validated.

INTRODUCTION

Primary care will face a growing number of old and very old patients. Older adults are quite often affected by multimorbidity, defined as "any combination of chronic disease with at least one other disease […] or psychological factor […] or somatic risk factor".[1] With the presence of multiple diseases, the complexity of therapeutic interventions also increases.

General practitioners (GPs), in particular, face the challenge of dealing with all these problems simultaneously.[2] With a multiplicity of guidelines for each health problem, GPs may feel overwhelmed about how to tackle the problem of multimorbidity and polypharmacy.[2 3] Furthermore, non-medical answers to real-life problems seem to be more adequate but may frequently be neglected. Consequently, merely combating the diseases of older patients no longer appears to be the only option. Medical treatment is shifting more and more towards the reintegration, compensation and retention of participation. Encouraging participation can also mean that certain activities are possible with technical or personal assistance, for example, with the help of a wheelchair or caregiver.

A recognised tool that adds a common, defined language for describing functioning is the International Classification of Functioning, Disability and Health (ICF) published by the WHO.[4] The ICF provides a framework for health and health-related states from a biopsychosocial perspective. Contrary to other classification systems, such as the International Classification of Diseases (ICD), which focusses on the physician's perspective, the ICF is based on the patient's functioning in her or his living environment. The ICF supplements the ICD by providing a way to document the effects of a health problem at different levels. It is about activities that determine an individual's independence and participation in everyday life. Functioning and disability are viewed as a complex interaction between the health condition of the individual and the contextual factors of the environment as well as personal factors. The ICF is also multidimensional in that it includes personal and social factors. For example, Deventer *et al*[5] described the idea that the treatment and rehabilitation of an elderly female patient with polyarthrosis and already existing endoprostheses might not have the goal of reducing her arthrosis. More importantly, the therapy should enable the patient to care for herself independently in the home she shares with her husband for as long as possible.

In the ICF, functioning is described with the components of 'body functions' (b), 'body structures' (s), 'activities and participation' (d), 'environmental factors' (e) and 'personal factors' (which are not further classified). All components (b, s, d and e) are structured hierarchically (chapter=first-level item – second-level item – third-level item – fourth-level item), which is reflected in an alphanumeric coding system. For example, in the 'activities and participation' component, the chapter 'd4 mobility' deals with all aspects of mobility (first-level item). The second-level item 'd450 walking' and the third-level item 'd4500 walking short distances' are subordinate categories in this chapter, each containing a brief definition. The 'body functions' and 'body structures' classifications also contain fourth-level items. However, because the ICF contains more than 1400 categories, the classification system is far too detailed to be used in daily practice. This might be one reason why the ICF has hardly ever been used in primary care so far. To overcome this problem, researchers have developed shorter lists of categories for specific health conditions called Core Sets. These ICF Core Sets cover the typical spectrum of categories that are relevant to individuals suffering from a certain condition and have thus far mostly been used in rehabilitation medicine. For geriatric patients, different ICF Core Sets have already been developed for very specific conditions, for example, early post-acute rehabilitation.[6–8] However, these Core Sets are too specific to be used in primary care and neither of these Core Sets was developed according to the standardised process proposed by the ICF Research Branch.[9] For example, in developing a Geriatric Core Set, Spoorenberg *et al*[7] conducted two substudies. First, a Delphi study was conducted to achieve consensus on a potential Geriatric ICF Core Set. Second, the content validity of the Core Set was verified in a cross-sectional study that used a sample of older adults.

It is the aim of our workgroup to develop an ICF Core Set that covers the life and functioning of geriatric patients aged 75 and older in primary care in Germany. ICF Core Sets are developed by means of a scientific and multimethod process.[9] In the preparatory phase of this process, we conducted four different studies from four different perspectives, each resulting in preliminary results that will be combined into an ICF Core Set by using the standardised process proposed by the ICF Research Branch.[9] Capturing these different perspectives will make it possible to obtain a holistic understanding of the specific health-related aspects of community-dwelling geriatric patients aged 75 and older. The four studies consist of: (1) a systematic literature review covering the research perspective,[10] (2) a qualitative study covering the perspective of geriatric patients aged 75 and older,[11] (3) an expert survey covering the experts' perspective and (4) this empirical study covering the clinical perspective in which a health professional conducted semi-structured interviews with geriatric patients.

The objectives of the present empirical study from the clinical perspective were (1) to describe the functioning and health of geriatric patients aged 75 and older in primary care in Germany and (2) to identify the most common problems encountered by these individuals.

METHODS

Design

In a cross-sectional study design, a health-professional conducted semi-structured interviews with geriatric patients about their functioning and health (one-on-one interviews). This is the study design that is recommended by the ICF Research Branch.[9] The study is part of the ICF project in the **Pr**eventing **O**verdiagnosis in **Pri**mary **Care** (PRO PRICARE) research network. A more detailed description of the ICF project, in which we are developing an ICF Core Set for community-dwelling elderly adults in primary care, was published previously.[12] All procedures were approved by the Friedrich-Alexander-University Erlangen-Nürnberg Ethics Committee (Re.-No. 90_17 B).

Recruitment

We chose three different ways to recruit participants so that we could represent the living conditions of community-dwelling older adults. A convenience sample of community-dwelling adults aged 75 years and older was recruited by seven GPs in Franconia in Germany (so-called 'Forschungspraxen Franken') who are part of the PRO PRICARE research network. Additionally, study participants were recruited by city departments and different senior clubs in the Erlangen/Nürnberg region. Individuals were included if they: (1) were aged 75 or older, (2) were living independently in the community and (3) had regular contact with a GP. Exclusion criteria were people living in nursing homes, people living in palliative care or people with dementia. The last was operationalised by a score on the Montreal Cognitive Assessment (MoCA) <22 and at the same time a score on the Mini-Mental State Examination (MMSE) <24.

Participation was voluntary, written informed consent was obtained from all participants and participants were free to leave the study at any time. Each study participant received 75€ and information about mental fitness in old age as a representation allowance.

Extended ICF Checklist V.2.1a

The ICF Checklist[13] provides a list of 128 first-level and second-level ICF categories covering a wide spectrum of possible relevant areas of functioning. We adjusted the ICF Checklist to our sample by modifying some categories: As the categories *learning to read (d140)*, *learning to write (d145)* and *learning to calculate (d510)* are no longer relevant for older adults, we replaced them with the categories *reading (d166)*, *writing (d170)* and *calculating (d172)*. Furthermore, we added 4 categories from the Geriatric Core Set[7] (*sensations associated with hearing and vestibular functions (b240), exercise tolerance functions (b455), protective functions of the skin (b810) and changing basic body position (d410)*) and 11 categories from the ICF Core Set for Patients in Geriatric Post-Acute Rehabilitation Facilities[14] that we thought might also be relevant for our sample and that were not already included in the ICF Checklist (*sensations associated with cardiovascular and respiratory functions (b460), sensations associated with urinary functions (b630), structure of mouth (s320), additional musculoskeletal structures related to movement (s770), carrying out daily routines (d230), using communication devices and techniques (d360), maintaining a body position (d415), transferring oneself (d420), moving around in different locations (d460), time-related changes (e245), and individual attitudes of acquaintances, peers, colleagues, neighbours and community members (e425)*). Because some categories were not applicable to our sample, we removed four categories: *school education (d820)*, *higher education (d830)*, *education and training services, systems and policies (e585)* and *labour and employment services, systems and policies (e590)*. Thus, the extended ICF Checklist contained a total of 139 categories.

Various qualifiers were used to denote the severity (extent or magnitude) of the level of the health problem or the severity of the problem at hand. Each category was evaluated using a qualifier scale. For the components 'body functions' and 'body structures', the scale ranged from 0 ('no impairment') to 4 ('complete impairment'). For the 'activities and participation' component, we used two qualifier scales for each category, both ranging from 0 ('no difficulty') to 4 ('complete difficulty'). The 'performance qualifier' described "the person's actual performance of a task or action in his or her current environment"[13] and included the use of assistance such as glasses, canes, instrumental help and so forth. The 'capacity qualifier' described "the person's ability to execute a task or an action"[13] without assistance. For the 'environmental factors' component, the scale ranged from +4 ('complete facilitator') to 0 ('no facilitator'/'no barrier') to −4 ('complete barrier'). The qualifier 8 was used if the available information was 'not specified', and the qualifier 9 was used if the category was 'not applicable'.

Furthermore, for the 'activities and participation' component, the participant was asked to rate the importance of the nine chapters from 1 ('most important') to 9 ('least important').

Data recording

A trained health professional conducted semi-structured interviews with each participant. The rating of each ICF category was assessed at the discretion of the interviewer as she interacted with the respondent by explaining the category and giving examples. Finally, the health professional rated each category by taking into account the study participant's direct responses and the observations the interviewer made during the interview. Sociodemographic data and additional information on health (eg, diseases, medication, use of appliances such as walking or hearing aids) were obtained. Most of the interviews were conducted in the homes of the study participants.

Data analysis

The qualifiers of the ICF categories resulting from this assessment were analysed with descriptive statistics. We report the relative frequencies (prevalence) of raters' codings of impairment/difficulty (0 to 4) of the ICF categories assigned to the components 'body functions', 'body structures' and 'activities and participation' in the sample. For the ICF categories assigned to the component 'environmental factors', we present the relative frequencies (prevalence) of people who regarded a specific category as a barrier (−1 to −4), facilitator (+1 to +4) or no barrier/facilitator (0). In the analyses, the response options 'not specified' and 'not applicable' were not taken into account.

As we assessed a large number of categories that are not all relevant for our sample, we report only the categories that were described as being an impairment, difficulty or barrier/facilitator by at least 5% of the participants (cut-off for reporting). For the importance rating of the 'activities and participation' component, we report medians because these data are ordinal.

Table 1 Sample characteristics

Characteristics	N=65
Age, M (SD)	80.2 (3.6)
Women, n (%)	48 (73.8%)
Relationship status	
Married/living in a partnership	29 (44.6%)
Single/divorced	13 (20.0%)
Widowed	23 (35.4%)
Education, n (%)	
Lower secondary education ('Hauptschule')	23 (35.4%)
Secondary education ('Realschule')	29 (44.6%)
Advanced secondary education ('Gymnasium')	2 (3.1%)
Higher education (University)	11 (16.9%)
Living alone, n (%)	37 (56.9%)
Using glasses, n (%)	64 (98.5%)
Using hearing aids, n (%)	19 (29.2%)
Using walking aids, n (%)	14 (21.5%)
MoCA score, M (SD)	26.3 (2.5)

MoCA, Montreal Cognitive Assessment;

Microsoft Excel 2010 was used for the frequency analyses of the ICF categories. For other statistical analyses (eg, demographic analyses), we used IBM SPSS Statistics 21.

Patient and public involvement

Patients and the public were not involved in this study.

RESULTS

Sample

We initially included 68 participants. Of these, we had to exclude two participants because of dementia and one participant because of blindness. Thus, the final sample consisted of 65 participants. The proportion of women in the sample was 73.8%. Participants' ages ranged from 75 to 92 years, with a mean of 80.2 years (SD=3.6). All participants were retired. Only four (6.2%) had never been employed at all. Thirty-three (50.8%) individuals received help for self-care and domestic life (eg, from cleaners, gardeners, family or neighbours). The most common diseases were blood pressure disorders (80.0%), heart disease (35.4%) and bone and joint diseases (29.2%). All participants reported being under regular medical supervision or were receiving prescription drugs from a medical doctor. Sociodemographic data can be seen in table 1.

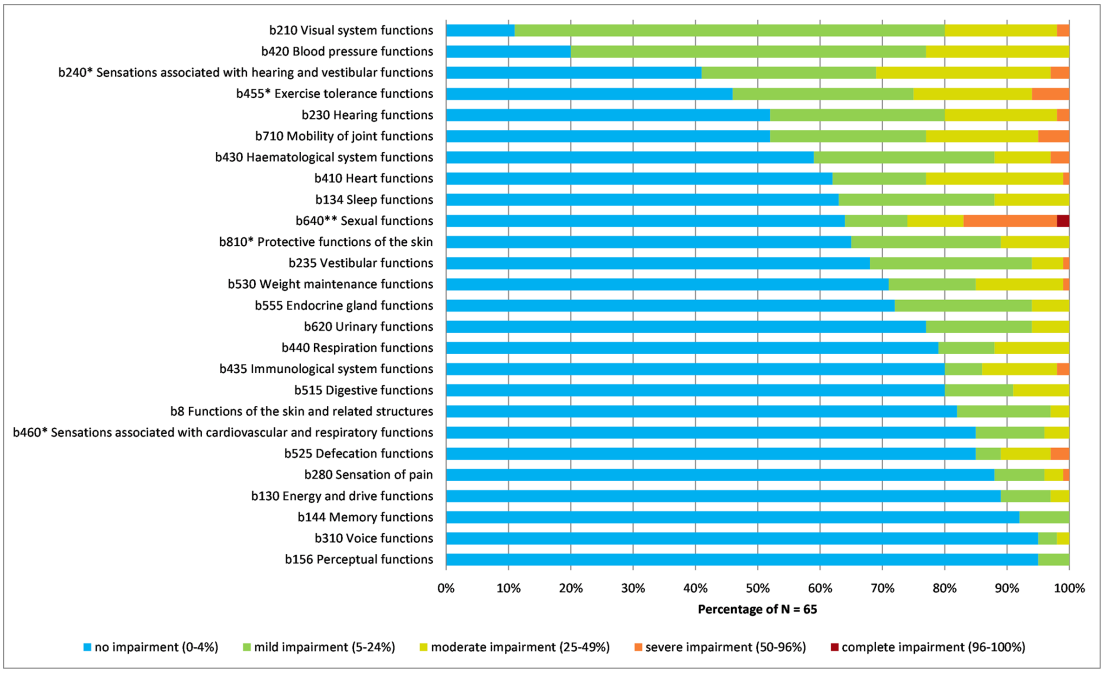

Figure 1 Prevalence of impairment in the ICF categories from the 'body functions' component. Graphs present the proportional distribution of ICF qualifiers relevant to at least 5% of the sample (cut-off for reporting). The following categories were impaired in less than 5% of participants: *b110 Consciousness functions*, *b114 Orientation functions*, *b117 Intellectual functions*, *b140 Attention functions*, *b152 Emotional functions*, *b164 Higher-level cognitive functions*, *b167 Mental functions of language*, *b630* Sensations associated with urinary functions*, *b730 Muscle power functions*, *b735 Muscle tone functions* and *b765 Involuntary movement functions*. **Not applicable: *b640 Sexual functions* (18%) – in all other categories, it was 0%. *Extension to the ICF checklist. ICF, International Classification of Functioning, Disability and Health.

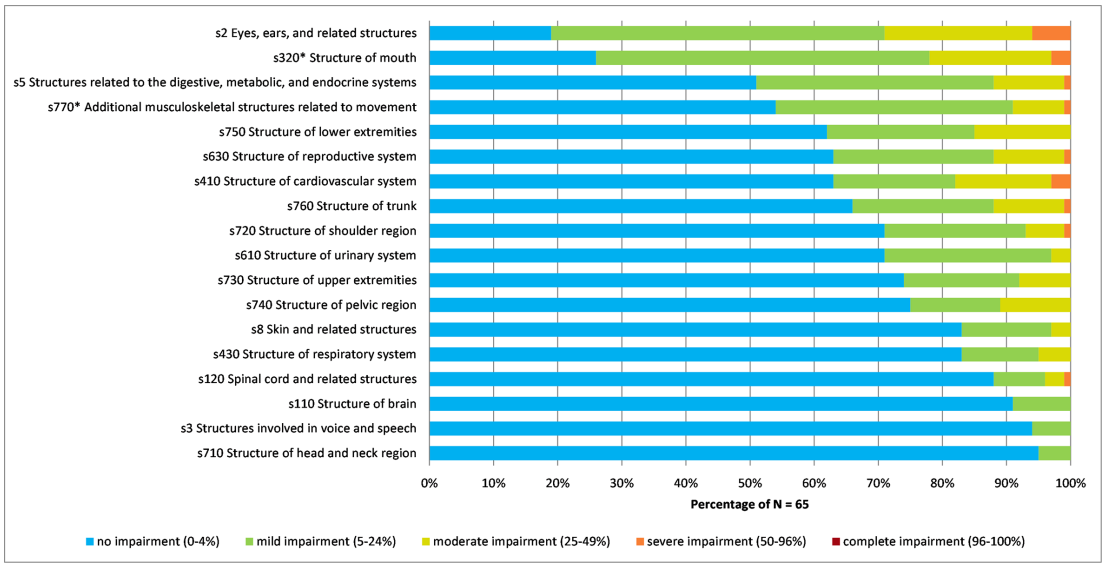

Figure 2 Prevalence of impairment in the ICF categories from the 'body structures' component. Graphs present the proportional distribution of ICF qualifiers relevant to at least 5% of the sample (cut-off for reporting). *Extension to the ICF checklist. ICF, International Classification of Functioning, Disability and Health.

Body functions and body structures

For the 'body functions' component, the categories showing impairments by at least half of the sample were (figure 1): *visual system functions* (*b210;* 89%), *blood pressure functions* (*b420;* 80%), *sensations associated with hearing and vestibular functions* (*b240;* 59%) and *exercise tolerance functions* (*b455;* 54%). The *sexual functions (b640*) category was the only category for which participants reported 'complete impairment' (4 on the rating scale; 2%). It was also the category for which the largest number of participants reported 'severe impairment' (3 on the rating scale; 15%). Twelve individuals (18%) marked this category as 'not applicable'. For 11 categories, less than 5% of the participants reported an impairment, and thus, these are not reported here (cut-off for reporting).

For the 'body structures' component, more than half of the sample reported impairments (figure 2) in the categories *eyes, ears and related structures* (*s2;* 81%) and *structure of mouth* (*s320;* 74%). The maximum qualifier 'complete impairment' was assigned to no category from the 'body structures' component. All categories were impaired for at least 5% of participants.

Activities and participation

Figure 3 presents the prevalence of ICF categories that showed difficulties on the 'activities and participation' component. Overall, the prevalence of difficulties experienced by participants was higher when categories were rated with the 'capacity qualifier' (without assistance; up to 89%) than with the 'performance qualifier' (with the use of assistance; up to 35%). However, out of the 57 categories, there were only 17 categories rated with the 'capacity qualifier' and 12 categories rated with the 'performance qualifier' that were indicated as a difficulty for at least 5% of participants (cut-off for reporting). When the 'capacity qualifier' was used, at least half of the sample reported a difficulty in three categories: *watching* (*d110;* 89%), *reading* (*d166;* 88%) and *writing* (*d170;* 59%). The corresponding 'performance qualifier' for these three codes showed impairments of only 5%, 3% and 5%, respectively. When the 'performance qualifier' was used, the category in which the participants had the most difficulty was *walking* (*d450;* 35%), which was experienced as a difficulty by 49% of participants when rated with the 'capacity qualifier'.

Table 2 shows the results of the importance ratings of the nine chapters for the 'activity and participation' component. The 'mobility' chapter was rated as the most important by participants, followed by 'self-care'. The 'major life areas' chapter was rated as being least important.

Environmental factors

Within the 'environmental factors' component, significantly more categories were reported to be facilitators rather than barriers. Only five categories were reported as being a barrier and all of them in less than 5% of participants (cut-off for reporting). All categories were reported as facilitators in at least 20% of participants. Eight categories were reported as facilitators for 100% of participants. Of the remaining categories, all but two (*individual attitudes of personal care providers and personal assistants (e440) and legal services, systems and policies (e550)*) were reported as facilitators by at least half of the sample. Table 3 shows the prevalence of barriers/facilitators in detail.

DISCUSSION

From the clinical perspective, this study presents the most common impairments in 'body functions' and 'body structures' of older adults age 75 and older in primary care in Germany. In the 'activities and participation'

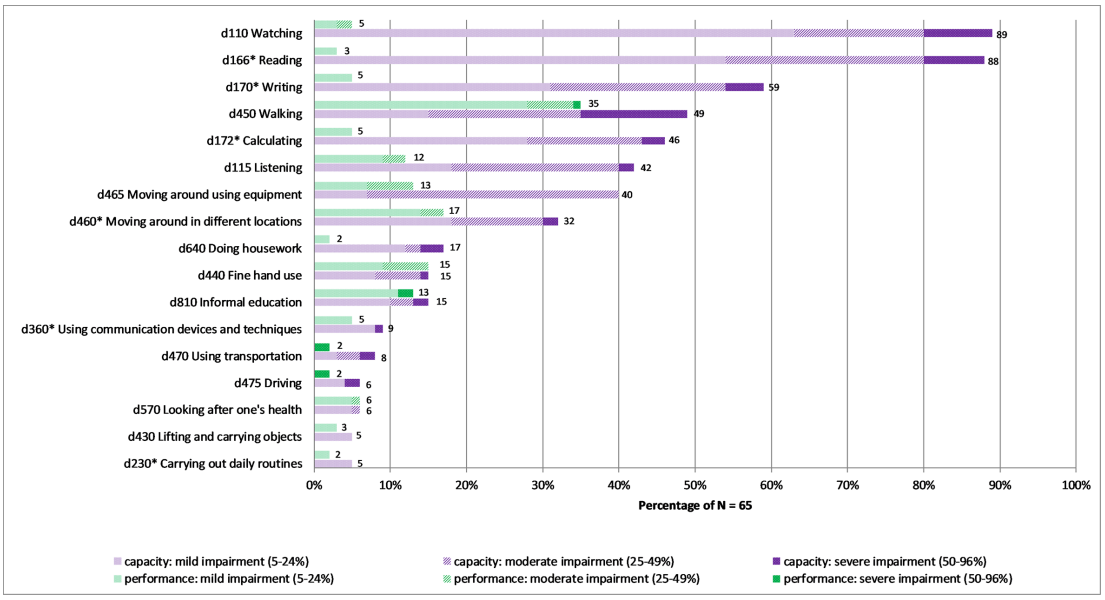

Figure 3 Prevalence of impairment in the ICF categories from the 'activities and participation' component. Capacity qualifier=without assistance, performance qualifier=with the use of assistance. Graphs present the proportional distribution of ICF qualifiers relevant to at least 5% of the sample (cut-off for reporting). Not applicable: *d465 Moving around using equipment* (77%), *d475 Driving* (28%), *d810 Informal education* (5%) and *d470 Using transportation* (3%) – in all other categories, it was 0%. *Extension to the ICF checklist. ICF, International Classification of Functioning, Disability and Health.

component, we found that many difficulties in old age could be compensated for by the use of assistive devices. In the 'environmental functions' component, all categories were experienced as facilitators of the participant's functioning (in contrast to barriers).

Body functions and body structures

With regard to 'body functions' and 'body structures', our results reflect typical impairments in old age.[15–18] Every second person was affected by impairments in vision, hearing and vestibular function and had high blood pressure or mouth impairments. It is notable that almost 40% of all participants reported impairments in *sexual functions* (*b640*), also being the category with the largest number of participants reporting 'severe impairment' (second maximum qualifier). A reason for impairment might be because a sexual partner is missing, for example, the category was rated 'not applicable' by almost one-fifth of the participants. Data on sexual activity in old age are limited. One study[19] found that 26% of people between 75 and 85 years of age were sexually active and that both men and women reported at least one bothersome sexual problem. It has been supposed that it is not age itself that influences sexual functioning but rather other diseases, medications or the psychosocial consequences of a disease or its treatment.[19 20] In a qualitative study, Levkovich *et al*[21] investigated the perceptions of GPs regarding sexuality in older adults. They found that most GPs do not initiate discourse on this subject and discuss sexuality with their older patients mostly in relation to common diseases. Besides an increased workload and lack of time, other barriers include fear of offending patients and harming the patient–physician relationship. However, sexuality remains important for many older adults, and they would like their GPs to initiate discussions on this topic.[22]

Table 2 Importance ratings of the nine chapters from the 'activity and participation' component

Rank	Chapter	Median
1	d4: Mobility	1.00
2	d5: Self-care	3.00
3	d3: Communication	4.00
3	d7: Interpersonal interactions and relationships	4.00
5	d6: Domestic life	5.00
6	d9: Community, social and civic life	6.00
6	d2: General tasks and demands	6.00
8	d1: Learning and applying knowledge	7.00
9	d8: Major life areas	9.00

Rating based on a scale from 1 (most important) to 9 (least important).

Activities and participation

In the 'activities and participation' component, we assessed both the capacity and the performance of the participants in each category. We found a larger number of difficulties for the 'capacity qualifiers' (without assistance) than for the 'performance qualifiers' (with the use of assistance). Our findings show that in old age, there are many limitations to activities, but they can be compensated by using technical devices or by getting help from other people. For example, whereas almost 90% of the sample reported difficulties in *watching* (*d110*)

Table 3 Prevalence of barriers/facilitators in the 'environmental factors' component (in %)

ICF code	Complete barrier (–4)	Severe barrier (–3)	Moderate barrier (–2)	Mild barrier (–1)	No barrier/no facilitator (0)	Mild facilitator (+1)	Moderate facilitator (+2)	Substantial facilitator (+3)	Complete facilitator (+4)	Sum barrier (-4 to –1)	Sum facilitator (+4 to +1)	Not applicable
e110 Products or substances for personal consumption	0	0	0	0	0	0	0	0	100	0	100	
e115 Products and technology for personal use in daily living	0	0	0	0	0	0	0	0	100	0	100	
e540 Transportation services, systems and policies	0	0	0	0	0	0	0	0	100	0	100	
e120 Products and technology for personal indoor and outdoor mobility and transportation	0	0	0	0	0	0	2	0	98	0	100	25
e125 Products and technology for communication	0	0	0	0	0	0	3	2	95	0	100	
e535 Communication services, systems and policies	0	0	0	0	0	0	5	0	95	0	100	
e245* Time-related changes	0	0	0	0	0	0	18	2	80	0	100	
e460 Societal attitudes	0	0	0	0	0	3	29	20	48	0	100	
e240 Light	0	0	0	1	0	5	18	2	74	1	99	
e580 Health services, systems and policies	0	0	0	0	1	2	37	23	37	0	99	
e320 Friends	0	0	0	0	1	2	0	2	95	0	99	
e465 Social norms, practices and ideologies	0	0	0	0	1	5	23	23	48	0	99	
e355 Health professionals	0	0	0	0	1	8	43	25	23	0	99	
e450 Individual attitudes of health professionals	0	0	0	0	2	14	52	12	20	0	98	
e410 Individual attitudes of immediate family members	0	0	0	0	3	0	5	3	89	0	97	
e420 Individual attitudes of friends	0	0	0	0	3	0	5	9	83	0	97	
e225 Climate	0	0	1	0	2	14	34	9	40	1	97	
e310 Immediate family	0	0	0	1	2	0	3	2	92	1	97	
e360 Health-related professionals	0	0	0	0	3	8	44	28	17	0	97	
e250 Sound	0	2	0	2	0	3	18	9	66	4	96	
e455 Individual attitudes of health-related professionals	0	0	0	0	5	15	51	12	17	0	95	
e325 Acquaintances, peers, colleagues, neighbours and community members	0	0	0	0	11	3	18	9	59	0	89	

Continued

Table 3 Continued

ICF code	Complete barrier (–4)	Severe barrier (–3)	Moderate barrier (–2)	Mild barrier (–1)	No barrier/no facilitator (0)	Mild facilitator (+1)	Moderate facilitator (+2)	Substantial facilitator (+3)	Complete facilitator (+4)	Sum barrier (-4 to –1)	Sum facilitator (+4 to +1)	Not applicable
e150 Design, construction, and building products and technology of buildings for public use	0	0	0	0	21	14	14	2	49	0	79	2
e340 Personal care providers and personal assistants	0	0	0	0	25	0	3	4	68	0	75	37
e155 Design, construction and building products and technology of buildings for private use	0	0	0	0	27	11	13	0	49	0	73	2
e525 Housing services, systems and policies	0	0	0	0	28	0	1	2	69	0	72	
e330 People in position of authority	0	0	0	0	44	17	11	3	25	0	56	1
e570 Social security, services, systems and policies	0	0	0	2	44	15	15	4	20	2	54	6
e575 General social support services, systems and policies	0	0	0	0	47	12	10	0	31	0	53	6
e440 Individual attitudes of personal care providers and personal assistants	0	0	0	0	54	0	7	0	39	0	46	37
e550 Legal services, systems and policies	0	0	0	0	80	2	3	3	12	0	20	5

Please note that the qualifier rating (–4 to +4) excludes the ratings for the categories that were rated as 'not applicable'.
*Extension to the ICF checklist.
ICF, International Classification of Functioning, Disability and Health.

(capacity), only 5% still reported these difficulties when using assistive devices such as glasses (performance).

The category with the largest number of participants reporting difficulties in the performance qualifier was *walking (d450)*. Even when using assistive devices, still one out of three people reported problems in contrast to half of the participants who reported problems when not using assistive devices. We found that few participants reported difficulties in the ability to drive a car or bicycle (*driving (d475)*). Interestingly, almost one-third of the participants reported the code was 'not applicable' because they were not driving. There is evidence that many older adults experience driving anxiety[23] and self-limit their driving as they age or develop physical limitations.[24–26] In addition, in the 'activity and participation' component, the chapter that was rated the most important of all chapters by the participants themselves was the 'mobility' chapter (to which both the categories *walking* (*d450*) and *driving (d475*) belong). Mobility is central to 'Healthy Ageing' by allowing older adults to continue to lead independent and dynamic lives.[20] Declines in mobility are associated with lower quality of life,[27 28] falling,[29] loss of independence,[30] institutionalisation[31 32] and, almost inevitably, death.[30] Moreover, Satariano *et al*[33] focussed on walking and driving to examine the public health burden of declines in mobility. They argued that mobility limitations reduce access to goods and services and thus lead to fewer nutritional options. According to them, sedentary behaviour is implicit in the aetiology of a variety of diseases such as cardiovascular disease, diabetes, poor cognitive functioning and depression. Finally, mobility limitations might also lead to social isolation, which is associated with mental and physical health outcomes and worse recovery after disease onset.

The chapter rated the second most important was 'self-care', which, among others, comprises activities of daily living (ADLs), such as washing, eating, toileting and dressing. Ninety-five per cent of participants did not report difficulties in any of these categories. The performance of ADLs is a central aspect of functioning and is necessary for independent living in the community. Impairments in basic ADLs and more complex, instrumental ADLs (IADLs) are associated with the development of functional disability.[34–38] In a systematic review, Gaugler *et al*[39] found that having three or more ADL dependencies was a strong predictor of nursing home admission. In addition, IADL impairment may adversely affect the management of risk factors such as hypertension and diabetes, which are risk factors for heart failure.[40]

The chapters that were rated the third and fourth most important chapters were 'communication' and 'interpersonal interactions and relationships'. They contain aspects that are essential for having social networks. As people age, maintaining relationships is an important part of their well-being, and older people may make this ability more of a priority.[20] Less important were the chapters 'domestic life', 'community, social and civic life', and 'general tasks and demands'. These chapters describe, for example, household tasks, political life, religion and spirituality and carrying out one's daily routine. Finally, the chapters rated the least important were 'major life areas' and 'learning and applying knowledge'. This finding is not very surprising because all of our study participants were retired. 'Major life areas' contained education, work and employment and economic life. 'Learning and applying knowledge' contained purposeful sensory experiences, basic learning and applying knowledge.

Environmental factors

Surprisingly, in the 'environmental factors' component, all categories were experienced as facilitators. On the one hand, all our study participants were living independently, not experiencing too many barriers, and not feeling limited in their daily lives. Additionally, our recruitment strategy might have contributed to this finding because we included participants who were able to contact us if they were interested in the study. On the other hand, this finding can also be interpreted in the light of the privileged population, from which our sample hailed, living in areas in Germany with good provisions such as good health services and grocery stores. When viewed from the clinical perspective, this finding is especially interesting in comparison with the results from the research perspective captured by the systematic literature review, which is also part of the development process of an ICF Core Set for primary care. In our review,[10] we found that environmental factors were poorly addressed in assessment instruments covering the research perspective. In fact, this study suggests that the research perspective and the clinical perspective differ from each other with older adults experiencing many facilitators, whereas researchers have hardly any assessment instruments for measuring them.

Strengths and limitations

From a clinical perspective, we used the ICF to comprehensively assess the functioning of geriatric patients. A strength of the present study is that we followed the standardised methodology proposed by the ICF Research Branch.[9] For this reason, we assessed the functioning of geriatric patients by using the extended ICF Checklist, which comprises the relevant variables of functioning as defined by the ICF. All of these variables were systematically assessed for each patient. The result is a compilation of empirical data that capture the impairments and participation restrictions of geriatric patients. All patients were primary care patients, and all interviews were conducted by the same health professional, which allowed us to avoid the need to assess inter-rater reliability. To our knowledge, this is the first empirical study in the development of an ICF Core Set to assess both capacity and performance for 'activities and participation'. We are not aware of other empirical studies in the development of an ICF Core Set that have used both two qualifiers. Moreover, we asked community-dwelling older adults to prioritise the chapters of the 'activities and participation' component.

There are limitations in the extent to which our results are representative. We did not aim to employ a representative study sample. We wanted to identify valuable information about patients' impairments and their difficulties in using the ICF. Therefore, we are not claiming that our sample is complete or that our results are generalisable. Still, in comparison with the normative data on older women and

men, our sample did not vary widely. Compared with the normative data on octogenarians, there was a slight surplus of women in our study (10% more),[41] and the most prevalent diseases reported by our study participants were comparable to a representative health survey.[42] However, the study sample consisted of community-living older adults who were not very limited in their independence and who were able to contact the researchers if they wanted to participate. Additionally, all of the study participants were in regular contact with their GP. The life expectancy in Germany is 81 years, which is slightly above the European Union average.[43] With an average age of 80 years, our sample was relatively old. For these reasons, we want to be careful not to generalise our results to other countries or to older adults who engage in lifestyles that leave them fairly withdrawn from many activities. The final Core Set we are developing will be best applied to older community-dwelling people who are in regular contact with their GP and are still active and living in Germany.

Study participants self-reported their abilities. Their impairments or limitations were not confirmed objectively. However, the final rating of each category was made by the health professional. It was based on not only the study participants' reports but also the observations made by the health professional during the interview. Some of the categories could be assessed directly by the health professional (eg, communication skills during the interview or cognition during the screening for eligibility with MoCA and MMSE).

Another important limitation concerns the extended ICF Checklist V.2.1a. The standardised process proposed by the ICF Research Branch recommends that this checklist be used in empirical studies.[9] However, this assessment instrument has not been validated, and there is no account of how it was originally developed. There is also no operationalisation for its categories. The questionable reliability of the qualifiers has been addressed before.[44 45] For this reason, our health professional was trained in a rehabilitation centre that had broad experience in the practical use of the ICF. Before the study began, there were also pretests on the feasibility and practicability of the extended ICF Checklist. In order to further improve the reliability, all interviews were assessed by the same health professional. Therefore, we avoided the problem of unclear inter-rater reliability.

Implications for practice

This empirical study is one of four independent preparatory studies[9] that were conducted to develop an ICF Core Set for community-dwelling elderly adults in primary care.[12] The next step will be to put together the results of this empirical study and the other three preparatory studies (systematic literature review,[10] qualitative study[11] and expert survey). The final Core Set will provide GPs with a short list of the most important aspects of the functioning of community-dwelling elderly adults aged 75 and above. In this way, GPs can get a simple but fairly accurate individual picture of which of their patients' disabilities have led to restrictions in participation. The focus shifts from simply making a medical diagnosis to considering the effects of patients' symptoms on their everyday lives (eg, whether household chores can still be done or whether patients are as mobile as they need to be). Finally, elderly patients appreciate this shift in focus to the psychosocial aspects and health problems that impact their daily lives.[46]

CONCLUSIONS

This study used the ICF Checklist V.2.1a to identify the most frequent impairments in specific body functions, structures and activity limitations that older adults have from a clinical perspective. As one of four perspectives, this empirical selection of important ICF codes will contribute to the development of an ICF Core Set for community-dwelling elderly adults aged 75 and older in primary care.

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