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Functional Status Versus Quality of Life

Where Does the Evidence Lead Us?

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The interchangeable use of functional status with quality of life has lead to various interpretations when discussing outcomes related to functional status. The literature revealed gaps in the measurement and blurred conceptualization of functional status. Given the prognostic importance of functional status measures, the results highlight the importance of developing a reliable and efficient means of obtaining a measure of functional status resulting in the advancement of nursing science. Having a clear and concise measure of functional status will enable clinicians to implement effect treatment plans that would lead to a faster recovery, higher level of functional status, and a greater well-being. **Key words:** *cardiovascular disease*, *functional status*, *measurement*, *quality of life*

QUALITY OF LIFE

In evaluating quality of life measures before and 1 year after admission to an intensive care unit, Konopad et al[1] defined *quality of life* as level of activity, activities of daily living (ADL), perceived health, support, and outlook on life. One-year quality-of-life questionnaires were completed on 293 patients. Relative to baseline, there was a significant decrease in the level of activity and ADL at 12 months postdischarge. Perceived health status significantly increased over the year for patients older than 75 years. Though their question was quality of life, the investigators seem to be measuring a dimension of functional status, level of activity, and ADL. In the assessment of quality of life outcomes,[2] Figure 1 details where functioning was placed within the dimension of quality of life and health domain of physical activity, which could lead to a misinterpretation of functioning. In comparison to Leidy's framework, Testa and Simonson's placement of functioning, though correct in the fact that functioning is a dimension of quality of life, can lead one to conclude that quality of life determines one's level of functioning. Leidy's framework provides a clear definition to one's functional status and does not blend the concept of quality of life providing an accurate explanation to one's functional status.

Functional status: Leidy's theoretical framework

According to Leidy,[3] all dimensions of functional status must be considered simultaneously in order that it be fully analyzed and understood (Figure 2). Individual elements of functional status may be evaluated and studied separately; however, this should be clarified through the appropriate use of terminology. The following are definitions by Leidy that provide an analytical framework in which to evaluate functional status and the 4 dimensions that lie within functional status:

Functional capacity: One's maximum potential to perform those activities people do in the normal course of their lives to meet basic needs, fulfill usual roles, and maintain their

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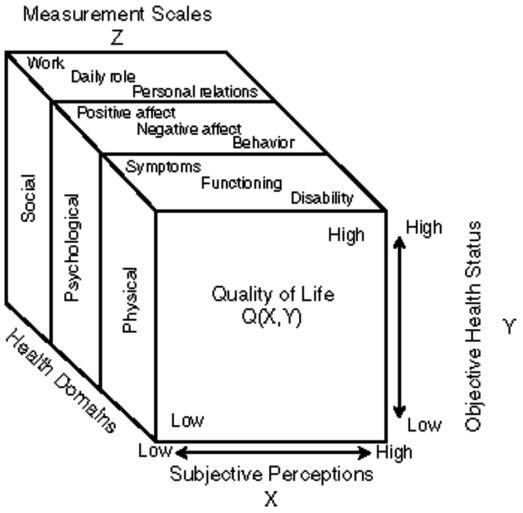

Figure 1. Assessment of quality of life outcomes. From Testa and Simonson.[2]

health and well-being. The term refers to potential in any domain including physical, cognitive, psychological, social, spiritual, and sociodemographic.

Functional performance: Any one of the domains of the physical, psychological, social, occupational, or spiritual activities that people actually do in the normal course of their lives to meet basic needs, fulfill usual roles, and maintain their health and well-being.

Functional reserve: The difference between capacity and performance, one's functional latency, or dormant abilities that can be called upon in time of perceived need.

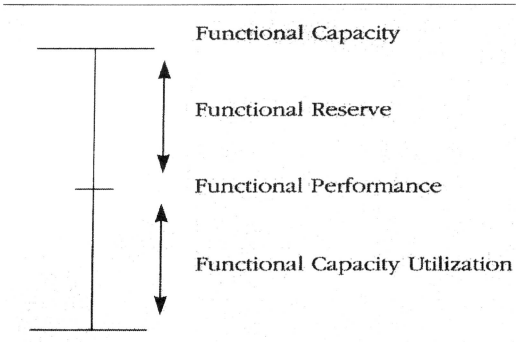

Figure 2. Functional status framework. From Leidy.[3]

Functional capacity utilization: Refers to the extent to which functional potential is called upon in the selected level of performance.

Understanding each dimension and knowing that one dimension can influence the other dimensions has significance when trying to specify accurately the practice or study objectives, select the appropriate intervention protocol, and designate an outcome measure with the greatest likelihood of demonstrating effect.[4]

There were many elements that made up quality of life according to Bond[5] that included *essential subjective elements* recognized by self-evaluation: (*a*) satisfaction with life, (*b*) cognitive abilities to evaluate life, (*c*) presence of social, emotional, physical, and mental health, by self-evaluation criteria, (*d*) happiness, and (*e*) psychological well-being. The *essential objective elements* evaluated by others included (*a*) evaluation of subjective elements by another, (*b*) socioeconomic status, (*c*) functional status, and (*d*) housing. Bond discusses the subjective and objective elements to quality of life and lists functional status as one of the objective elements. Interestingly, the same subjective elements that Bond lists are those same elements contained within Leidy's framework. Bond separates the 2, whereas Leidy combines these elements to make up the 4 dimensions of functional status providing a more clear and concise definition.

According to Meyboom-de Jong and Smith,[6] functional status has many aspects, including role activities, instrumental activities of daily living (IADL), basic activities of daily living, and at least 3 dimensions (ie, physical, emotional, social) and stated functional status was a concept of health that, in turn, was an aspect of the quality of life. To summarize these findings, quality of life in many ways does seem to explain functional status, but caution should be considered when explaining one's functional status. Quality of life encompasses the concepts of physical, psychological, social, and spiritual. These concepts in turn can be measured both subjectively and objectively, well-being

in subjective terms and functional status in objective terms. Quality of life does not determine one's functional status nor does functional status determine one's quality of life.

Functional capacity

Miranda[7] evaluated the influence of cardiopulmonary resuscitation on the components of quality of life in 477 patients who had received cardiopulmonary resuscitation and 500 who had not. This study found that, after discharge from the hospital, patients who recovered from circulatory arrest after cardiopulmonary resuscitation found their capacity for resuming work diminished after discharge from the hospital. Also, they seemed to experience a postponed negative effect on their mental functioning, especially the functions connected with the awareness of their environment.

Activities of daily living, specifically ADL scales, have been used as a synonym for physical function, performance, or functional status when realistically ADL scales assess the basic capacity of persons to care for themselves, hence, representing a narrow range of performance and do not truly represent all aspects of functional status.[8] Applegate et al[8] further assert that ADL scales were usually arranged hierarchically from the most basic of human functions (eg, using the toilet, eating) to somewhat higher functions (eg, dressing, walking). Myers[9] stated the accepted theoretical premise underlying the construction of ADL scales was that functional status was related to the ability to perform tasks of daily living.

Jette et al[10] presented an empirical comparison of 4 functional outcome instruments used in a postacute care setting with respect to their content, breadth of coverage, and measurement precision. The measurements included (*a*) the functional independence measure (FIM) for acute medical rehabilitation, (*b*) the minimum data set for skilled nursing and subacute rehabilitation programs, (*c*) the outcome and assessment information set for home health care, and (*d*) the short form-36 (SF-36) for ambulatory care programs using only the 10 items related to physical functioning (PF).

The internal consistency values of the 4 functional ability instruments were minimum data set = 0.97, outcome and assessment information set = 0.99, FIM = 0.99, and the PF-10 = 0.99. When all items were combined from the 4 functional ability instruments, the internal consistency of the items was 0.85. Only 5 of the items within the existing instruments (7.2%) exceeded the goodness of fit values. Jette et al[10] felt it was acceptable to combine the items from each of the 4 functional outcome instruments into an overall functional ability scale for the purposes of directly comparing their range of functional content, breadth of coverage, and measurement precision. The results illustrated limitations in the range of content, breadth of coverage, and measurement precision in each outcome measurement. None appeared well-equipped to meet the challenge of monitoring quality and functional outcomes across settings where postacute care was provided.

Summarized these studies selected various measurements to describe functional capacity, but have used terms such as functional ability, capacity of resuming work status, or capacity to care for one's self. On the basis of Leidy's[3] framework, these results could clearly and consistently represent functional capacity, providing clarity to the outcome measure presented.

Functional performance

The attribute of functional independence, using the FIM (*Guide for the Uniform Data Set for Medical Rehabilitation*) on admission and discharge from rehabilitation facilities, was used to determine and measure functional status in stroke patients.[11] The FIM was the current standard outcome measure for rehabilitation services. The FIM is a measure of functional status on admission and discharge from a rehabilitation facility as assessed by various care providers (eg, nurses, occupational therapists, physical therapists,

speech psychologists). The FIM is an 18-item, 7-level scale of patient performance, where 1 represented total assistance and 7 represented independence for each of the subscales. The possible total score on the instrument ranged from 18, total dependence, to 126, highest level of independence. Using descriptive percentiles for comparing patients within the sample and across samples, the FIM admit score for these stroke patients, the 75th percentile, or 3rd quartile was 76, meaning among this facility's stroke patients, 75% had an admission value of 76 or less and only 25% had a score greater than 76. Overall at the time of discharge 50% of the patients gained less than 1 point per item on the 18-item FIM describing that most patients make incremental, rather than quantum, changes in their level of functioning.

In a study using neurological outcomes as a predictor of functional status, Dhar et al[12] described functional status determination retrospectively by the chart for pre- and postarrest status using the 5 category Pittsburgh modification of the Glasgow Outcome score for cerebral performance category (CPC) and overall performance categories (OPC). Those OPC included OPC I—*normal*, OPC II—*mild to moderate disability but functionally independent*, OPC III—*severe disability and functionally dependent*, OPC IV—*vegetative state*, and OPC V—*dead*.

Dhar et al[12] found in this descriptive study that prearrest functional status of the study population was equally distributed between OPC I (n = 87), OPC II (n = 112), and OPC III (n = 86). No patients who were OPC IV prearrest were admitted to the intensive care unit. This study surmised that 50% of the OPC I patients admitted survived to hospital discharge and that the majority (75%) were functionally independent (ie, OPC I, OPC II). Only 37% of the OPC II prearrest admissions survived to hospital discharge; however, 71% of these survivors were OPC II when discharged. Only 10 admissions (12%) who were OPC III before arrest survived to hospital discharge and none were functionally independent. To summarize, most patients returned to their prearrest functional independence and 58% of hospital survivors were alive 2 years after discharge. However, Hsu et al[13] found that the CPC score, relied on as a measure of functional outcome in cardiac arrest, correlated poorly with subsequent subjective quality of life scores and with validated objective functional testing instruments and, therefore, conclusions based on the CPC score from the Dhar et al[12] study were suspect.

These studies focused on one's actual performance based on neurological outcomes or performance of physical activity. Using Leidy's[3] framework, physical performance can be described and measured as the physical, psychological, social, occupational, and spiritual activities that people actually do in the normal course of their lives to meet basic needs, fulfill usual roles, and maintain their health and well-being.

Functional reserve

LaPier[14] studied functional status during immediate recovery after hospitalization for coronary artery disease. The attribute of physical endurance, the measurement of a timed walk test, and physiological findings (eg, electrocardiogram, oxygen saturation, blood pressure, rating of perceived exertion) were used to determine functional status. In this study, measurements of functional status included results from the 6-minute walk test (6MWT), the Duke Activity Status Index (DASI), and the RAND 36-Item Health Survey (36-IHS).

The study determined that the ability to perform ADL was strongly related to the self-reported quality of life in patients with coronary heart disease immediately after hospitalization. The results also indicated that the total and the PF scores of quality of life and the DASI provide similar information. Furthermore, the study demonstrated that performance-based (6MWT) and self-reported (DASI, 36-IHS) assessments did not provide synonymous information regarding functional status in this patient population. Therefore, it is important to include both performance-based and self-report measures in studies

examining patient functional status outcomes.

Graves et al[15] researched survivors of out-of-hospital cardiopulmonary arrest and determined their prognosis, longevity, and functional status. The attribute of neurological outcome to determine functional status was discussed by using the 5-point CPC classification scores. Graves et al[15] found that a large proportion of patients had CPC scores indicating functional problems when discharged, but these functional problems decreased 1 year later. The majority of cardiac arrest survivors returned to normal or near normal functional levels within a year and then continued to live for many years. Though the Grave's study used neurological outcome to describe functional status, using Leidy's framework of functional provides a clearer understanding of actual functional status in this population beginning the process of clarification, thus providing a more effective means of communicating this concept for scientific and clinical progress.

In a study to determine functional status and the correlates following coronary artery bypass graft (CABG) surgery in women, and being consistent with the role performance mode of the Roy Adaptation Model, functional status was studied by DiMattio and Tulman[16] as the performance of activities associated with life roles[17]; the focal stimulus being the physiological insult associated with CABG surgery. The results of this study found that women experienced significant gains in functional status over 6 weeks, particularly between 2 and 4 weeks. They most frequently engaged in personal care and low-level household activities during the study period and most reported improvement in their overall functional status. None of the women completely recovered or regained baseline functional status by 6 weeks post-CABG.

Knowing one's abilities in a time of need is important to the individual's ability to adapt and overcome critical events. Previous studies mentioned measured one's physical reserve of physical ability when called upon in different ways and describing it by exercise tolerance or level activity after a critical event. Using Leidy's[3] framework of functional reserve, which is the difference between capacity and performance, one's functional latency, or dormant abilities that can be called upon in time of perceived need, can provide a more concise description of those abilities that can be called upon when needed.

Functional capacity utilization

Functional Capacity Utilization (FCU) refers to the extent in which functional potential is called upon in the selected level of performance. It might be seen as the extent to which individuals realized their potential and is inversely related to reserve, which would be the indirect measure of fatigue. As FCU increased, exertion increased, performance approached capacity, and reserve was diminished.[18]

Although FCU and performance were related, the former was expressed relative to capacity whereas the latter was expressed in absolute terms. Differences in FCU might be manifested symptomatically as could be demonstrated with variations in fatigue given the same level of performance; trained, untrained, and ill individuals would report different levels of fatigue as a consequence of differences in capacity utilization.[3]

In a prospective, repeated-measures study, Barnason et al[19] examined functional status outcomes among patients with CABG over time (ie, at baseline; 3 months, 6 months, 12 months postsurgery) and the impact of selected patient characteristics (ie, age, sex, co-morbidities, cardiac rehabilitation participation) on functional outcomes. Functional status outcomes were measured utilizing the Medical Outcomes Study SF-36 and modified 7-Day activity instruments.

Findings from this study demonstrated rebound of both physical and social aspects of functioning in the early posthospitalization period (ie, 3 months after surgery), validating the realized benefits of the cardiac intervention for some distinct areas of functioning. However, levels of vitality attained only

modest levels indicating perceptions by patients that complete or maximum potential of vitality had not been attained even by 12 months after surgery.[19] Suggested examples of interventions to improve functional status might include symptom management (eg, pain management, fatigue management), individualized cardiac rehabilitation, psychosocial support, and the use of technologies to assist patients in attaining optimum functional status and reducing coronary artery disease risk factors.

As noted, FCU was "the extent to which capacity is called upon in the selected level of performance."[3(p199)] Both functional reserve and FCU add clarity to the understanding of functional status. However, there is no formula to calculate the difference between capacity and performance, or a reference available to judge high versus low reserve, but it is important to be aware of the difference between capacity and performance and address them while assessing individual functional status.[20]

Varied interpretations of functional status

Meyboom-de Jong and Smith[6] stated that functional status had many aspects including role activities, IADL, basic activities of daily living, and at least 3 dimensions (ie, physical, emotional, social). To determine where functional status was within the concept of quality of life, Figure 3 cited 4 dimensions that are commonly referred to within the literature: (*a*) physical, (*b*) psychological, (*c*) social, and (*d*) spiritual with the indicators of QOL (Quality Of Life) listed as well-being (subjective) and functional status (objective). It was important to understand that functional status was an objective indicator of QOL and it alone did not determine one's QOL.

Health status, functional status, and QOL are 3 concepts often used interchangeably to refer to the same domain of health.[21] However; Leidy[3] stated that functional status was unique from QOL; that functional status, like QOL, had multiple interpretations

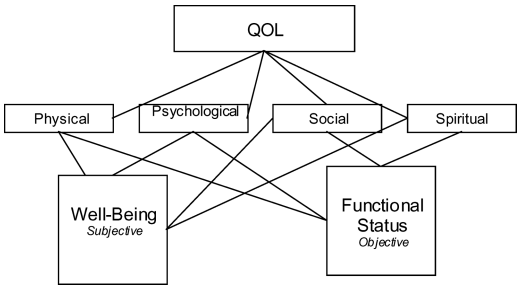

Figure 3. Quality of life diagram. From Haas.[25]

and measurements. Leidy suggested that functional status referred to "the entire domain of functioning. . . [and defined it as] a multidimensional concept characterizing one's ability to provide for the necessities of life; that is, those activities people do in the normal course of their lives to meet basic needs, fulfill usual roles, and maintain their health and well-being."[3(p197)]

The domain of functioning was not confined to PF but also included psychological, social, and spiritual functioning. Although the domains were similar to those identified in QOL, Leidy[4] emphasized that functional status was different because it was measured objectively. An example by Leidy suggested that spiritual functional status might be evidenced by church attendance or participation in prayer, which was different than the much broader spiritual domain of QOL

Issues of measurement

The multiple definitions and the lack of conceptual clarity resulted in multiple measures of functional status. Early studies evaluating functional status were mainly conducted in primary care settings as a screening measure.

Functional status was evaluated by use of the Functional Status Questionnaire (FSQ) by Jette et al,[10] who conducted a reliability and validity test using the questionnaire in a primary care setting. The FSQ provided a comprehensive assessment in ambulatory patients of physical, psychological, social, and role function. The FSQ was designed to screen for

disability and to monitor clinically meaningful change in function. Internal consistency reliabilities for the 6 FSQ scale scores ranged from 0.64 to 0.82.

Lapier[14] assessing functional status during immediate recovery after hospitalization for coronary artery disease, using the 6MWT with the self reports from the DASI and the 36-IHS. Results demonstrated that performance based (6MWT) and self-report (DASI, 36-IHS) assessments do not provide synonymous information regarding functional status in the coronary artery disease population. Therefore it is important to include both performance-based and self-report measures in studies examining patient functional outcomes, as the 6MWT cannot alone describe functional status.

Meyboom-de Jong and Smith[6] found the basic activities of daily living, IADL, and psychological function scores achieved the highest reliabilities. Work performance, social activity, and quality of interaction scores were less reliable. The quality of social interaction score was least reliable for participants aged 65 years or older; the reliability of other scale scores did not decrease with advancing age. Though limited, it did provide the clinician the ability to highlight areas of potential functional limitation.

Blake and Vandiver,[22] conducted a study measuring the reliability and validity of a 10-item measure of functional status, called the mini-DUHP, which is a subset of The Duke-UNC Health Profile (DUHP), a 63-item instrument that assessed 4 dimensions of functional status: symptom experiences, physical function, social function, and emotional function. On both administrations of the instrument to 71 subjects in a primary care setting, mini-DUHP scores were highly correlated with composite DUHP scores ($r = 0.81$; $r = 0.84$) and moderately correlated with each of the 4 functional dimension scores.

In 1990, Ware and Rand Corporation[23,24] conducted an analysis of the SF-36 Health Survey that was designed as a generic indicator of health status for use in population surveys and evaluative studies of health policy. The SF-36 included multi-item scales that measured the following 8 dimensions: PF, role limitations due to physical health problems, bodily pain, social functioning, general mental health covering psychological distress and well-being, role limitations due to emotional problems, vitality (ie, energy, fatigue), and general health perceptions.

The alpha internal consistency had been reported from many studies and combining results from these studies, the median alpha reliability for all scales exceeded 0.80, except for the 2-item social functioning scale (0.76). All scales appeared sufficiently reliable for comparing groups and the PF scale appeared reliable enough for comparing individuals.

Content validity was also established for the SF-36 Survey by use of empirical approaches, including factor analytic tests of construct validity, criterion-based approaches, and numerous correlation studies. Content analysis revealed that the SF-36 includes 8 of the health concepts most frequently represented in widely used health status measures. The SF-36 differed from most other measures in that it attempted to present a wider range of levels for most of these concepts. Therefore, it would be an extremely important measurement assessment in determining an individual's functional status after surviving an event such as a cardiopulmonary arrest.

The PF and mental health scales were relatively wholesome, being specific to medical or psychiatric disorders. The 2 role scales mostly reflected physical or mental conditions, but not exclusively. By design, the social functioning and vitality scales reflected both physical and mental conditions. The GH perceptions scale appeared to be most sensitive to physical health problems.

According to Haas,[25] the historical precedence for interpreting functional status only in the physical domain was evidenced by continued use of the Karnofsky scale. Karnofsky developed this tool to measure nursing workload. Haas went on to say that, although it was not designed as a quality of life measure, it was frequently used in this manner; actually what the instrument measured was

the physical functional status on a scale from 0 to 100 based on a person's ability to perform ADL, which provides minimal variability to the scale.

Although research focusing on functional status in various populations and settings seemed sporadic, difficulty in defining functional status and providing a conceptual framework had been the greatest obstacle. Several important variables related to functional status emerged from the preceding review of evidence. Factors contributing to the measure of functional status included ADL, IADL, ability to fulfill usual roles, maintain their health and well-being, and the dormant abilities that could be called upon in time of perceived necessary.[4]

As mentioned, studies have attempted to measure functional status but have not clearly captured the concept and have used quality of life interchangeably with functional status. Examples included evaluating neurological outcome to determine functional status by using the 5-point CPC classifications scores[15,11] that measured functional independence on admission and discharge to rehabilitation facilities to determine and measure functional status. LaPier[14] used physical endurance on the basis of physiological measurements to determine functional status postcoronary artery bypass surgery.

Coyne and Allen[26] presented an article on the assessment of functional status in patients with cardiac disease. They determined that the measurement of functional status lacked conceptual clarity, frequently focused on only 1 dimension of functioning, and overlooked the individuality of the patient. In addition, some measures of functional status had questionable sensitivity to capture change over time or the ability to discriminate between groups and lacked reports of reliability and validity testing.

The preceding review of evidence demonstrated gaps in functional status measurement and the use of an analytical conceptual model such as Leidy's[3] that clearly defined functional status and the 4 dimensions. Furthermore, given the prognostic importance of functional status measures, the results highlight the importance of developing a reliable and efficient means of obtaining functional status as well as capturing the multidimensional aspect of functional status.

REFERENCES

1. Konopad E, Noseworthy TW, Johnston R, Shustack A, Grace M. Quality of life measures before and one year after admission to an intensive care unit. *Crit Care Med.* 1995;23(10):1653-1659.
2. Testa MA, Simonson DC. Assessment of quality-of-life outcomes. *N Engl J Med.* 1996;334(13):835-840.
3. Leidy NK. Functional status and the forward progress of merry-go-rounds: toward a coherent analytical framework. *Nurs Res.* 1994;43(4):196-202.
4. Leidy NK. Using functional status to assess treatment outcomes. *Chest.* 1994;106(6):1645-1646.
5. Bond AE. Quality of life for critical care patients: a concept analysis. *Am J Crit Care.* 1996;5(4): 309-313.
6. Meyboom-de Jong B, Smith RJ. How do we classify functional status? *Fam Med.* 1992;24(2):128-133.
7. Miranda DR. Quality of life after cardiopulmonary resuscitation. *Chest.* 1994;106(2):524-530.
8. Applegate WB, Blass JP, Williams TF. Instruments for the functional assessment of older patients. *N Engl J Med.* 1990;322(17):1207-1213.
9. Myers AM. The clinical Swiss army knife: Empirical evidence on the validity of IADL functional status measures. *Med Care.* 1992;30(suppl 5):MS96-MS100.
10. Jette AM, Haley SM, Ni P. Comparison of functional status tools used in post-acute care. *Health Care Financ Rev.* 2003;24(3):13-24.
11. Nick TG, Williams JM, Barker JR. Descriptive and graphical strategies for assessing change: a case study of functional status in stroke patients. *Top Health Inf Manage.* 1998;18(3):8-17.
12. Dhar A, Ostryzniuk T, Roberts DE, Bell DD. Intensive care unit admission following successful cardiopulmonary resuscitation: resource utilization, functional status, and long-term survival. *Resuscitation.* 1996;31:235-242.
13. Hsu J, Madsen CD, Callaham ML. Quality-of-life and formal functional testing of survivors of out-of-hospital cardiac arrest correlates poorly with traditional neurologic outcome scales. *Ann Emerg Med.* 1996;28(6):597-605.

14. LaPier TK. Functional status during immediate recovery after hospitalization for coronary heart disease. *J Cardiopulm Rehabil.* 2003;23:203-207.
15. Graves JR, Herlitz J, Bang A, et al. Survivors of out of hospital cardiac arrest: Their prognosis, longevity, and functional status. *Resuscitation.* 1997;35: 117-121.
16. DiMattio MJ, Tulman L. A longitudinal study of functional status and correlates following coronary artery bypass graft surgery in women. *Nurs Res.* 2003;52(2):98-107.
17. Fawcett J, Tulman L. Assessment of function. In: McCorkle R, ed. *Cancer Nursing: A Comprehensive Textbook.* 2nd ed. Philadelphia, PA: Saunders; 1996:66-73.
18. Leidy NK, Hasse JE. Functional status from the patient's perspective: the challenge of preserving personal integrity. *Res Nurs Health.* 1999;22:67-77.
19. Barnason S, Zimmerman L, Anderson A, Mohr-Burt S, Nieveen J. Functional status outcomes of patients with a coronary artery bypass graft over time. *Heart Lung.* 2000;29(1):33-46.
20. Wang T. Concept analysis of functional status. *Int J Nurs Stud.* 2004;41:457-462.
21. Guyatt G, Feeny D, Patrick D. Measuring health related quality of life. *Ann Intern Med.* 1993;118: 622-629.
22. Blake RL, Vandiver TA. The reliability and validity of a ten-item measure of functional status. *J Fam Pract.* 1986;23(5):455-459.
23. Ware JE. The Short-form-36 Health Survey. In: McDowell I, ed. *General Health Status and Quality of Life.* 1st ed. New York, NY: Oxford University; 1996:446-455.
24. Ware JE, Kosinski MA, Keller SD. *SF-36 Physical & Mental Health Summary Scales: A User's Manual.* 5th ed. Rev. Boston, MA: Health Assessment Lab; 1994.
25. Haas BK. Clarification and integration of similar quality of life concepts. *Image J Nurs Sch.* 1999;31(3):215-220.
26. Coyne KS, Allen JK. Assessment of functional status in patients with cardiac disease. *Heart Lung.* 1998;27(4):263-273.