**Resumo**


**Palavras-chave**

idoso, ortopedia, estudos de avaliação, reabilitação

**Abstract**

Introduction: Illnesses from muscles and skeleton, constitute the cause of functional damage of elderly. Nevertheless they are not inevitable consequences of age and they should be approached as specific illnesses rather than being regarded as result of aging. All aspects of health must be accounted for the measurement of the elderly health (Full Geriatric Assessment). Objective: To review the scientific publication dealing with the functional condition of elderly after subjected to orthopedic surgery. Material and Method: Bibliographic research on articles as per listing in the following databases www.bireme.br, www.ncbi.nlm.nih.gov/pubmed, www.scopus.com and www.embase.com covering a period from 1996 to 2006. It has been adopted the terminology as per Science of Health (DeCs/Birene) and at Medical Subject Headings (MeSH/PubMed) that identified the key-words: elderly, daily activity, orthopedic surgery or orthopedic procedures, post-surgery and rehabilitation. The search was carried out on April 2006 and the inclusion criterion was that the test subjects should be older than 60 and subjected to any orthopedic surgery procedure. The references meeting this criterion were listed and analyzed in EpilInfo version 3.3.2. The variables were: title, year and country of publication, professional categories of the authors, country of origin of the study, objective of the research, number of assessment tools, types of assessment tools, site of the surgery, full report available on line. Results: 44 abstracts have been selected among of which 29 were available as full reports. The Journal of the American Geriatric Society was the one that has published the largest number of articles dealing with this issue and the US was the country that has issued the greatest number of publication. 75% of the articles fitted within medical category, 79.3% of the studies...
are descriptive, 69% of the surgeries were on the hips and 27.6% of the searches employed only one assessment tool. Among the dimensions that have been evaluated 43.6% dealt with functional status while 30.8% were about mental status. Final Notes: The functional dimension was the most investigated while the social dimension was not contemplated. Although the number of publication is increasing in the last years, it’s necessary that health service starts to incorporate the new paradigm of functional evaluation of the elderly health.

KEYWORDS
aged, orthopedics, evaluation studies, rehabilitation

INTRODUCTION

The skeletal system of the elderly individual undergoes alterations caused by the individual’s lifestyle, the work process during life, the postural attitude, the nutritional aspects and metabolism, among other factors. Additionally, the loss of calcium starts at 30 years of age in women and at 60 years in men. Similarly, the individual’s strength, coordination and resistance decrease with age.

The growth of new bone in the elderly is generally slower and bone resorption is increased. This process causes bone weakening and, consequently, the musculoskeletal diseases constitute a cause of functional impairment to the elderly. These incapacitating and chronic diseases are rarely fatal; however, they are incurable. Nevertheless, the musculoskeletal disease is not an inevitable consequence of aging, and must be seen as a specific process of the disease and not as a result of the aging process, although the latter also contributes to the incidence of fractures, especially in the hip.

The assessment of the elderly health status cannot be carried out solely in biomedical terms. All of the health dimensions have to be assessed, and as a result, this evaluation is called “Comprehensive Geriatric Assessment” (CGA), which consists of objective measures used to assess different performances. The term “Comprehensive Geriatric Assessment” started to be used in the United Kingdom at the end of the 30’s, in the last century, by the British physician Dr. Marjory Warren, who began to systematically evaluate chronic patients, those who were immobilized and those without rehabilitation. The objective of her evaluation aimed at planning rehabilitation, using a multidimensional and interdisciplinary approach. The CGA is a set of techniques, procedures and operational environments, where the comprehensive and structured assessment is associated to non-standardized classical methods of health evaluation in the different medical specialties. The most frequently studied dimensions refer to the functional status, mental health and social functioning. The functional status is the base dimension for the functional evaluation of the elderly health.

OBJECTIVES

General
To carry out an integrative review of literature directed by the guiding question: “How is the elderly patient that undergoes orthopedic surgery evaluated regarding functionality?”

Specific
• To identify the functional evaluation instruments used.

MATERIAL AND METHODS

For Ganong and Beya & Nicoll the integrative review is a strategy to identify and analyze the existing evidence in healthcare practice, when the body of scientific knowledge is not sufficiently established.

The methodology adopted by Ganong involves six steps that were used in this study, i.e.: select the studies that will constitute the sample; represent the characteristics of the reviewed study; analyze the findings according to the established inclusion criteria; interpret the results; present and disclose the results.

prehends several areas in Health Sciences).

The CINAHL – Cumulative Index to Nursing & Allied Health Literature® database was not accessed, as it was not available at the study period.

The health terminology employed in the Health Science Descriptors (DeCS/Bireme) and in the Medical Subject Headings (MeSH/PubMed) was used, which identified the keywords: idoso (aged or older or elderly), atividades cotidianas (activities of daily living), cirurgia ortopédica (orthopedic surgery) or procedimentos ortopédicos (orthopedic procedures), pós-operatório (postoperative) and reabilitação (rehabilitation). The term “avaliação funcional” (functional assessment) is not an official descriptor and, therefore, it was not employed and the use of the official term “avaliação geriátrica” (geriatric assessment) rather restricted the search, and thus, it was not employed either.

The Health Sciences descriptors are part of the structured and trilingual vocabulary created by the Biblioteca Regional de Medicina – Bireme (Regional Library of Medicine) and LILACS– Centro Latino-Americano e do Caribe de Informação em Ciências da Saúde (Latin-American and Caribbean Literature in Health Sciences) – to be used in the indexing of scientific articles in scientific journals, books, annals of Congresses, among other types of material, and also, to be used in subject research and recovery in scientific literature in international databases. The DeCS terminology was developed from MeSH with the objective of allowing the use of a common research terminology in three languages (Portuguese, Spanish and English), creating a consistent and single means of recovering information regardless of the original language of the study.

The search occurred during the month of April 2006, and the inclusion criteria used for the studied group were: subjects’ age = 60 years or older; submitted to any orthopedic surgical procedure; publications in Portuguese, Spanish or English; full texts available online and in the libraries of the Integrated Library System of the University of Sao Paulo – SIBI/USP.

The references found, which constituted the sample, were assessed through a form designed to verify how each publication corresponded to the following items: a) identification data: title, year and country of publication; authors’ professional category; study’s country of origin b) keywords; c) study design: experimental, quasi-experimental, non-experimental, and the different models within the last category: correlational, prospective, retrospective, survey and documental or bibliographical studies; d) stating of the study aims; e) number and type of instruments of functional assessment; f) surgical site (topography).

The studies were organized by year of publication and attached to the corresponding forms. The data analysis required the translation, reading and re-reading of the articles. The latter were then codified and formatted at the EpiInfo Software, version 3.3.2. For the data analysis, simple statistical operations of frequency distribution in percentage were used.

RESULTS

The search conducted in the aforementioned databases located 44 publications that met the established inclusion criteria. Of this total, 29 (66%) full texts were available, with 28 of them being obtained online and one at the library of the Nursing School of the University of Sao Paulo.

Table 1 shows the distribution of the publications according to the electronic databases.

According to Rodgers & Knafl, for a literature review to have credibility it is necessary that the selection of references that comprise the search include at least 30% of the total of articles that meet the established criteria. Therefore, we strove to obtain the largest possible number of indexed articles to be analyzed.

It is worth mentioning the increase in the number of publications from 1999 on. Graph 1 shows the frequency of publications regarding the period of 1996 to April 2006.

Nineteen Journals displaying the full-text version of the scientific studies were identified; however, the Journal of the American Geriatrics Society was by far the one that published the largest number of studies within a 10-year period, with 20.7% of the total number of articles, followed by the Archives of Physical Medicine and Rehabilitation with 10.3% and Arthritis and Rheumatism, Journal of Clinical Epidemiology and Spine, com 6.9% each. Similarly, the country that published the largest number of articles was the United States of America (USA), with 51.7%, followed by England with 27.6% and Canada with 6.9%. The USA also
originated the largest number of researches, 34.5%, followed by England with 17.2%, Sweden with 10.3% and Canada and Israel with 6.9%, each.

When the official health descriptors that are part of Bireme and PubMed were used, we observed that the keywords did not correspond exactly to the descriptors. We tabulated 68 terms, with the descriptor reabilitação (rehabilitation) being mentioned five times and cirurgia ortopédica (orthopedic surgery) or procedimentos ortopédicos (orthopedic procedures), not being mentioned. The term fratura de quadril (hip fracture) was mentioned 9 times (13.2%) and the term delírio ou confusão mental (delirium or confusion) appeared 5 times (7.4%).

In the present study, it can be observed that the professional category that published the largest number of articles was the medical profession, with 75%, followed by nurses with 10.3%, showing the lack of scientific production by other healthcare areas.

Regarding the study design, they were so defined: experimental with 5 studies (17.2%), non-experimental (prospective cohort, retrospective cohort and transversal) with 23 studies (79.3%) and one documental study (3.4%). The prospective cohort study presented the highest incidence, as shown in Graph 2.

Regarding the study aims, 86.2% of them aimed at assessing or describing medical (clinical and surgical), nursing or multiprofessional intervention types, 10.3% of them aimed at validating instruments and 3.4% tested some type of intervention.

Graph 3 presents the frequency of the number of instruments used to evaluate the functional capacity of the elderly submitted to orthopedic surgery. 8 studies (27.6%) used only one instrument and 7 references (24.1%) used two instruments, with a similar result for the studies that used three instruments. Most of the studies (58.5%) assessed the basic activities of daily living (BADL) and the instrumental activities of daily living (IADL).

Among the evaluation instruments, Katz Index and Barthel Index were used in 11 studies, being 27.6% and 6.9% of the total, respectively. Among the scales that evaluated the cognitive state, the Mini-Mental State Examination (MMSE) was the first choice, with 20.7% of the total.

In general, 39 different types of evaluation scales or questionnaires were identified. The functional state was the most often assessed, with 43.6%, followed by the cognitive or mental state, with 30.8%, with the latter giving emphasis to instruments that assessed the presence of pictures of delirium or acute mental confusion. We observed that no study used a specific scale to analyze the social support network. Chart 1, at the end of the text, lists all of the titles of instruments identified in this review.

It is noteworthy the Swedish study developed by an occupational therapist and nurses who established the significance of an individualized, systematic management program in the postoperative period of patients submitted to hip surgery. It is worth mentioning that it was the only study that mentioned the importance of an intervention that is planned together with the patient (including decision-making and home visits), which allowed the identification of how the accident that caused the fracture happened and how to improve the skills for activities of daily living at home.

The Spanish study was also of note, in which it aimed at determining the multidisciplinary geriatric intervention before the hip surgery in order to assess whether there was a decrease in the duration of hospital stay as well as in the postoperative morbidity and mortality rates. The authors concluded that the duration of hospital stay did not present significant changes; however, there was a reduction in the clinical and surgical complications due to the adequate intervention that was associated with the preoperative visit conducted by the medical professionals, physical therapists, nurses and social workers. The authors stress the importance of social support in the postoperative period.

The surgical site with the highest incidence was the hip, with 69.0% of the surgeries, followed by the knee with 13.8%; the remainder included joint surgeries and lower limb amputations.

When the 20 (69%) studies on hip fracture were selected, it was observed that mean age was 76.4 years (SD=4.6, with an age range of 68 to 83 years) and the female sex predominated in 100% of the studies.

**DISCUSSION**

The aging process is normally followed by the decline in the general bodily functions and the motor function, at some degree, impairs the elderly. This process can be described under three aspects: a) a universal and progressive phenomenon that presents a gradual decrease of the individual’s capacity to adapt, is called
primary aging; b) a phenomenon with alterations caused by diseases associated to aging, such as coronary, osteoarticular and pulmonary diseases, among others, is called secondary aging; and the third phenomenon (tertiary or terminal aging) is characterized by the significant physical and cognitive loss within a short period of time. These phenomena are influenced or determined by biological, social, intellectual and functional components, with the functional aging being perceived when the individual starts to depend on others to fulfill his basic needs or daily routine tasks.  

Therefore, the physical dependence (functional) is defined in terms of functional disability, of practical helplessness or individual incapacity to perform activities of daily living (ADL). This is directly associated with the concept of frailty, which in aging, is linked to the age, the presence of diseases and the incapacity to perform ADL.  

Thus, the functional impairment can be determined by several factors, with the most frequent being the social-cultural factors, diseases and age-related alterations, such as the decrease in muscular strength. A significant number of studies allow us to infer that the most relevant diseases and health conditions are: arthritis, stroke, cognitive alterations, hip fractures, knee osteoarthrits, claustrophobia, depression, diabetes, heart diseases, chronic obstructive pulmonary disease and sight problems. The operational concept of functional capacity is related to the measurement of the preservation of the individual’s capacity to perform ADL and the degree of capacity to perform the instrumental activities of daily living (IADL).  

The ADL comprehend the activities related to self-care (showering, feeding, continence, mobility, bathroom use, getting dressed, bed/chair transference and vice-versa, personal hygiene), whereas the IADL include shopping, cooking, cleaning the house, using the telephone, using transportation, washing clothes, taking medicine, and the capacity to look after one’s finances.  

The increase in the number of publications at the end of 90’s, in the 20th century, might be associated to the fact that from 1970 on, several studies appeared that emphasized the importance of the multidimensional assessment to identify the health needs of the elderly and plan health actions. These studies stressed the diversity of instruments to evaluate the physical, mental and social dimensions, as it was understood that the elderly was subject to several diagnoses; that the elderly physical and mental health and social well-being were interconnected dimensions that needed a multidimensional evaluation and that the socioeconomic situation plays a key role in health determination.  

It is worth mentioning the study by Fillenbaum from the World Health Organization, in 1984, advising the countries to adopt the multidimensional assessment as a public policy, in order to systematize the elderly functional health information and thus, direct the actions.  

Among the quantitative research types, the designs can be: experimental, quasi-experimental and non-experimental, with the least being divided in prospective and retrospective. The prospective studies explore supposed causes, supposed differences and go forward in time towards the supposed effect. They are mostly like the longitudinal studies; they start in the present and end in the future. However, prospective studies are considered stronger than the retrospective ones, as in the latter, the investigator defines the sample and collects data on the predictor variables after the occurrence of the facts.  

In the experimental research, the researcher is an active agent, going beyond the passive observation. Using manipulation, the researcher controls and consciously varies the independent variable, administering an experimental treatment (or intervention) to some individuals, whereas withholding it from others. In order to be qualified as an experiment, the study design must present three properties: manipulation, control and randomization.  

Hence, the five experimental studies found in this review have the intervention proposal in common, in addition to the aforementioned properties, whether to detect early signs of delirium in the elderly after surgical procedures or to improve the functional capacity in rehabilitation programs.  

It is necessary to consider that the non-experimental studies are used when there is a limited knowledge on a certain phenomenon. Therefore, it is justifiable that most of the studies in this review (82.8%) belong to this category, as functionality in the elderly patient is a relatively new subject. This type of study allows us to form a body of knowledge that will initiate further researches.  

Although the scientific production of the Nursing professionals has increased, especially in the last two decades, there is still a visible gap in the area of rehabilitation, as the studies arise from the necessity of solving problems. And the study results can contribute to improve the exercise of the profession not only in the assisted community, as in the case of the elderly, but also to benefit the professionals themselves, who can review and improve their practice in addition to exercising their function in the investigation.  

This documental study on the functional assessment of elderly individuals submitted to orthopedic surgery showed that the majority of the procedures occurred in the hip, caused by fracture, which corroborates the necessity of an early multiprofessional intervention, focused on the evaluation of the functional capacity and aiming at a quick recovery and decrease in the morbidity and mortality.  

Among the elderly, one of the most frequent traumas occurs when they fall from their own height, when they lose balance by slipping on a smooth surface or by tripping over a rug. The most important fractures for this age range are those that affect the hip, the vertebral column and the wrists, which have their occurrence facilitated by the presence of osteoporosis, with an ensuing indication for surgical treatment, in most of the cases.  

Results on the functional capacity are being progressively more used to evaluate the type of treatment and care the patients receive. For elderly patients, functional results are frequently evaluated by the ADL and IADL measurements and the scales that are most often used in this study were: Katz ADL Index or IADL – Index of Independence in Activities of Daily Living and Barthel Index or The Barthel Self-Care. However, other instruments were also used, such as the Get Up and Go and Timed Up & Go Test (GUG and TUG) and the Functional Independence Measure. The Katz index of ADL evaluates the individual...
regarding six basic activities of daily living, as follows: showering, dressing, personal hygiene, transfers, continence and eating.

The test is scored according to the two proposed versions: the Likert scale or the Guttman scale model. In the Likert model, each activity receives a score that varies from 0 (independent), 1 (needs the help of some object to perform the activity), 2 (need human help) and 3 (complete dependence). In the Guttman model, the measurement of the level of dependence is performed through the use of letters A to G, in a crescent level of dependence. This index was proposed by Katz et al. in 1963.

The Barthel index was developed by Mahoney & Barthel. This test measures the degree of assistance that is necessary in 10 activities: eating, showering, personal hygiene, dressing, bladder control, bowel control, chair/bed and bed/chair transfers, ambulation, and climbing stairs. Specific scores are attributed to each proposed activity, according to the clinical observation that varies from 0 to 5 (with help), to 10 or 15 (independent)\(^1\). The “Get Up and Go” and “Timed Get Up and Go” tests were proposed by Mathias, Nayak & Isaacs in 1986, and consist in evaluating patients when they stand up from a sitting position, ambulate for 3 m, return to the chair and sit down again. The test consists in the evaluation of the sitting balance, transference from the sitting position to the standing up position, ambulation stability and changes in the gait path without using compensatory strategies. The test is scored according to the Likert model, from 1 (normal) to 5 (severe abnormality). As the test started to be measured by the time the individual spent to perform the proposed tasks, it started to be called “Timed Get Up and Go”\(^1\)\(^2\)\(^3\)\(^4\).

The Functional Independence Measure (FIM)\(^8\) was developed in 1987 by Hamilton & Granger. It is an impairment indicator, where the intensity of the assistance offered by a third person to the impaired patient is measured and it has several sub-scales, where items related to self-care, sphincter control, mobility, ambulation, communication and social cognition are evaluated. A total of 18 activities of daily living are measured on a seven-level scale. Level 1 indicates complete dependence (total assistance) and level 7 indicates complete independence. The FIM items are added to create a score that varies from 18 to 126 points\(^9\)\(^10\).

The Western Ontario and McMahons University Osteoarthritis Index is specific for the assessment of the quality of life of patients with knee and hip osteoarthritis. It was cited in four studies as an instrument used to evaluate the functionality and quality of life. The questionnaire is self-applicable and consists of three domains: pain, joint stiffness and physical activity\(^11\). This questionnaire is available in two formats: visual analog scale and Likert model, with similar metric properties. The time considered in the questionnaire questions is related to the activities performed in the previous week\(^12\)\(^13\).

Complaints related to memory disorders are common during the aging process. These complaints may be caused by multiple diseases, from stress, anxiety, depression and surgical processes to the so-called dementias\(^14\)\(^15\).

The mental state is disclosed through the responses, which are observed at the anamnesis. Although they appear to be conscious and alert, many patients may be also disoriented. Undoubtedly, the examiner must evaluate orientation in time and space and people orientation\(^16\).

The knowledge must also be evaluated, and it must be appropriate for the age, educational level, occupation and social group. On the other hand, the capacity to calculate is the highest integrative function, with the patient being able to subtract, multiply and add simple numbers or count backwards. In brief, the examiner must try to gather a series of simple questions that will assess the patient’s mental state in a large variety of situations\(^17\).

One of the frequent complications of orthopedic surgical procedures in the elderly is related to delirium, which is a state of acute mental confusion characterized by symptoms such as decreased attention capacity, memory and concentration deficit, language difficulty, illusions, hallucinations and many other abnormal behaviors\(^18\).

The delirium symptoms significantly affect the patient’s recovery regarding the functional state, level of discomfort and duration of hospital stay. Thus, the patient needs more help to perform the activities of daily living. This association between delirium and functional recovery has also been identified in other studies\(^19\).

In the present documental study, most of the approaches used standardized scales that tested several cognitive functions, helping identify deficiencies that have an impact on the global functional capacity. Therefore, validated mental state tests can help the nurse determine which behaviors are being impaired that might justify interventions.

For elderly patients, the most commonly used scales were: the Mini-Mental State Examination\(^22\)\(^24\)\(^25\)\(^39\)\(^40\), Blessed Dementia Rating Scale\(^22\)\(^24\)\(^25\)\(^39\)\(^40\), Confusion Assessment Method\(^22\)\(^24\)\(^25\)\(^39\)\(^40\) and the Delirium Symptom Interview\(^21\)\(^25\).

The Mini-Mental State Examination was developed by Folstein and cols. and translated and adapted in Brazil by Bertolucci et al\(^22\). It can be applied in 5 to 10 minutes. It consists of several questions grouped in 7 categories: time orientation (5 points), space orientation (5 points), list of 3 words (3 points), attention and calculation (5 points), remembering 3 words (3 points), language (8 points) and visual constructive skill (1 point). The score can vary from a minimum of 0 (zero) to a maximum of 30 points\(^21\)\(^25\).

The Blessed Dementia Rating developed by Blessed et al\(^27\) consists of four parts: the first concerns the changes in the performance of ADL, the second concerns changes in habits, the third refers to changes in personality, interests and the management of situations, i.e., evaluates behavior, and the fourth gives a global idea of the patient’s mental state. The test can be applied in 20 to 25 minutes.

The Confusion Assessment Method scale was developed by Inouye et al\(^1\). It was translated and validated in Brazil by Fabri et al\(^53\) and consists of nine parts: beginning of the disease, attention, disorganized thoughts, alteration in the consciousness level, disorientation, memory loss, sensory perception disorders, psychomotor activity and sleep cycle.

The Delirium Symptom Interview developed by Albert et al\(^54\), consists of 6 parts: disorientation, sleep disorder, perception dis-
order, consciousness disorder, incoherence in language and level of psychomotor activity.

All the described scales are examples of instruments used in the assessment of elderly patients. It becomes important to emphasize that the preservation of independence is the main objective in the recovery of elderly patients submitted to orthopedic surgery; however, the early detection of alterations through the use of a simple assessment tool allows the identification of the at-risk population, and thus, the start of preventive measures that are necessary to improve the quality of life of these patients.

FINAl CONsIdERATIONS

When this study was structured, the idea was to analyze articles that evaluated the elderly functionality in a broad form, i.e., the idea was that elderly patients submitted to orthopedic surgery would be evaluated in the perioperative period regarding the physical, cognitive and social dimensions, as these data were relevant for a faster rehabilitation, focused on autonomy and independence. Only 27.6% of the studies used an assessment instrument and the physical/functional dimension was the most assessed, perhaps due to the fact that it is considered to be the base dimension, whereas the social dimension was not assessed. Although one study used the Nottingham Health Profile questionnaire, which has an item that investigates social isolation, this item was not analyzed in the text.

This fact raises questions on why this dimension is not investigated, as the physical impairment associated to the cognitive impairment implies in social problems.

Another fact observed was the diversity of assessment instruments, mainly those directed at the functional and cognitive dimensions. Such variety makes it difficult to compare the studies between the healthcare services (hospital and rehabilitation services). Perhaps with the oncoming proposal by the World Health Organization through the International Classification of Functionality, Disability and Health, the healthcare services can adopt this reference to systematize the assessment and/or follow-up of the functional capacity of the patients, without disregarding the specificities of each service.

It is also noteworthy the fact that few studies have focused on the multidisciplinary work, as well as the lack of participation of healthcare services in the community and the patient’s involvement in decision-making and the family’s involvement in the recovery of the individual.

We also observed that most studies were directed to the description or evaluation of the several types of health interventions and the functional impact caused by the fractures and orthopedic surgeries, which corroborates the necessity to further extend the studies on this subject.

Nevertheless, the greatest difficulty or study limitation can be related to the fact that we used exclusively the DeCS and MeSH descriptors to recover scientific articles from the electronic databases, as it was observed the existence of a disagreement between these terms and the keywords used by the researchers, which might have contributed to the absence of many national and international studies from our sample.

Although the number of publications has increased in the last years, it is necessary for the specialized health services to incorporate the new paradigm of functional assessment of the elderly patient, and that the health care offered by the professionals in this area aim at maintaining and recovering the elderly functional capacity.

### Chart 1 Assessment instruments identified at the literature review on the functional evaluation of elderly individuals submitted to orthopedic surgery. May 2006.

**Functional Status**
- The Barthel Self Care or Barthel Index
- ADL Scale of Katz or Katz’s ADL Index
- Functional Ambulation Classification
- Self-Efficacy Expectation Scale
- Functional Status Index
- Dowton’s Activity Scale
- Get Up and Go
- Timed Up & Go Test
- The Japanese Orthopedic Activities of Daily Living
- Functional Independence Measure
- Nottingham Extended ADL Index
- Duke Activity Status Index
- The Disability Rating Scale
- Klein Bell ADL Scale
- Functional Ability
- Recovery Locus of Control Scale
- Swedish Clinical Outcome Variable

**Mental Status or Psychological Well-Being**
- Mini-Mental State Examination
- Geriatric Depression Scale
- The Neechom Confusion Scale
- The Organic Brain Syndrome Scale
- Delirium Symptom Interview
- Confusion Assessment Method
- Blessed Dementia Rating Scale
- Philadelphia Geriatric Centre Morale Scale
- Memorial Delirium Assessment Scale
- Mattis Dementia Rating Scale
- Neurobehavioral Cognitive Status Examination
- The Hospital Anxiety and Depression Scale

**Quality of Life (QoL)**
- Medical Outcomes Study Short Form 36, Health-Related Quality of Life – SF-36
- Nottingham Health Profile
- WOMAC – Western Ontario and Mcmasters University Osteoarthritis Index

**Several**
- Ware Satisfaction with Care Scale
- Acute Physiology Score of Apache III
- Glasgow coma Score
- Severity Index of Cumulative Illness Rating Scale
- Rasch Base Scoring

**Pain Scale**
- Visual Analogue Scale for Pain
- Harris Hip Score

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