

# Using the Comprehensive Geriatric Assessment technique to assess elderly patients

JKH Luk, KH Or, J Woo

**Objective.** To review the concept, components, and characteristics of the Comprehensive Geriatric Assessment technique.

**Data sources.** *Medline* and non-*Medline* literature search.

**Study selection.** The following key words were used: Comprehensive Geriatric Assessment; all available years of study were reviewed.

**Data extraction.** Studies that assessed the Comprehensive Geriatric Assessment technique's benefits were examined.

**Data synthesis.** By using the Comprehensive Geriatric Assessment programme, accurate diagnoses can be made, treatable illnesses can be screened for, therapeutic plans can be formulated, and the optimal placements of patients can be achieved. Assessment should be performed at each level of geriatric care; various well-validated scales are used to measure the activity of daily living of patients. The Comprehensive Geriatric Assessment programme can improve functional status; reduce the use of medications, nursing homes, and medical services; and reduce mortality rates. Most studies confirm that a successful programme requires careful patient targeting, implementation of the programme by attending physicians, and patient adherence to the recommendations made.

**Conclusions.** A well-targeted Comprehensive Geriatric Assessment programme and the control of patients' adherence to recommendations are effective in improving the well-being of elderly patients.

*HKMJ 2000;6:93-8*

*Key words: Geriatric assessment; Geriatrics/organization & administration; Length of stay/economics; Outcome assessment (health care); Program evaluation*

## What is Comprehensive Geriatric Assessment?

A major difference between geriatric medicine and adult medicine is the emphasis on a holistic approach in the former. A holistic approach needs to be adopted by geriatricians mainly because of the complex medical history of elderly patients: older patients tend to have multiple organic, psychological, and social problems.<sup>1</sup> Their functional and physiological capacities are often diminished and the adverse effects of drugs are more pronounced. Atypical symptoms of common diseases often occur and physical illnesses may present as a mental disorder (eg delirium) or loss of a certain function. The concept of Comprehensive Geriatric Assessment (CGA) has evolved because of the many problems of elderly subjects.<sup>2</sup>

Comprehensive Geriatric Assessment (also called Multidisciplinary Geriatric Assessment) is defined as a multidimensional, multidisciplinary diagnostic process that aims to determine a frail elderly person's medical, psychosocial, and functional capacities and problems. The objective is to develop an overall plan of treatment and long-term follow-up.<sup>1</sup> This concept started in 1930, when Dr Marjory Warren began to evaluate and rehabilitate the patients who attended a large London infirmary. Dr Warren was able to get most of the patients out of bed, and many were subsequently discharged home.<sup>2-4</sup> Since then, the concept of CGA has evolved and can now be regarded as the 'technology' of geriatric medicine.

## Purposes and components of Comprehensive Geriatric Assessment

The assessment tries to accurately diagnose, screen for treatable illnesses, formulate a rational therapeutic plan, and document any change over time in elderly people. Frequently, the appropriateness of services (such as long-term care) and optimal placement are

---

Medical and Geriatrics Unit, Shatin Hospital, Shatin, Hong Kong  
JKH Luk, MB, BS, MRCP  
KH Or, MB, BS, MRCP, FHKAM (Medicine)  
J Woo, MD, FHKAM (Medicine)

Correspondence to: Dr JKH Luk, Department of Geriatrics, Fung Yiu King Hospital, Sandy Bay Road, Hong Kong

also determined. The most important characteristic of CGA is the use of a multidisciplinary approach.<sup>1</sup> The participation of multidisciplinary teams can greatly increase the expertise and enthusiasm for patient assessment and care. The final organisation depends on the programme goals, setting, patient load, and funding. Most groups consist of a physician, a nurse, and a social worker. Other members include a physiotherapist and occupational therapist. Some assessment teams also have a dietitian, psychologist, psychiatrist, podiatrist, ophthalmologist, or clinical pharmacologist.

Because of the range of problems that can be present, the WHO has identified and recommended certain domains to be assessed in elderly patients (Box).<sup>5</sup> Based on these domains, different assessment instruments have been formulated. Geriatric instruments are usually well-validated scales that make assessment much easier to perform and more reliable. Another advantage is that standardised instruments can facilitate the transfer of information between health care workers, allowing smooth teamwork to occur and valuable and valid data to be tabulated, and the progress of treatment to be measured over time.

To determine a person's basic activity of daily living (ADL), the Barthel ADL and Katz index of ADL are often used.<sup>6,7</sup> To determine the instrumental ADL (IADL), the Lawton IADL scales and the Fillenbaum five-item IADL questionnaire are some of the more commonly used instruments.<sup>8,9</sup> Different scales exist for assessing cognitive function and include the Abbreviated Mental Test (AMT) and the Folstein Mini-Mental State Examination (MMSE).<sup>10,11</sup> The Cantonese version of the AMT and the Putonghua and Cantonese versions of the MMSE are available and have been validated.<sup>12-14</sup> Various depression-screening tools are also available. The more commonly used scales are the Yesavage Geriatric Depression Scale; the Hamilton Rating Scale for Depression, Selfcare (D); and the Zung Self-rating Depression Scale.<sup>15-18</sup> A validated Cantonese version of the Geriatric Depression Scale has been used in local

studies.<sup>19</sup> No single instrument for measuring social and economic status seems to exist. Any such measure would be lengthy, as it would need to measure different aspects of social status. One simple example is the checklist recommended by the Royal College of Physicians of London and the British Geriatrics Society.<sup>20</sup> The quantification of physical health is considered the most difficult part of a geriatric assessment. This is mainly because of the complexity and multifactorial nature of physical illness. Some well-designed scales are available but are only appropriate for certain diseases, such as the widely used New York Heart Association's classification for heart disease.<sup>21</sup> As a result, many CGA programmes do not attempt to quantify their participants' physical diseases, but only record their diagnoses and medications used. One frequently overlooked area in the physical assessment of older patients is the screening for malnutrition.<sup>22</sup> Nutritional problems are not uncommon among older patients, especially those with underlying medical illnesses. Hence, a nutritional assessment should be included in CGA as part of the physical evaluation. Measuring the body weight, body mass index, mid-arm circumference, triceps skinfold thickness, and serum albumin level provides helpful clues about an elderly person's nutritional status.<sup>23</sup> The arm span can be used to approximate the height of an elderly subject if their height cannot be measured due to skeletal problems and immobility.<sup>24</sup>

Another aspect that should be included in the physical assessment of the elderly is the evaluation of mobility and fall risk, because instability (recurrent falls) and immobility are two significant problems. Established tools that evaluate these are available, including the Timed Up-and-Go Test, the Functional Reach Test, and tests for gait and balance that have been developed by Tinetti.<sup>25-27</sup> Recently, it has been advocated that assessment should not be limited to only the elderly, as caregiver burden has also been shown to be an important factor in governing the use of long-term care services. Consequently, it has been suggested that caregiver burden be included as part of geriatric assessment, and various instruments have been developed to measure this value.<sup>28-31</sup>

Comprehensive geriatric assessment can take place in different settings. It is advocated that the CGA should be performed at each level of elderly patient care. These include the general practice, acute hospital, convalescence hospital, long-term care facility, community geriatric team visit, geriatric day-hospital, and even the patient's home. Hence, the process of geriatric assessment can be regarded as a continuum

Domains identified by the World Health Organization as needing assessment in elderly patients<sup>5</sup>

Physical health  
Mental function: cognitive and psychiatric symptoms  
Functional capacity: basic activity of daily living and instrumental activity of daily living  
Social resources  
Environmental resources  
Economic resources

that ranges from a limited assessment by primary physicians to a more thorough evaluation by geriatric teams.

The source of patients varies among different CGA programmes. Elderly patients usually come from the community (referral from family doctors and general practitioners), acute hospital after admittance to the emergency unit, or a long-term care facility. One common feature of most CGA programmes is the selection of target patients with the use of inclusion and exclusion criteria. The programmes usually include those that are older than 65 years, although some have higher age limits. Elderly subjects who are too ill, have a terminal disease, are severely demented, or are too healthy are frequently excluded.

### Benefits of using Comprehensive Geriatric Assessment

Many studies, both descriptive and controlled trials, have been performed to examine the effectiveness of CGA.<sup>32-44</sup> Some of the more recently published controlled trials that show the benefits of CGA are summarised in Table 1. In one randomised controlled study, elderly patients with a strong chance of nursing home admission but who were not too ill, severely demented, or were too well were admitted to a geriatric evaluation unit (intervention group).<sup>32</sup> The unit was staffed by geriatricians, a social worker, and geriatric nurses, and was supported by occupational therapists, physiotherapists, psychologists, and dietitians. At the 1-year follow-up, lower mortality rates, fewer discharges to nursing homes, shorter acute hospital stay, lower direct cost of institutional care, and improvement in morale and functional status were demonstrated in the intervention group compared with the controls.<sup>32</sup>

A more recent randomised controlled trial by Landefeld et al<sup>33</sup> showed that selected elderly patients admitted into a special unit with geriatric emphasis had better ADL scores, lower rates of nursing home admission, and better general well-being and health status than did the controls. Two in-patient controlled trials have been reported by Hogan et al.<sup>34,35</sup> In the 1987 study, the older patients assessed by the geriatric consultation service (without follow-up) had greater improvements in mental state, had fewer medications on hospital discharge, and showed lower short-term death rates than the control group.<sup>34</sup> In the later trial reported by Hogan and Fox in 1990,<sup>35</sup> the intervention group was provided with follow-up. Improved 6-month survival rates and a better Barthel index were seen, along with the decreased use of institutional care.<sup>35</sup>

Likewise, the benefits of CGA in out-patient settings have been reported by various researchers. Boulton et al<sup>36</sup> performed a controlled study in which 43 elderly patients with a high readmission chance (detected by a screening score) attended an out-patient geriatric evaluation and management follow-up that was run by a geriatric multidisciplinary team for 3 to 4 months. After 17 months, a reduced mortality rate and lower use of nursing homes and emergency services were noted. Another study by Silverman et al<sup>37</sup> used out-patient geriatric assessment without rehabilitation services or direct control of management and was able to show benefits of improved diagnosis, better psychological and emotional outcome, and reduced level of carer stress in the intervention group compared with the control group. Other community-based controlled trials have also revealed benefits from using CGA.<sup>38,39</sup>

Some controlled trials that have evaluated CGA have not been able to demonstrate benefits (Table 2). In the study of Teasdale et al,<sup>41</sup> patients admitted to

**Table 1. Controlled studies that were able to show the benefits of Comprehensive Geriatric Assessment**

Study	Patient setting	Year	Benefit found*									
			1	2	3	4	5	6	7	8	9	10
Rubenstein et al <sup>32</sup>	In-patient	1984	+	+	+	+		+		+	+	+
Landefeld et al <sup>33</sup>	In-patient	1995		+	+			+				
Hogan et al <sup>34</sup>	In-patient	1987				+	+					
Hogan and Fox <sup>35</sup>	In-patient	1990	+			+				+		
Boulton et al <sup>36</sup>	Out-patient	1994						+		+		+
Silverman et al <sup>37</sup>	Out-patient	1995	+		+	+						
Vetter et al <sup>38</sup>	Community	1984				+			+			+
Hendriksen et al <sup>39</sup>	Community	1984						+	+	+	+	
Epstein et al <sup>40</sup>	Out-patient	1990				+						

\* Key:

- 1 = Improved diagnostic accuracy
- 2 = Improved placement
- 3 = Improved function
- 4 = Improved affect or cognition
- 5 = Reduced medication use

- 6 = Decreased nursing home use
- 7 = Increased use of home health care service
- 8 = Reduced use of medical service
- 9 = Reduced medical cost
- 10 = Reduced mortality rate

**Table 2. Controlled studies that failed to show any benefit from using the Comprehensive Geriatric Assessment**

Study	Patient	Year	Likely reasons for finding of no benefit
Epstein et al <sup>40</sup>	Out-patient	1990	Inappropriate targeting
Teasdale et al <sup>41</sup>	In-patient	1983	Inappropriate targeting
Reuben et al <sup>42</sup>	In-patient	1995	No geriatric follow-up
Winograd et al <sup>43</sup>	In-patient	1988	No geriatric intervention strategies and control
Fretwell et al <sup>44</sup>	In-patient	1990	Inappropriate targeting

geriatric assessment units were compared with those admitted to a general medical unit; patients with severe dementia and terminal disease were not excluded. No difference in the mortality rates or rates of post-hospital discharge to nursing homes or own homes was found. The authors attributed the lack of difference between the two groups to the inappropriate targeting of patients. In the study by Epstein et al,<sup>40</sup> 600 elderly patients were randomised into one of three groups: consultation by a geriatric assessment team, a second opinion internist, or a traditional health organisation service. A small improvement in cognition was found in the first group. However, the authors could not demonstrate any difference in mortality rate, hospitalisation, or nursing home placement among the three arms. The authors suggested that the population they studied was too healthy to show any difference. In a hospital setting, Reuben et al<sup>42</sup> could not show any difference in survival rate or functional status between the well-selected group that had received geriatric consultation without follow-up and the control group, which was given usual medical care. In their evaluation of the success of the programme, the authors commented that the control of management and follow-up were two important factors missing from their protocol.

Others have also reported a negative result from a randomised in-patient trial. Winograd et al<sup>43</sup> showed that there were no differences in discharge or functional status, level of care in the follow-up year, or use of nursing homes, hospitals, and health services between the intervention group and the control group. Fretwell et al<sup>44</sup> also failed to demonstrate any benefit from in-patient geriatric evaluation in an unselected group of elderly patients. Despite these negative reports, a meta-analysis of all of the control trials was able to show a reduction in mortality and institutionalisation

rates and an improvement in functional status that could be attributed to CGA.<sup>45</sup> In addition, the authors found that the programmes that had control over management decisions and included extended ambulatory geriatric follow-up produced more benefits.<sup>45</sup>

### Factors that determine the effectiveness of an assessment programme

The results of studies of CGA confirm that a successful programme requires several elements (Table 3).<sup>45</sup> Careful patient targeting and selection is important, as choosing elderly patients by age alone has been shown to be ineffective.<sup>46</sup> Winograd et al<sup>46</sup> selected patients by age alone and revealed that nearly two thirds were too independent and 12% too impaired to benefit from CGA. Only 24% of patients were considered appropriate candidates for a geriatric consultation. Hence, in many trials, the older patients who were too well, too ill, had a terminal disease, or were severely demented had been excluded. Besides selective patient targeting, more clinical geriatric control, having a follow-up period, and including intervention strategies are essential elements of an effective CGA programme. The implementation of the protocol by the attending physicians (especially in the setting of in-patient and primary care geriatric consultations) and the adherence of the patient to the regimen are also important in determining the effectiveness of a CGA programme.

### Comprehensive Geriatric Assessment in practice in Hong Kong

Primary health care providers will likely want to know how the concept of CGA can be applied in daily practice locally. As mentioned, geriatric assessment should be practised all levels of patient care. In the acute hospital setting, CGA is important, as the final

**Table 3. Factors contributing to the success of geriatric assessment programmes<sup>45</sup>**

High impact	Low impact
Well-targeted elderly patients	No patient targeting
Includes follow-up period	No follow-up period
Programme organisers have clinical control	Programme organisers have no clinical control
Intense intervention strategies used	No intervention strategies used

outcome may not be optimal if treatment is approached without consideration of the other dimensions of geriatric assessment. In addition, careful geriatric assessment can provide accurate information about a patient's pre-morbid status, which is an important predictor of post-hospitalisation outcome. It also gives time to plan for services that will be needed at discharge. It is a challenge to perform geriatric assessment in the busy and overcrowded acute hospital wards we have in Hong Kong. In hospitals with an independent geriatrics department, geriatric assessment can be performed by the geriatric multidisciplinary teams that directly care for all elderly patients. For acute medical units with an integrated geriatric practice, one form of CGA is the geriatrician-led and nurse-implemented screening in which the geriatric team assesses and gives appropriate recommendations on the older patients who are admitted to acute medical units. Comprehensive geriatric assessment is more commonly performed in post-acute hospitals or wards that are led by geriatricians, because the team is organised and trained to perform the assessment.

The geriatric day-hospital is considered a convenient place in which to perform CGA. As different clinical disciplines are present, a multidisciplinary assessment using geriatric instruments can be made at the same session. The opinions of allied health professionals (eg dietitians, podiatrists, psychologists, psychiatrists, and social workers) can be easily obtained, if needed, and transportation is usually available for patients. On the other hand, a visit by a community geriatric team to an elderly person's home has the advantage of allowing a geriatric assessment to be made in the patient's home environment. Carers can give the team accurate information about the elderly patient, and other multidisciplinary team members are usually available to assess the subject, although perhaps not in the same session.

In Hong Kong, the general or specialty medical out-patient clinics are not good places in which to conduct CGA. The problems include limited contact time with a patient and the lack of other disciplines in these clinics. This makes a thorough multidisciplinary assessment and the use of geriatric instruments not feasible. In addition, there is a tendency to focus on a single patient domain in specialty clinics (eg glucose control in a diabetes clinic), thus overlooking other dimensions in older patients. We advocate that physicians working in these settings should adopt a more holistic patient approach and any patient with problems should be referred to the geriatric team for a more thorough assessment.

## Conclusion

In the West, family doctors and primary health care practitioners play important roles in patient care as well as assessing ambulatory elderly patients.<sup>47</sup> Unfortunately, the primary health care system is not well established in Hong Kong and this shifts the burden of elderly assessment and care to the public hospitals and clinics. General practitioners need to learn more about geriatric care by continuing medical education. Hong Kong should try to develop a much better primary health care system that can share the workload of the public sector and improve the quality of ambulatory care given to the elderly in the community.

## References

1. Rubenstein LZ. Geriatric assessment: an overview of its impacts. *Clin Geriatr Med* 1987;3:1-15.
2. Warren MW. Care of the chronic sick: a case for treating chronic sick in blocks in a general hospital. *Br Med J* 1943;2:822-5.
3. Warren MW. Care of the chronic aged sick. *Lancet* 1946;1:841-3.
4. Matthews DA. Dr. Marjory Warren and the origin of British geriatrics. *J Am Geriatr Soc* 1984;32:253-8.
5. World Health Organization. Health of the elderly. Geneva: WHO, 1989.
6. Mahoney FI, Barthel DW. Functional evaluation: The Barthel ADL index. *Maryland State Med J* 1965;14:61-5.
7. Katz S, Akpom CA. A measure of primary sociobiological functions. *Int J Health Serv* 1976;6:493-507.
8. Lawton MP, Brody EM. Assessment of older people. Self-maintaining and instrumental activities of daily living. *Gerontology* 1969;9:179-86.
9. Fillenbaum G. Screening the elderly: a brief instrumental activities of daily living measure. *J Am Geriatr Soc* 1985;33:698-706.
10. Hodkinson HM. Evaluation of a mental test score for assessment of mental impairment in the elderly. *Age Aging* 1972;1:233-8.
11. Folstein MF, Folstein SE, McHugh PR. Mini-mental state: a practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res* 1975;12:189-98.
12. Chu LW, Pei CKW, Ho MH, Chan PT. Validation of the Abbreviated Mental Test (Hong Kong version) in the elderly medical patient. *HK Med J* 1995;1:207-11.
13. Yu ES, Liu WT, Levy P, et al. Cognitive impairment among elderly adults in Shanghai, China. *J Gerontol* 1989;44(Suppl):97S-106S.
14. Chiu HFK, Lee HCB, Chung D, Kwong PK. Reliability and validity of the Cantonese version of the Mini-Mental State Examination: a preliminary study. *HK J Psych* 1994;4(Suppl 2):25S-28S.
15. Yesavage JA, Brink TL, Rose TL, et al. Development and validation of a geriatric depression screening scale: a preliminary report. *J Psychiatr Res* 1983;17:37-49.
16. Shah A, Herbert R, Lewis S, et al. Screening for depression among acutely ill geriatric inpatients with a short Geriatric Depression Scale. *Age Ageing* 1997;26:217-21.

17. Hamilton M. Development of a rating scale for primary depressive illness. *Br J Soc Psychol* 1967;6:278-96.
18. Zung WWK. A self-rating depression scale. *Arch Gen Psychiatry* 1965;12:63-70.
19. Chiu HFK, Lam LCW, Chi I, et al. Prevalence of dementia in Chinese elderly in Hong Kong. *Neurology* 1998;50:1002-9.
20. Royal College of Physicians of London & the British Geriatrics Society. Standardised assessment scales for elderly people: a report of joint workshops of the Research Unit of the Royal College of Physicians and the British Geriatrics Society. London: The Royal College of Physicians of London and the British Geriatrics Society; 1992.
21. van den Broek SA, van Veldhuisen DJ, de Graeff PA, et al. Comparison between New York Heart Association classification and peak oxygen consumption in the assessment of functional status and prognosis in patients with mild to moderate chronic congestive heart failure secondary to either ischaemic or idiopathic dilated cardiomyopathy. *Am J Cardiol* 1992;70:359-363.
22. Lehmann AB. Review: undernutrition in elderly people. *Age Ageing* 1989;18:339-53.
23. McEroy AW, James OF. Anthropometric indices in normal elderly subjects. *Age Ageing* 1982;11:97-100.
24. Kwok T, Whitelaw MN. The use of armspan in nutritional assessment of the elderly. *J Am Geriatr Soc* 1991;39:492-6.
25. Podsiadlo D, Richardson S. The timed "Up & Go": a test of basic functional mobility for frail elderly persons. *J Am Geriatr Soc* 1991;39:142-8.
26. Welner DK, Duncan PW, Chandler J, Studenski SA. Functional reach: a marker of physical frailty. *J Am Geriatr Soc* 1992;40:203-7.
27. Tinetti ME, Williams TF, Mayewski R. Fall risk index for elderly patients based on number of chronic disabilities. *Am J Med* 1986;80:429-34.
28. Robinson B. Validation of a caregiver strain index. *J Gerontol* 1983;38:344-8.
29. Montgomery RJ, Stull DE, Borgatta EF. Measurement and the analysis of burden. *Res Ageing* 1985;7:137-52.
30. Vitaliano PP, Russo J, Young HM, et al. The screen for caregiver burden. *Gerontology* 1991;31:76-83.
31. Kinney JM, Stephens MA. Caregiving Hassles Scales: assessing the daily hassles of caring for a family member with dementia. *Gerontology* 1989;29:328-32.
32. Rubenstein LZ, Josephson KR, Wieland GD, English PA, Sayre JA, Kane RL. Effectiveness of a geriatric evaluation unit: a randomised clinical trial. *N Engl J Med* 1984;311:1664-70.
33. Landefeld CS, Palmer RM, Kresevic DM, Fortinsky RH, Kowal J. A randomised trial of care in a hospital medical unit especially designed to improve the functional outcomes of acutely ill older patients. *N Engl J Med* 1995;332:1338-44.
34. Hogan BD, Fox RA, Badley BW, Mann OE. Effect of a geriatric consultation service on management of patients in an acute care hospital. *Can Med Assoc J* 1987;136:713-7.
35. Hogan DB, Fox RA. A prospective controlled trial of a geriatric consultation team in an acute-care hospital. *Age Ageing* 1990;19:107-113.
36. Boulton C, Boulton L, Murphy C, Ebbitt B, Luptak M, Kane RL. A controlled trial of outpatient geriatric evaluation and management. *J Am Geriatr Soc* 1994;42:465-70.
37. Silverman M, Musa D, Martin DC, Lave JR, Adams J, Ricci EM. Evaluation of outpatient geriatric assessment: a randomized multi-site trial. *J Am Geriatr Soc* 1995;43:733-40.
38. Vetter NJ, Jones DA, Victor CR. Effect of health visitors working with elderly patients in general practice: a randomised controlled trial. *BMJ* 1984;288:369-72.
39. Hendriksen C, Lund E, Stromgard E. Consequences of assessment and intervention among elderly people: a three-year randomised controlled trial. *BMJ* 1984;289:1522-4.
40. Epstein AM, Hall JA, Fretwell M, et al. Consultative geriatric assessment for ambulatory patients: a randomised trial in health maintenance organization. *JAMA* 1990;263:538-44.
41. Teasdale TA, Shuman L, Snow E, Luchi RJ. A comparison of placement outcomes of geriatric cohorts receiving care in a geriatric assessment unit and on a general medicine floor. *J Am Geriatr Soc* 1983;31:529-34.
42. Reuben DB, Borok GM, Wolde-Tsadik G, et al. A randomised trial of comprehensive assessment in the care of hospitalized patients. *N Engl J Med* 1995;332:1345-50.
43. Winograd CH, Gerety MB, Lai NA. A negative trial of inpatient geriatric consultation. *Arch Intern Med* 1993;153:2017-23.
44. Fretwell MD, Raymond PM, McGarvey T, et al. The senior care study: a controlled trial of a consultative/unit-based geriatric assessment program in acute care. *J Am Geriatr Soc* 1990;38:1073-81.
45. Stuck AE, Siu AL, Wieland GD, Adams J, Rubenstein LZ. Comprehensive geriatric assessment: a meta-analysis of controlled trials. *Lancet* 1993;342:1032-6.
46. Winograd CH, Gerety MB, Brown E, Kolodny V. Targeting the hospitalized elderly for geriatric consultation. *J Am Geriatr Soc* 1988;36:1113-9.
47. Rubenstein LZ, Calkins DR, Greenfield S, et al. Health status assessment for elderly patients: report of the Society of General Internal Medicine Task Force on Health Assessment. *J Am Geriatr Soc* 1989;37:562-9.