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A Biopsychosocial Evaluation Method and the International Classification of Functioning, Disability, and Health (ICF)

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This study evaluated the significant contents and concepts of the Biopsychosocial Assessment Method (MAB) as they relate to the International Classification of Functioning, Disability, and Health (ICF) and the connection between the Geriatric Core Set (GCS) and the different issues of the MAB. We linked the 56 items of the MAB to ICF and GCS categories according to published rules. The most significant concepts included in the MAB enabled the connection of 83 items to the ICF's categories. It was possible to establish a connection with all the components of the ICF except the Body Structures component. Of the 123 categories in the GCS, about 30% did not establish connections with MAB items. The results of this study show that—much like the ICF—the MAB is a tool based on the biopsychosocial model, allowing for a comprehensive and integrated assessment of the different components of functioning. Now, the MAB is the most utilized tool for the evaluation of the geriatric population in Portugal. Thus, it is of the utmost importance that we analyze its results in order to enhance its capabilities. It can then contribute to the creation of a shortened Core Set by the World Health Organization (WHO).

The approach to elderly functioning requires a multidisciplinary team that performs a multidimensional assessment of biological, psychosocial, and environmental aspects, permitting the strategic planning of appropriate interventions with objective and positive results (Wells, Seabrook, & Stolee, 2003; Thonnard & Penta, 2007). This process allows for the control of risks that persist in geriatric units and which are based on the basal/basic evaluation of functional, cognitive, affective, and social status (Zelada, Salinas, & Baztán, 2009).

However, the continuous systematization of the Elderly Functioning Assessment Process still hasn't gathered the proper attention from the medical and social communities; hence, it is not regularly included in the patients' clinical histories (Botelho, 2005).

Nevertheless, an increased interest in clinical geriatric research can be observed (Keime-Guibert, Abellan, & Nourhashemi, 2007; Abellan, Sinclair, & Andrieu, 2008), with the structuring and integration of uniformed approaches and the participation of the elderly (Vriendt, Lambert, & Mets, 2009).

According to this process, the appropriate choice of assessment instruments and outcome measures should be an initial reflection in any research project. However, what is commonly

observed is a concern with how the psychometric characteristics of the assessment instruments compare; this is because these do not relate equally to the validity of their contents (Rat, Guilleman & Pouchot, 2008; Tschiesner, Rogers & Harréus, 2008).

In that sense the information must be available with the multidimensional assessment instruments, with a common language providing an improvement in clinical practice.

In 2001, the World Health Organization (WHO) developed the International Classification of Functioning, Disability and Health (ICF), a tool that includes a comprehensive description of the wide spectrum of human functioning (WHO, 2001). The conceptual ICF system is based on a holistic biopsychosocial view of health and health-related conditions.

Since its development, the ICF has been applied in numerous intervention areas, but the clinical field is where the most research programs have been developed, furthered by the creation of Core Sets. Core Sets are short lists of the most important components of functioning to be evaluated in certain clinical conditions or specific contexts. One of these is the Geriatric Core Set, developed in 2005, presenting itself as a wide range interdisciplinary clinical classification tool that is particularly interesting for early postacute conditions (Grill, Hermes, & Swoboda, 2005).

The standardized and systematized ICF and its Core Sets allow for a comparison of its functioning indicators. Yet, it still lacks smaller groupings, particularly of the psychometric characteristics, for the tool to have the comparative and conclusive potential necessary for assessment tools and outcome measures.

One of the multidimensional elderly functioning assessment tools that include the concepts of the ICF is the Método de Avaliação Biopsicossocial (MAB), or Biopsychosocial Assessment Method, developed by Botelho (Botelho, 2000).

Assuming the feasibility and benefit to both healthcare practice and clinical research in associating the characteristics of these two tools, the following are the purposes of this study: (a) evaluating the significant contents and concepts of the MAB as they relate to the ICF, and (b) the connection between the Geriatric Core Set and the different issues of the MAB.

METHODOLOGY

Tools

The Biopsychosocial Assessment Method (MAB)

The MAB is a “structured and standardized method, a screening type evaluation and biopsychosocial classification tool for adults” (Botelho, 2005, p. 111). It permits the characterization of biopsychosocial and functioning states, as well as describing and detecting functioning disorders. The MAB spans three assessment areas, with 12 specific domains (falls, locomotion, physical and instrumental autonomy, cognitive, and social status, among others), and it combines 19 variables. Some of these variables are further subdivided into specific categories or items, which add up to 56 questions.

The creation of this tool utilized several underlying assessment scales such as the Katz and the Lawton and Brody scales (concerning daily living activities); the Grimby scale (concerning physical activity); the Hamilton scale (for depressive conditions), or the Folstein test for

(cognitive assessment; Botelho, 2000). Therefore, this tool presents structural and content characteristics that are well adjusted to the matter at hand, for these listed scales are still the most utilized in this context (Scheuringer, Grill, & Boldt, 2005). The scoring is done on a scale that can have up to four degrees, depending on the characteristics of the variables, which combine to score different domains, profiling the studied individual. In a study developed by the author, with the participation of 152 elderly outpatients of the Portuguese healthcare system, the reproducibility of the variables was confirmed, enabling its use in longitudinal studies (Botelho, 2000).

Up until now, MAB has been used as a research and assessment tool for several studies, doctorate and masters' theses. It was used in different settings and contexts, the final objective of which was a multidimensional assessment of elderly people. MAB has also been used to characterize Elderly Multidimensional Functioning Autonomy in the largest cross-section observational study ever conducted in Portugal to date. It involved 2,672 elderly subjects, and was called the EPPEP—Estudo do Perfil de Envelhecimento da População Portuguesa, a study on the Ageing Profile of the Portuguese Population (Mota-Pinto et al., 2011). Since the creation in 2006 of the National Net of Continued Integrated Care (Rede Nacional de Cuidados Continuados Integrados—RNCCI), a nationwide network that provides continuous health care, the MAB has been used to characterize the biopsychosocial aspects of the functioning of the in-patients of the Portuguese healthcare system. The MAB is computerized and should be applied several times during the period of in-patient admission. This national healthcare network has, at this time, over 40,000 patients.

International Classification on Functioning, Disability, and Health (ICF)

Structurally, the ICF is organized into two sections, with two components each. The first section deals with functioning and disability and includes body functions (b), and structures (s) and activities and participation (d). The second section regards contextual factors and is also divided into two components: environmental factors (e) and personal factors (these are not yet classified in the ICF; see Figure 1).

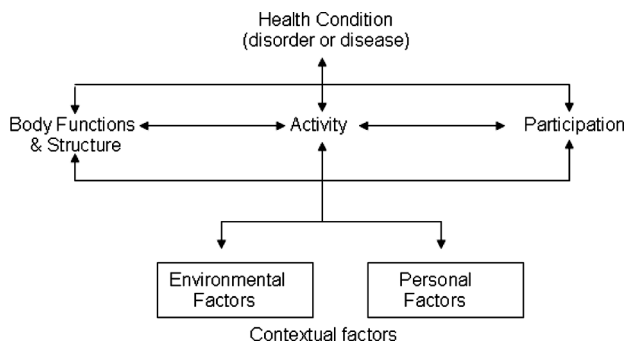


FIGURE 1 Conceptual Model of ICF (World Health Organization, 2001).

The ICF uses an alphanumeric coding system, hierarchically organized with a maximum of four levels or chapters, each representing a specific level of detail. The letters (b), (s), (d) and (e) designate the type of component. The health and health-related status of any given individual is recorded by selecting the appropriate category code (three to five digits) and by adding an additional numeric qualifier (given after a dot, which is the so-called separator) that expresses the extent of problem for that specific aspect—or, in case of environmental factors, the extent to which an environmental factor is a facilitator or a barrier.

This format of classification allows for a hierarchic structure, where the lower level categories include the higher levels; that is, the higher the category, the more detailed or specific the attribute will be. For an example of this format, see Table 1.

Geriatric Core Sets

Core Sets represent the ICF's main categories for certain health conditions or contexts. They are developed from a consensual process that includes evidence from preliminary studies done by different professional groups (Grill, Quittan, & Hubert, 2005); systematic reviews (Scheuringer et al., 2005); and empiric use on patients (Grill, Stucki, & Boldt, 2005). A multicenter international project coordinated by the University of Munich, now in the process of data collection, aims to validate the different Core Sets.

The Core Set for Geriatric Patients includes 123 second-level categories for different components of the ICF (Grill et al., 2005). In the Body Functions component, the Mental Functions chapter is the most represented in the amount of categories; in the Body Structures component, the most represented chapter is Structures Related to Movement; in the Activities and Participation component, this happens in the Mobility chapter; and in the Environmental Factors component, the most represented is the Attitudes chapter. These options are consistent with what is referred to in literature as the most important and the most frequently observed variations in the geriatric population.

Linking Process Between the MAB and the ICF

The comparison between the concepts included in the MAB items and the components of the ICF was performed blindly by two physical therapists (PT). These people were teachers of a physical therapy course with curriculum and professional experience in different intervention areas (neurological and cardiorespiratory conditions). This procedure followed Cieza's 10

TABLE 1
Format of Classification Showing Hierarchic Structure

<i>b5</i>	<i>Functions of the digestive, metabolic and endocrine systems</i>	<i>Chapter or level 1</i>
b510	Ingestion functions	Level 2
b5105	Swallowing	Level 3
b51051	Pharyngeal swallowing	Level 4

connection rules (Cieza, Geyh, & Chatterji, 2005). The inconsistencies were dealt with by a third investigator, who was also a PT with vast experience in ICF taxonomy.

The most important rules make sure that the following will occur:

Each concept included in the instrument's items must be linked to the most precise ICF category. In cases of nonexplicit information, such information should be additionally documented in full. If an item encompasses different constructs of the instrument, information from each should be linked to the ICF.

In addition, it should be emphasized that 3 of the 10 rules deserved special attention:

Items with insufficient concepts to decide which component of the ICF best represents them are marked *nd* (not definable); in certain situations, if the item refers to a health condition, it should be marked *nd-gh*, *nd-ph*, *nd-mh*, or *nd-qol*, stating whether it concerns general health issues (*gh*), physical health (*ph*), mental health (*mh*), or quality of life (*qol*), respectively.

Items that clearly refer to personal factors and have not yet been coded into the ICF must be marked *pf*.

Concepts not covered by the ICF must be marked *nc* (not covered); concepts that refer to diagnostics or health conditions should be marked *hc*.

RESULTS

MAB/ICF Linking

The most significant concepts included in the MAB's 56 questions enabled the connection of 83 items to the ICF's categories. It was possible to establish a connection with all the components of the ICF except the Body Structures component.

The open question, Complaints about Other Organs/Systems, was the only one connected to first-level categories. All other items of the MAB were linked to second- and third-level categories; namely, 27 connections on Function categories, 37 connections on Activities and Participation categories, and 11 connections on the Environmental Factors component. However, third-level connections were only possible on the Body Functions and the Activities and Participation components, most of which related to the latter.

The Body Functions component that allowed the greatest number of different connections ($n = 11$) was *b7*: Neuromusculoskeletal and Movement Related Functions. The second-level category that allowed the most connections was *b280*: Sensation of Pain. For third-level categories, a connection was established for 4 of them: 2 were linked to Continence Functions and the others to Orientation Functions. Still regarding third-level categories of the Body Functions component, the most connected were the Time Orientation and the Spatial Orientation, with 5 connections each.

MAB items achieved linkage with six out of nine domains of Activities and Participation. The domains where no connections were made were Learning and Applying Knowledge, General Tasks and Demands, and Interpersonal Interactions and Relationships. This component was linked 37 times, 31 of which were third-level connections. The domains that were linked the most were *d4*, Mobility ($n = 12$), and *d5*, Self-care ($n = 11$).

In the Environmental Factors component, linkage was only accomplished in two domains: Products and Technology and Support and Relationships. The first domain established just

one connection, e115: Products and Technology for Personal Use in Daily Living. The second domain was connected to almost every second-level category ($n = 10$) of that domain.

There were four items of the MAB that were impossible to connect. All of these referred to Falls.

Six MAB items were deemed Personal Factors: Marital Status, Number of Cohabitants, Time Alone in a period of 24 hours, Educational Level, Occupation, and Daily Number of Meals.

Table 2 summarizes the number of MAB items linked to the different components of the ICF.

GCS/MAB Linking

Of the 123 categories in the GCS, about 41% did not establish connections with MAB items, as shown in Table 3. This percentage decreases to 30% if the categories relating to Body Structures are not considered. The different categories of the Core Set not connected to the MAB were Body Functions ($n = 6$), Activities/Participation ($n = 12$), and Environmental Factors ($n = 19$).

Taking into account the different chapters of the three components included in this linkage process, we observed that the domains in which linkage was weaker or absent were in Body Functions, chapter b1; Mental Functions, chapter d3; Communication, in the Activities/Participation component; and chapter e4, Attitudes, comprised in Environmental Factors.

The GCS category that achieved the largest number of connections to the MAB was b114, Orientation Functions ($n = 10$).

The 72 categories of the GCS linked to the MAB were within 46 of the MAB's questions, which apparently means that 10 of the questions were not linked to the Core Set. However, we can say that these 10 unconnected items are included in the 6 questions considered Personal Factors and also in the 4 questions considered as not covered. Thus, we can state that all possible MAB items were linked to the GCS.

The most linked MAB items were the ones related to question 5, Complaints about other Organs/Systems ($n = 24$); to question 1, Musculoskeletal Complaints ($n = 10$); and to question 50, Having Someone to Talk to/to Confide in ($n = 7$). All in all, these three questions amounted to 57% of GCS categories linked to MAB items.

DISCUSSION

This study revealed that the most significant concepts included in the MAB questions have a good relation to the ICF, and that most of the MAB items directly connect to the different ICF components: Body Functions, Activities/Participation, and Environmental Factors.

This conceptual connection between the MAB and the ICF has two main reasons: (a) MAB uses information collected from various instruments that already have a validated connection to the ICF (Cieza et al., 2002; Scheuringer et al., 2005); and (b) the use of a clear and objective language, an attribute the ICF also boasts through its universal and unifying language.

The only ICF component that had no connection to the MAB was Body Structures, mostly because the MAB isn't supposed to be an information tool for a specific health condition; instead, it is an identifying and individualized tool for the evaluation of different functioning aspects. The diagnosis of disabilities or structural alterations calls for specific complementary exams that are out of the MAB conceptual and structural range.

TABLE 2
Linking Between the MAB and ICF Categories

<i>Item MAB</i>	<i>Meaningful concept</i>	<i>ICF Code/ ICF category</i>	<i>Additional information</i>
Q1 Musculoskeletal complaints	Neuromusculoskeletal and movement related functions	b710 b715 b730 b735 b740 b750 b755 b760 b765 b770 b780 b280	Any sensation of pain, should be linked exclusively to b280—sensation of pain
Q2 Vision complaints	Seeing and related functions	b210 b215 b220 b280	Idem
Q3 Hearing complaints	Hearing functions	b230 b240 b280	Idem
Q4 Skin complaints	Functions of the skin	b810 b820 b830 b840 b280	Idem
Q5 Complaints of other organs/ systems		b1 b2 b3 b4 b5 b6 b7 b8	Except those which have been linked previously
Q6 BMI	Weight maintenance	b530	
Q7 Waist measure	Weight maintenance	b530	
Q8 Number of falls	Falls	NC	In accordance with Rule 7 (17)
Q9 Moment of falls	Falls	NC	Idem
Q10 Reason of falls	Falls	NC	Idem
Q11 Sequelae of falls	Falls	NC	Idem
Q12 Moving around within the home, within buildings	Moving around within the home, within buildings	d4600 d4601	
Q13 Moving around outside	Moving around outside	d4602	
Q14 Climbing in steps	Climbing steps	d4551	
Q15 Locomotion and means for vision and hearing	Products for personal use in daily living	e115	

(Continued)

TABLE 2
Continued

<i>Item MAB</i>	<i>Meaningful concept</i>	<i>ICF Code/ ICF category</i>	<i>Additional information</i>
Q16 Wash/bathe	Washing and drying	d5100 d5101 d5102	Including body parts and the whole body
Q17 Dressing/taking off	Dressing/taking off	d5400 d5401 d5402 d5403 d5404	Includes clothing and footwear, as well as proper choice
Q18 Using the toilet or bedpan/urinal	Regulating urination/defecation	d5300 d5301	It includes urination and defecation
Q19 Lying in bed/getting out of bed	Lying down/transferring oneself	d4100 d4201	Includes self-transfer from lying down position
Q20 Rising from chairs	Idem	d4103 d4200	Idem
Q21 Bladder control	Urinary continence	b6202	
Q22 Faecal control	Faecal continence	b5253	
Q23 Feeding oneself/Eating	Eating	d550	
Q24 Physical autonomy and means for vision and hearing	Products for personal use in daily living	e115	
Q25 Using the phone	Call	d3600	
Q26 Shopping	Buy	d6200	
Q27 Preparing meals	Cooking	d630	Includes simple and complex meals
Q28 Housekeeping tasks	Housekeeping	d6401 d6402 d6403 d6404 d6405	Doing household tasks, with or without appliances
Q29 Wash/doing the laundry	Washing clothes	d6400 d6403	Includes use of appliances
Q30 Using transportation	Using transportation	d4701 d4702 d4751 d5702	Includes driving a car
Q31 Taking pills/prescribed medication	Looking after one's health	d5702	
Q32 Managing money	Economic life	d860 d865 d870	
Q33 Instrumental autonomy and means for vision and hearing	Products for personal use in daily living	e115	
Q34 Sad/depressed	Emotional functions	b152	
Q35 Nervous/anxious	Emotional functions	b152	

(Continued)

TABLE 2
Continued

<i>Item MAB</i>	<i>Meaningful concept</i>	<i>ICF Code/ ICF category</i>	<i>Additional information</i>
Q36 Other emotional complaints	Emotional functions	b152	
Q37 Time orientation— year	Functions of time orientation	b1140	
Q38 Time orientation— month	Idem	b1140	
Q39 Time orientation— day of the month	Idem	b1140	
Q40 Time orientation— season	Idem	b1140	
Q41 Time orientation— day of the week	Idem	b1140	
Q42 Spatial orientation— country	Functions of spatial	b1141	
Q43 Spatial orientation— district	Idem	b1141	
Q44 Spatial orientation— city	Idem	b1141	
Q45 Spatial orientation— building	Idem	b1141	
Q46 Spatial orientation— floor	Idem	b1141	
Q47 Marital status	Marital status	PF	In accordance with Rule 6 (17)
Q48 Number of cohabitants in your home	Who lives	PF	Idem
Q49 Time alone in a period of 24 hours	Being alone	PF	Idem
Q50 Having someone to talk to/to confide in	Support and relationships	e310 e315 e320 e325 e330 e335 e340 e345 e355 e360	People who give emotional support
Q51 Schooling	Schooling	PF	In accordance with Rule 6 (17)
Q52 Job	Job	PF	In accordance with Rule 6 (17)
Q53 Walking on the street	Exercise	d920	Recreation and leisure
Q54 Gymnastic or sport	Sport	d9201	
Q55 Other physical activity	Exercise	d920	
Q56 Meals	N ^o Meal	PF	In accordance with Rule 6 (17)

Note. NC—Not covered; PF—Personal factor.

TABLE 3
Linking Between the GCS Categories and the MAB

<i>Geriatric core set categories</i>	<i>MAB</i>
Body functions	
b110 Consciousness functions	Without linkage
b114 Orientation functions	P37–P46
b117 Intellectual functions	Without linkage
b130 Energy and drive functions	Q5
b134 Sleep functions	Q5
b140 Attention functions	Q5
b144 Memory functions	Q5
b147 Psychomotor functions	Without linkage
b152 Emotional functions	Q34–Q36
b156 Perceptual functions	Without linkage
b167 Mental functions of language	Q5
b176 Mental function of sequencing complex movements	Without linkage
b180 Experience of self and time functions	Without linkage
b210 Seeing functions	Q2
b215 Function of structures adjoining the eye	Q2
b230 Hearing functions	Q3
b240 Sensations associated with hearing and vestibular function	Q3
b260 Proprioceptive function	Q5
b265 Touch function	Q5
b270 Sensory functions related to temperature and other stimuli	Q5
b280 Sensation of pain	Q1–Q5
b320 Articulation functions	Q5
b410 Heart functions	Q5
b415 Blood vessel functions	Q5
b420 Blood pressure functions	Q5
b430 Haematological system functions	Q5
b435 Immunological system functions	Q5
b440 Respiration functions	Q5
b450 Additional respiratory functions	Q5
b455 Exercise tolerance functions	Q5
b460 Sensations associated with cardiovascular and respiratory functions	Q5
b510 Ingestion functions	Q5
b525 Defecation functions	Q22
b530 Weight maintenance functions	Q6
b535 Sensations associated with the digestive system	Q5
b540 General metabolic functions	Q5
b545 Water, mineral and electrolyte balance functions	Q5
b620 Urination functions	Q21
b630 Sensations associated with urinary functions	Q5
b710 Mobility of joint functions	Q1
b715 Stability of joint functions	Q1
b730 Muscle power functions	Q1
b735 Muscle tone functions	Q1
b755 Involuntary movement reaction functions	Q1
b760 Control of voluntary movement functions	Q1
b765 Involuntary movement functions	Q1
b770 Gait pattern functions	Q1

(Continued)

TABLE 3
Continued

<i>Geriatric core set categories</i>	<i>MAB</i>
b780 Sensations related to muscles and movement functions	Q1
b810 Protective functions of the skin	Q4
b820 Repair functions of the skin	Q4
b840 Sensation related to the skin	Q4
Structures	Without linkage
Activities and participation	
d130 Copying	Without linkage
d155 Acquiring skills	Q27, Q54–55
d177 Making decisions	Q26, Q32
d230 Carrying out daily routine	Q27–Q29
d240 Handling stress and other psychological demands	Q30
d310 Communicating with – receiving – spoken messages	Without linkage
d315 Communicating with – receiving – non-verbal messages	Without linkage
d330 Speaking	Without linkage
d335 Producing nonverbal messages	Without linkage
d360 Using communication devices and techniques	Q25
d410 Changing basic body position	Q19–20
d415 Maintaining a body position	Without linkage
d420 Transferring oneself	Q19–20
d440 Fine hand use (picking up, grasping)	Q26–27
d445 Hand and arm use	Q27–31
d450 Walking	Q12–13, Q53
d460 Moving around in different locations	Q12–13
d465 Moving around using equipment	Q12–14
d510 Washing oneself	Q16
d520 Caring for body parts	Without linkage
d530 Toileting	Q18
d540 Dressing	Q17
d550 Eating	Q23
d560 Drinking	Without linkage
d570 Looking after one's health	Q31
d760 Family relationships	Without linkage
d770 Intimate relationships	Without linkage
d860 Basic economic transactions	Q26, Q32
d930 Religion and spirituality	Without linkage
d940 Human rights	Without linkage
Environmental factors	
e110 Products or substances for personal consumption	Without linkage
e115 Products and technology for personal use in daily living	Q15, Q24, Q33
e120 Products and technology for personal indoor and outdoor mobility and transportation	Q15, Q24, Q33
e125 Products and technology for communication	Without linkage
e140 Products and technology for culture, recreation and sport	Without linkage
e145 Products and technology for the practice of religion or spirituality	Without linkage
e150 Design, construction and building products and technology of buildings for public use	Without linkage
e240 Light	Without linkage
e245 Time-related changes	Without linkage
e250 Sound	Without linkage
e310 Immediate family	Q50

(Continued)

TABLE 3
Continued

<i>Geriatric core set categories</i>	<i>MAB</i>
e315 Extended family	Q50
e320 Friends	Q50
e325 Acquaintances, peers, colleagues, neighbors, and community members	Q50
e330 People in position of authority	Q50
e355 Health professionals	Q50
e360 Health related professionals	Q50
e410 Individual attitudes of immediate family members	Without linkage
e415 Individual attitudes of extended family members	Without linkage
e420 Individual attitudes of friends	Without linkage
e425 Individual attitudes of acquaintances, peers, colleagues, neighbors, and community members	Without linkage
e430 Individual attitudes of people in positions of authority	Without linkage
e450 Individual attitudes of health professionals	Without linkage
e455 Individual attitudes of other professionals	Without linkage
e460 Societal attitudes	Without linkage
e465 Social norms, practices and ideologies	Without linkage
e570 Social security, services, systems, and policies	Without linkage
e580 Health services, systems, and policies	Without linkage

A high level of specificity was attained in the linkage process of the ICF categories (second- and third-level). There was a single first-level connection made, mostly because the item referred to an open question, where a more concrete and significant conceptual meaning was impossible to find.

Most of the ICF/MAB linkage occurred within the Activities/Participation component, a finding in accordance with the instrumental group behind the MAB, a situation also found in similar studies (Vriendt et al., 2009; Berg et al., 2009) and also because this component is the closest to functioning profiling.

MAB items were linked to all ICF Body Functions domains. This is based on the MAB being, in fact, a questionnaire in which the individual has the possibility to express his or her own complaints concerning all systems and organs. The Activities/Participation domains where the most connections were made were Mobility and Self-Care, as is also found in Bergs study (Berg et al., 2009). These specific domains are recognized as emergent in the detection of disability, for they sum up the most basic aspects of independence in daily life activities.

There were only four MAB questions that did not establish a link with the ICF, all concerning falls. This concept cannot be attributed to a single situation, and its occurrence is usually caused by changes in varied functions (balance, eyesight, or hearing) or even by the existence of multiple environmental factors, which cause obstacles to the linkage process. It should, however, be flagged as a major cause of morbidity and mortality for the elderly population.

A 70% linkage ratio was obtained in the GCS/MAB linking process, the exception being the Body Structures component, as previously explained.

When analyzing the lack of connection one component at a time, it is found that the six Functions categories that were not possible to link were all Mental Functions. Reviewing the category definitions, and because the MAB is a questionnaire/interview process, we find two reasons for the lack of connection. On one hand, these are very specific categories, hindering

their placement in a tool such as MAB; on the other hand, these are functions that, if altered, will thwart the individual's awareness of his or her situation.

However, this is also the component and domain where the most connections were made in the Orientation Functions ($n = 10$). The GCS lists Spatial and Temporal Disorientation in a single category, offering no distinction between the two, which can be detrimental for this specific population.

In the Activities/Participation component, 12 categories were not linked to MAB, the majority belonging to the Communication domain. This weakness should be dealt with later on for, despite its detection being possible through the Functions sphere (Complaints about other Organs/Systems), it will be hard to detect regarding the individuals' Functioning performance in this domain.

Other categories that belong to the Activities/Participation component and did not achieve linkage should be easily resolved. Albeit these are very specific concepts, and they already exist within the MAB but in a generic form such as Caring to body parts or Drinking.

Nevertheless, there are two categories that are not at present included in MAB, and they are considered throughout the literature as determinant for the personal Functioning profile: Religion and Spirituality and Human Rights.

There are studies that account for the integration of spirituality and religion in the evaluation process and in therapeutic intervention, enabling positive results, namely in hospitalization length and frequency (Phillips, 2003; Blazer, 2006; Revheim & Greenberg, 2007).

The Human Rights issue is, in much the same way, one of the most important issues for WHO in regard to the ethical considerations about the use of the ICF and the ethical aspects concerning Functioning and Disability Assessment (Bickenbach, 2010).

Overall, the Environmental Factors were the least linked in the GCS/MAB linkage process, with only two connected domains (Products and Technology and Support and Relationships); thus, only one third of all categories were linked. The same results were also established by Berg et al. (2009) in the linkage process developed between the InterRAI HC and the ICF. This ineffectiveness stems from the fact that MAB was created within the ICIDH-2 model, when the emphasis on the environmental factors had not the same importance and prominence later acquired with the 2001 ICF.

CONCLUSIONS

The results of this study show that much like the ICF, the MAB is a tool based on the biopsychosocial model, allowing for a comprehensive and integrated assessment of the different components of Functioning.

Now, the MAB is the most utilized tool for the evaluation of the geriatric population in Portugal. So it is of the utmost importance that we analyze its results in order to enhance its capabilities. Such analysis can contribute to the creation of a shortened Core Set by the WHO. Thus, it is important that future research efforts are developed, bringing together the research requirements and the needs of clinical practice.

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