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**ASSESSING LEVEL OF FUNCTIONING
IN THE SERIOUSLY MENTALLY ILL**

by

Gwendolyn Watkins Johnson

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A Dissertation Submitted to the Faculty of the

DEPARTMENT OF PSYCHOLOGY

**In Partial Fulfillment of the Requirements
For the Degree of**

DOCTOR OF PHILOSOPHY

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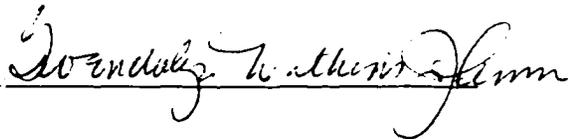
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SIGNED:  Donald W. Keith

DEDICATION

To my loving family, Tom, Malcolm, TJ and Joi, for their perseverance and patience
and to my wonderful parents James and Bertha Watkins
for their incredible encouragement

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ABSTRACT

Level of functioning (LOF) has increasingly become a critical issue within the mental health field. Policy makers use LOF to compare costs and benefits, mental health care organizations use LOF to track client progress and evaluate new treatments, and agencies use LOF to evaluate individuals who are seeking services. Clients with serious mental illness (SMI) are an extremely heterogeneous group in terms of presentation, characteristics, and needs; however a great deal of uniformity exists in their high level of service utilization. This study examines the reliability and validity of a structured clinical interview designed to assess level of functioning in SMI populations. The interview is designed to assess experiences along six dimensions: interpersonal relationships, family living situation, socio-legal issues, medical/physical functioning, role performance, and self care/basic needs. Each scale consists of related questions and problem severity ratings that aid in the assignment of a functional score for each of the six scales. A random sample of 355 interviews was drawn from a larger sample of assessments conducted with SMI clients in Southern Arizona. Three key relationships among the scale's components were investigated: 1) questions to problem severity ratings, 2) questions to functional scores and, 3) problem severity ratings to functional scores. Results of correlation analyses and confirmatory factor analysis provide evidence of internal consistency reliability and convergent and discriminant validity for the structured interview.

INTRODUCTION

Since level of functioning (LOF) is of major importance to the quality of life of the seriously mentally ill (SMI), professionals who serve this group increasingly recognize the need to incorporate measures and instruments of functional assessment into clinical practice. The term 'seriously mentally ill' is used rather loosely but generally refers to groups of individuals who have persistent and severe psychiatric disorders, including schizophrenia, schizo-affective disorder, bipolar disorder, major depression, and some anxiety disorders. The paper provides information related to several key areas related to the assessment of LOF. First, the importance of LOF information is briefly discussed. Second, conceptual and methodological issues that are to be considered when seeking to assess LOF are identified and discussed. A number of assessment instruments are described and used to illustrate a few of the issues that are raised. These instruments were influential in the development of the Arizona Level of Functioning Assessment (ALFA) and in the design of the study. Finally, the results of a study of the psychometric properties of the ALFA are presented.

LEVEL OF FUNCTIONING

Level of functioning (LOF) has increasingly become a critical issue within the mental health field. In this era of greater accountability and competition for mental health funding, policy makers use functional status and other important health outcomes to compare the costs and benefits of competing ways of financing and organizing health care services (Stewart & Ware, 1992). Mental health care organizations track clients' progress over time in hopes of returning them to a higher level of functioning. LOF data are also used by researchers for the purpose of evaluating new treatments and interventions. Finally, level of functioning information is useful for describing those individuals who are seeking services. For planning and policy-making purposes, identification of the SMI population using data gathered from functional assessments would be of great value as states and the federal government struggle to specify which factors to examine in identifying individuals who are SMI. The current SMI population is an extremely heterogeneous group in terms of presentation, characteristics, and needs; however, a great deal of uniformity exists in their high level of service utilization (Taube, Goldman, Burns, et al., 1988). It appears to be widely known among mental health administrators that SMI patients generally constitute only 10-20% of mental health patient populations but as a group, they consume 80-90% of resources available for services (M. Berren, February 14, 2002). Clearly, better identification of the SMI through the use of more precise measures and assessments of functionality would improve diagnosis, prognosis,

treatment, and care. Each of the applications of LOF data is critically important for meaningful and cost-effective delivery of services.

A functional approach to the identification, assessment, and treatment of the SMI has emerged nationwide (Schneider & Struenig, 1983; Massey, 1992). This shift in ideology and approach to treatment corresponds to the findings of mental health research. For example, a positive correlation has been found between a client's level of skilled activities and the important outcomes of recidivism and employment (Anthony, Cohen, & Vitalo, 1978). A number of other studies suggest that client functioning generally is seen as relatively independent of diagnosis and potentially important in predicting length of time in the community and out of the hospital (Skodol, Link, & Shrout, 1988; Seabright & Goldberg, 1992). Functional assessment should focus on the degree to which the individual's abilities and performance meet the demands of his or her home, work, school, family, and social situations (Bedell, Hunter, & Corrigan, 1997). Massey (1992) discusses the utility of LOF assessments not only to assess individual client needs but also to characterize differences among community residential placement facilities. With ever increasing demands on professional staff time, the ability to fill multiple needs with a single assessment would be particularly valuable to service providers.

Although level of functioning is clearly acknowledged as an important outcome in mental health in general and for the SMI in particular, its measurement is riddled with conceptual and methodological issues. What constitutes level of functioning and how it should be measured are major research questions in the field. There are many relevant

issues surrounding the operationalization of LOF. Two such issues are the associated domains of LOF to be included and the multiple perspectives and respondents that are to be considered as one attempts to measure LOF.

Domains

Social Health

Although the importance of social aspects of health is often recognized by research and clinical professionals, this functional domain was historically regarded as being of secondary importance when contrasted with biological and mental functioning. Also, the very concept of social health is less familiar to many lay and professional audiences (McDowell & Newell, 1996). Members of the health professions, however, are now recognizing the importance of social factors as both contextual and determinant influences on client's recovery from illness and maintenance of well-being. Social functioning is most often defined as the ability to develop, maintain, and nurture major social relationships. The three areas of social health most frequently assessed are social adjustment, social roles, and social support.

Mental Health

Clients' subjective assessments of emotional well-being or life satisfaction were historically downplayed in evaluations of functional status. Many scales and instruments are now available to measure psychological health and well-being. The majority of these scales place an emphasis on such areas as emotional distress (e.g., depression, anxiety, anger/hostility), client's primary cognitive or affective orientation (i.e., outlook or

expectancies), and emotional responses to daily experience. These areas are not mutually exclusive, nor do instruments attempt to identify or distinguish specific dimensions of psychopathology. Instead, clients' patterns of psychological adaptation to the environment are assessed.

The notions of psychological distress and well-being are often used as indicators of mental health. Stewart, Ware, Sherbourne, & Wells (1992) describe these terms as pertaining to positive and negative affective states such as feeling happy, peaceful, anxious, depressed, or blue. The focus is on the quality of the feelings themselves and not on making a diagnosis of an affective disorder. The authors also discuss the resolution of two historic issues, affective vs. somatic symptoms and negative vs. positive emotions. In diagnosing mental disorders, the entire syndrome of distress is important, including the somatic aspects. In assessing "general distress and well-being," however, inclusion of somatic problems dilutes its validity. New instruments accordingly focus less on the somatic and more on the affective components of mental health to be appropriate for patient groups as well as general populations.

Historically, measures have focused on negative states such as depression and anxiety. Using such definitions, the best status that can be defined is the absence of distress. However, positive states such as feeling happy, cheerful, interested in life, and peaceful are increasingly being included (Stewart, Ware, Sherbourne, & Wells, 1992).

Physical Health

The measurement of physical health, or conversely, physical disability, has a

lengthy history in health services research. Since the late 1950's, the concepts of disability and physical impairment have been operationalized within numerous activities of daily living (ADL) scales. These scales, developed largely for geriatric and/or chronically ill populations, were limited to more severe levels of disability and had limited application to those clients living in the community. The relationship between physical health and ADL is fairly obvious given that neglect of ADL may produce marked deterioration in physical health status. For many SMI clients, this deterioration is not uncommon. Physical functioning and mobility are both clear indicators of physical health because they pertain to the body and because these limitations are most likely caused by physical health problems (Stewart, 1992).

Wells & Burman (1991) reported that depressed medically ill patients have significantly more bodily pain and functional impairment than do chronic sufferers of medical conditions who have no depressive symptoms. They note that depression is as physically and mentally disabling as the most severe chronic medical disorders. Only advanced coronary artery disease produced more bed disability days than depression, while only arthritis caused more chronic pain. Depression is more disabling than diabetes, hypertension, arthritis, and gastrointestinal or back disorders in terms of reducing a patient's level of physical functioning and interfering with their ability to work, to care for home and family, and to function socially.

Activities of Daily Living

Ability to perform activities of daily living (ADL) is used by many researchers

and clinicians to indicate general health and functional status. However, ADL is not completely synonymous with function. ADL scales usually measure ones' basic human functioning (e.g. eating, sleeping, bathing, and communicating), and range hierarchically upward to higher functions (e.g., ability to dress, to drive a car, to perform household chores, and to go shopping).

Most serious mental illnesses pose a real threat to the acquisition and maintenance of skills associated with ADL, given that illness severity figures prominently in the criteria for making SMI determinations. For example, a person suffering from severe agoraphobia may be just as impaired as a person with active schizophrenia.

The multiple dimensions of LOF include not only the physical, mental, and social dimensions specified by the World Health Organization (1958), but also multiple types of indicators of those dimensions such as functioning within each dimension, symptoms, emotional status, and various diagnoses. The types of indicators interrelate and affect one another. The clinical judgment of mental health professionals may be influenced by patients' functioning and well-being. How people perceive their health depends on their clinical status, functioning, and well-being. Similarly, their functioning depends on their clinical status and feeling states. All of the indicators combine to define the underlying constructs of health (Ware, 1992).

Perspectives

Clinical judgments about client functioning and treatment have been shown to be influenced by a complex array of variables other than client symptoms or current level of

daily functioning reported by the client or significant others. Some of these influences are related to characteristics presented by the client, including demographic and personal characteristics, the presence or absence of family and social supports, and the client's treatment history (Eisenberg, 1979; Newman, 1983; Newman, Heverly, Rosen, Kopta, & Bedell, 1983). Other influences are related to the clinician's level of training (Newman & Rinkus, 1978) and theoretical orientation (Kopta, Newman, McGovern, & Sandrock, 1986); McGovern, Newman, & Kopta, 1986).

Responding to the widespread practice of relying solely on clinician reported outcomes, Widlak, Greenley & McKee (1992) assessed the validity of case manager reports of client functioning in the community by examining correspondence between case manager reports and client reports on a number of widely used indicators of client well-being. The study dealt with a number of indicators including, independent living, income, employment, family contact, and problem behaviors. Indicators of independent living and employment display reasonably good agreement and support the use of case manager reports; however indicators of income and problem behaviors produced lower levels of client-case manager agreement. Johnson (1992) reported similar results for level of agreement between SMI clients and their case managers on a number of quality of life indicators. Establishing the validity of case manager reports is important because this source of client data is increasingly being used to inform policy, in clinical decision making and in research.

Results of a study (Matte, Crisler, Campbell, & Woodruff, 1991) designed to

determine the congruence of clients', facility counselors', and referral counselors' perceptions of the clients' functional level indicated that the three groups had different perceptions of the client in question. The only consistent result was that the clients' perceived themselves as functioning at higher levels than did either of the professional counselor groups.

Increased pressure to adopt more client-centered approaches to clinical care has caused outcome evaluators to place greater emphasis on the client's perspective, incorporating such concepts as patient satisfaction, subjective well being, subjective health status, and quality of life into outcomes measures. Chronic conditions, such as serious mental illness, have predictable and multiple negative impacts on a person's perceived level of functioning and quality of life. Therefore, client outcomes based solely on symptom remission lacks validity for these populations.

The emphasis on clinician reported data continues to be influenced by models of evaluation that assume a scientific positivist approach to measurement and observation. According to this approach, "objective" measurements by unbiased observers (as opposed to the "subjective" measurements obtained from clients) are the only reliable measures of "the way things really are." In contrast to this position, current constructivist theories of evaluation propose that all measurement perspectives and activities are influenced by subjective and contextual factors (Guba & Lincoln, 1989). According to these "fourth generation evaluators," subjective interpretations of the meaning of data are inescapable products of any evaluation activity. Ideally, both objective and subjective measurements

need to be included in the evaluation of level of functioning. Moreover, the validity of outcome evaluations is increased through the use of multiple assessment procedures within outcome domains (Campbell & Fiske, 1959).

LEVEL OF FUNCTIONING MEASURES

Level of functioning assessments are being used more often in recent years by mental health planners and administrators to identify those heterogeneous, individually based and aggregated population needs that are appropriately related to various service settings (Herman & Mowbray, 1991). Mental health systems, however, apply very broad approaches to the assessment of LOF. The divergent needs across and within systems lead to varied interpretations of the standard for LOF instruments. These approaches range from single item summary measures to rating scales consisting of numerous items that cover many dimensions. Instruments have been developed based on purposes of the assessment and the system's ability to collect, analyze, and disseminate information in a timely fashion. Hence, divergent needs have also produced marked differences in instrumentation (Massey, 1991).

Among the instruments referred to in the next few sections, the summary measures are probably the most familiar and most widely used given their presumed simplicity, ease of administration, and low impact on staff time. Multidimensional measures generally include a number of functional domains through multiple-item scales. These measures require a substantial investment of time and human resources but offer the advantage of providing a more detailed description of client functioning in general. Some instruments also provide a better assessment of client strengths and weaknesses as they relate to behavioral functioning and daily living skills.

Global Assessment of Functioning

Axis V of the multi-axial DSM III (1980) employed a seven-point scale to measure patients' highest level of "adaptive functioning" in the past year. A revision of axis V in DSM-III-R (1987) employed the 90 point Global Assessment of Functioning (GAF) to indicate both the clients' highest level in the last year and current level. The GAF was designed to assess "psychological, social, and occupational functioning" and was based on the widely used Global Assessment Scale (GAS)(Endicott, Spitzer, Fleiss, & Cohen, 1976).

Pokorny (1991) provided a discussion of the attractiveness and popularity of summary measures like the GAF and GAS but asserts that even though these measures are widely used, their reliability and validity has not been established. She points out that the mere collection of data does not ensure accuracy, validity, or utility.

Anticipating the revision of Axis V in DSM-IV (1994), Goldman, Skodol, & Lave (1992) examined what was known about axis V and selectively reviewed the literature on measures of social functioning to identify potential alternatives to the GAF. About 25 studies on the use, reliability, and validity of axis V were reviewed. In addition, nearly 30 measures of social functioning were reviewed and analyzed as potential substitutes for the GAF. The analysis focused on the strengths and weaknesses of each measure for assessing functioning on axis V. The authors found that axis V measures were modestly reliable and valid but not widely used. The authors also identified and discussed two particular limitations of the GAF: 1) the combination of measures of symptoms and

measures of social functioning on a single axis and 2) the exclusion of physical impairments from the rating of functioning. Results of the study indicated that none of the measures of social functioning reviewed was clearly superior to the GAF for use on axis V. A modified version of the GAF, separating the measures of social and occupational functioning from the measures of symptoms and psychological functioning, along with a new set of instructions permitting the rating of limitations due to both physical and mental impairments, was proposed for field testing.

Following the recommendation in the previously cited study, Patterson & Lee (1995) field-tested a modified version of the GAF. In DSM-IV, the Social and Occupational Functioning Assessment Scale (SOFAS) was offered as an experimental alternative to the modified GAF and was designed to measure social and occupational functioning independent of psychological symptoms on a scale of 0-100. The SOFAS is a slightly altered form of the modified GAF proposed by Goldman, Skodol, & Lave (1992); the descriptors are briefer, and a rating of superior functioning is possible. According to Patterson & Lee, the results of the study demonstrated convergent and discriminant validity and thereby support the construct validity of the modified GAF. They also suggest that this scale captures multidimensional information about social functioning. Access to and the ability to use transportation, a skill essential to both social and occupational functioning, was the best predictor of scores on the scale. The degrees of social support, current living situation, current potential for violence, and the number of agency referrals were reported to be constructs that theoretically and empirically reflect

dimensions of social functioning. Medication compliance, which accounted for the second largest portion of the variation in scores on the modified GAF, would theoretically and clinically be expected to have substantial influence on social functioning given the clinical severity of subjects in this population (Subjects were outpatients who had been classified as severely and persistently mentally ill.).

Since the SOFAS and the modified GAF are essentially the same scale, the authors were able to provide empirical support for the assertion that the SOFAS measures social functioning independent of psychological symptoms by demonstrating the lack of diagnosis-explained variance. However, in a later study, Roy-Bryne, Dagadakis, Unutzer, & Ries (1996) examined the concurrent validity of the modified GAF and found that ratings were more strongly correlated with ratings of clinical symptoms than with functioning. They caution that reliance on the GAF as the only tool to assess patients' functioning is questionable practice.

Another experimental scale that is offered on axis V in DSM-IV is the Global Assessment of Relational Functioning (GARF). The GARF is used to evaluate the individual's functioning in relationships with family, friends, and significant others. This scale assesses the adequacy of relational functioning on a scale ranging from optimal to disrupted by using the three major content areas of problem solving, organization, and emotional climate. Hilsenroth, et al. (2000) investigated the reliability and convergent and discriminant validity of the DSM-IV GAF and the two experimental scales (SOFAS and GARF). All three scales can be reliably scored ($ICC > 0.74$). A second goal of the

study was to assess the degree to which the two experimental scales measure constructs different from the GAF and from each other. Factor analysis revealed that the clinician and external rater scores for the axis V variables formed two factors and these factors accounted for 86% of the total variance. Clinician and external rater GAF scores demonstrated similar loadings on each of the two factors. The dual loadings suggest that both factors are related to global levels of symptoms and functioning which supports the presence of two subtypes of psychopathology. Further, it appears that the GARF and the SOFAS are more related to the GAF individually than they are to each other and that these two scales are evaluating something different from one another and to a lesser extent different from the GAF. Since the Hilsenroth, et al. study was conducted with patients from a university-based community outpatient clinic, the authors call for an examination of the psychometric properties of these scales with inpatient populations to further support the effectiveness and utility of these axis V scales.

First & Pincus (2002), in recommending text revisions for DSM-IV, call for a clarification of the procedures for making an axis V GAF rating. They comment that the lack of detail on how to use the GAF rating has led to misinterpretations of how to apply the instrument. This recognition among experts and the inconsistent and mixed findings indicate that some caution should be taken when considering using the GAF family of scales.

Colorado Client Assessment Record

The Colorado Client Assessment Record (CCAR) is a problem checklist and

multivariable level of functioning rating scale, originally designed for description of mental health system clients and for use in outcome evaluation. The CCAR consists of 35 items that are divided into four sections: 1) identification of problems and severity, 2) security management assessment, 3) assessment of strengths of resources, and 4) assessment of level of functioning. The CCAR also includes several checklists and allows for the assignment of summary scores in nine areas.

The CCAR has been used in various forms by a number of state mental health authorities, including Arizona. It is also used, in various forms, by numerous programs across the country (Ellis, Wackwitz, & Foster, 1991). A number of studies (Stahler, 1987; Wackwitz, Ellis, & Foster, 1990; Massey, Pokorny, & Kramer, 1989) have sought to analyze the CCAR and other CCAR-based instruments; results have been mixed and inconclusive.

Ellis, Wackwitz, & Foster (1991), in describing the limitations of the CCAR, concede that the instrument is open to rater bias for both the numbers and patterns of problems checked and the LOF ratings. It is also problematic in that only one perspective is considered -- the clinicians'. Johnson (1992) and Massey (1994) found that critical differences exist in perceptions among clients, case managers, and family members in making assessments about functioning. It is therefore imperative that the assessments include the client's perspective if they are to more accurately reflect the client's condition—ideally, the client should be an active participant in the process.

Specific Level of Functioning Scale

The Specific Level of Functioning (SLOF) is a rating scale that was designed to measure more directly observable behavioral functioning and daily living skills of clients in mental hospitals and in the community (Schneider & Struening, 1983). The SLOF proposes a set of critical dimensions on which to judge an individual's level of independent functioning. In an article that introduces the scale, the authors cite the need for behavioral ratings scales for assessing the basic living skills or level of functioning of the mentally ill even though many psychiatric rating scales and measures designed to assess social adjustment exist. Further, there is no agreement about which skill areas the mentally ill must become competent in if they are to function independently.

The SLOF consists of a list of forty-three behavioral items, each of which is to be judged using a number of five-point Likert-type scales. The items are grouped into six areas: physical functioning, personal care skills, interpersonal relationships, social acceptability, activities of community living, and work skills. An additional "other" item provides the rater the opportunity to indicate areas of functioning not covered by the instrument but relevant to a particular client. Following the free response questions is an item designed to capture the degree of confidence being placed by the rater in his or her judgments and one item that allows the rater to comment on his or her interaction with the client.

The developers of the scale note that the SLOF does not include items of traditional psychiatric symptomatology such as "hallucinations" or "flat affect" or clinical

items such as “low frustration tolerance” or “poor attention span” (Schneider & Struening, 1983). These omissions were intentional and stem from a specific philosophical perspective in which LOF stresses observable behavior, as opposed to inferred mental or emotional states, and focuses attention on a person’s skills, assets, and abilities rather than on disabilities or deficits

The SLOF is used by a number of states, including Illinois, New Jersey, and South Carolina, to make determinations about service provision. Few published articles describing the SLOF are available for review. The authors of the instrument (Schneider & Struening, 1983) wrote one such piece that describes several studies of the instrument and its psychometric properties. The studies were conducted using data collected in hospitals and community aftercare agencies. The authors report that the internal consistency reliability of the instrument’s identified subscales “should prove acceptable for studying the functioning of clients in broader areas rather in relation to individual items.” The authors indicate that the subscale scores could also be used by agency administrators and program planners as an aid to determining where clients should be placed, for determining the most appropriate “level” of care, for allocating staff and resources, and for establishing desired interagency referral and program admission patterns by using functioning profiles for types of identified clients.

Recognizing the need for more reliable and valid means of assessing LOF (especially for SMI determinations), the Arizona Department of Health Services (ADHS), in 1992, commissioned a group of mental health professionals to draft a set of criteria for

use in assessing functionality and making diagnoses. The methods for determining LOF (which are loosely based on the CCAR) were examined and found to be open to various sources of error, including: 1) the existence of a great deal of variation between raters as they conduct clinical interviews that results in a mixture of functional standards, descriptions of past disorders, and/or circumstances and other sociological information and 2) the degree of severity identified within functional criteria was heterogeneous and ill defined, leading to the possibility of unreliable and invalid estimates of dysfunction. Given these issues, it was apparent that procedural revisions aimed at increasing the precision and standardization of existing methodology were indicated.

In 1993, representatives from the Department of Behavioral Health Services (DBHS), the Arizona Center for Clinical Management (ACCM), and the University of Arizona developed a structured clinical interview that would yield information on problems and their severity (The client actively participates in the assessment process.). The committee focused on problems within six functional areas and generated specific questions that would allow the rater to assess the severity of the problems. These questions were designed to assess the occurrence and/or frequency of events. The information gathered from the interview would then be used to rate problems and assign functional scores. The resulting scale was called the Arizona Level of Functioning Assessment (ALFA).

The DBHS used the ALFA to gather functional data on 1200 SMI clients who were currently receiving services. To examine the psychometric properties of the ALFA,

355 assessments were randomly selected from the larger sample. A summary of the results of the examination follows.

THEORETICAL CONSIDERATIONS

A number of theoretical considerations were used as a basis for studying the ALFA. First, what are the discriminable common factors associated with the various components (questions, problem severity ratings and functional scores) of the ALFA? Second, what are the quantifiable relationships between the components? Is there a global higher-order common factor that underlies the various components of the ALFA?

To address these questions, a hierarchical approach using correlation analyses and a multitrait-multimethod (MTMM) approach to construct validation using confirmatory factor analysis (CFA) was used. The hypothesized subscale factors are modeled as multiple traits, and the three components of the interview schedule (i.e., questions, problem severity ratings, functional scores) are multiple methods. Mere examination of the MTMM matrix requires numerous judgement calls regarding the interpretation of values within the matrix including: 1) lack of specific criteria for evaluating the magnitudes of similarities and differences among the various elements of the MTMM matrix, 2) lack of specific criteria for selecting particular traits and methods for inclusion in the study, 3) inability of bivariate methods proposed by Campbell & Fiske (1959) to analyze and separately estimate the components of variance (e.g., trait, method, and random variance) of which each "trait-method unit" is composed, and 4) difficulty in interpreting the results of the validation study when the assumptions of the MTMM method proposed by Campbell & Fiske (1959) are not met.

The MTMM Factor Analytic Approach, as described by Figueredo, Ferketich, &

Knapp (1991) makes fully explicit the conceptual relations that are only implicit in the traditional bivariate analysis of the MTMM matrix. The various traits and methods of the MTMM matrix are more tangible as common factors than as abstract organizing principles defining the critical regions of the bivariate correlation matrix and specifying the theoretical interrelationships between them. The direct contributions of these latent traits and method constructs to the scores and intercorrelations are more clearly identified and quantified. For example, whereas the traditional MTMM analysis could do little more than help to detect problems in discriminant validity, the CFA approach permits the identification of their causes by providing more specific diagnoses of the nature of these problems.

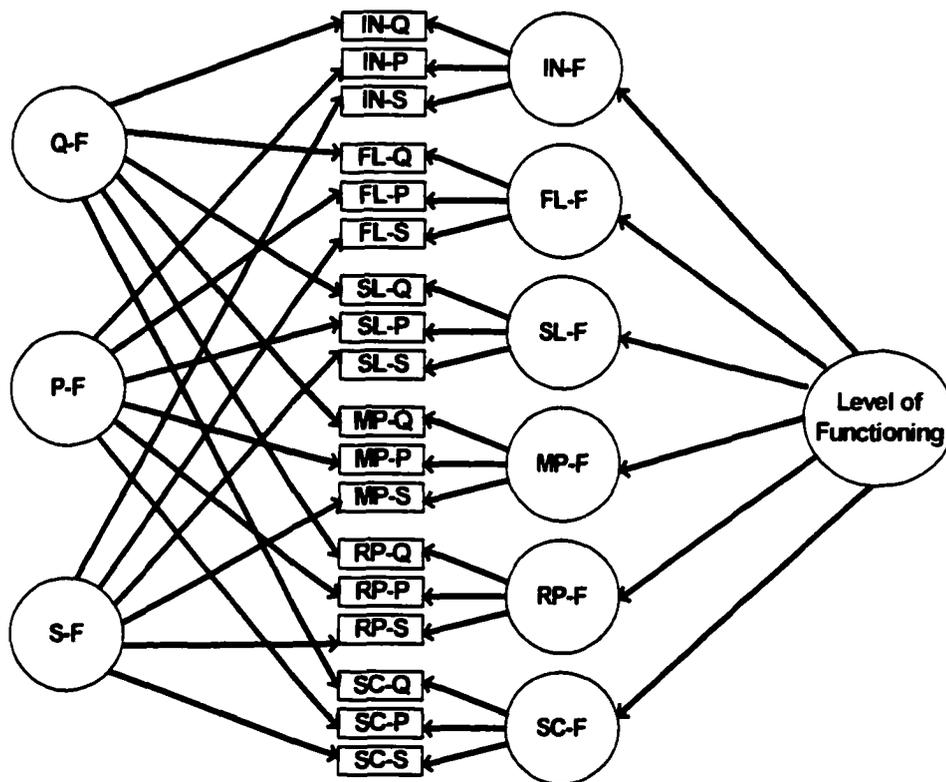
The application of CFA permitted *a priori* testing of hypotheses concerning specific theoretical interpretations as mentioned above. It was hypothesized that these data would yield six lower-order common (trait) factors: interpersonal relationships, family/living situation, socio-legal, medical/physical, role performance, and self-care/basic needs. The CCAR and SLOF, both of which were developed to measure outcomes of health care services in general, were used to guide the identification of the hypothesized trait factors. Three method factors (questions, problem severity ratings, and functional scores) were also hypothesized. Figure 4 illustrates the theoretical model.

Due to the mixed and inconclusive results surrounding the existence of a global higher-order LOF factor (e.g.; the GAF), a test of this hypothesis was included in the study. If such a unitary higher order construct were confirmed, it would serve to unite the

lower-order common (trait) factors. On the other hand, lack of convergence among these trait factors would possibly yield six discriminable factors, or facets of LOF.

The major goal of the study, from a statistical standpoint, was to develop a measurement model which can be used to formulate and test hypotheses regarding the relationship between the manifest or observed variables (indicators) and the unobserved or latent variables (factors).

Figure 1. Theoretical Model



TRAITS	METHODS
IN - Interpersonal	Q - Questions
FL - Family/Living	P - Problem Severity Ratings
SL - Socio-legal	S - Functional Scores
MP - Medical/Physical	
RP - Role Performance	F - Factor
SC - Self-care/Basic Needs	

METHODS

Instrument

The ALFA is a multidimensional structured clinical interview that permits the assessment of six functional areas: 1) interpersonal skills, 2) family/living situation, 3) socio-legal, 4) medical/physical, 5) role performance, and 6) self care/basic needs. Each of the six scales consist of questions that solicit information that is used to: 1) assess the occurrence and/or frequency of observable behavior and daily living skills as opposed to inferred mental or emotional states (see Figure 2 for sample questions), 2) assess problem severity, and 3) assign a functional score. Problems are rated on a four-point scale that ranges from no problem to severe problem (see Figure 3 for sample). Behavioral anchors (see Figure 4 for sample) are provided for each of the functional levels (i.e., above average, average, slight, moderate, and severe).

Subjects

The ALFA was administered to approximately 1200 SMI clients who were currently receiving services through a number of mental health agencies in central Arizona. Case managers from these agencies were trained in the use of the ALFA prior to the assessments. A random sample of 355 of the completed interview schedules was used in the study.

SMI status was based on the Arizona Checklist for Seriously Mentally Ill Determination (See Appendix A). The seriously mentally ill are defined as those adult

FIGURE 2. Sample Interview Questions

How many times in the last month did you:

	None	1-2	3-5	5+
Visit or speak with your co-workers	[]	[]	[]	[]
Share positive things that happened to you with your co-workers	[]	[]	[]	[]
Have problems with your co-workers	[]	[]	[]	[]
Help a co-worker	[]	[]	[]	[]

During the last month have you been able to:

	Yes	No
Use public transportation	[]	[]
Go shopping for basic items	[]	[]
Perform household chores	[]	[]
Prepare or obtain own meals	[]	[]

FIGURE 3. Sample Problem Severity Rating

	No Problem	Minor Problem	Moderate Problem	Severe Problem
Manage money	[]	[]	[]	[]
Earn money	[]	[]	[]	[]
Do household chores	[]	[]	[]	[]
Follow a schedule	[]	[]	[]	[]
Prepare adequate meals	[]	[]	[]	[]
Maintain personal hygiene	[]	[]	[]	[]
Dress appropriately	[]	[]	[]	[]

FIGURE 4. Sample Anchors for Assigning Functional Score

Score range	Behavioral anchors	
0-10	above average	
11-20	average	maintains basic needs
21-30	slight	mild disruption
31-40	moderate	frequent disruption
41-50	severe	serious disruption/incapacitation

persons whose emotional or behavioral functioning is so impaired as to interfere with their capacity to remain in the community without supportive treatment. The mental impairment is severe and persistent and may result in a limitation of their functional capacities for primary activities of daily living, interpersonal relationships, homemaking, self-care, employment, or recreation. Although persons with primary diagnoses of mental retardation or organic brain syndrome frequently have similar problems or limitations, they are not included in this definition.

Statistical Analyses

The ALFA was constructed to strengthen the relationship between interview questions and problem severity ratings (referred to as R1). Given this approach, there should be relatively strong statistical relationships between questions and corresponding problem severity ratings. It is assumed that the other two relationships (i.e., questions to assigned functional scores and problem severity ratings to assigned functional scores, referred to as R2 and R3, respectively) should also be affected.

Since it was not possible to simultaneously analyze the individual items (n=224) within a single multivariate model, a hierarchical analytic strategy consisting of three phases was used. The first two phases were essentially data reduction techniques. The final phase was a test for convergence. SAS (SAS Institute, 1989) and EQS (Bentler, 2002) were used for the analyses.

Phase 1. Correlation coefficients for each group of subscale items were computed and output by SAS (PROC CORR) and used to grossly examine the relationships among

the scale's components. This procedure guided decisions about which items to retain for further analyses – a number of items that were weakly correlated with other items and/or conceptually inappropriate were excluded. The remaining items were rationally grouped by subscale and type, and item-total correlations and alpha coefficients were computed and output by SAS (PROC CORR).

Phase 2. The results of the correlation analysis were used to rationally assign items to hypothesized subscale factors. Using the means of the standardized item scores of the questions and problem severity ratings on each subscale, SAS (PROC STANDARD and DATA) was used to compute unit weighted factor scores (Gorsuch, 1983) for selected questions and problems severity ratings. The unit weighted factors scores for each subscale provided a means to further examine the interrelationships between the scale's components. The direct contributions of the questions and problem severity ratings to the functional scores and intercorrelations were more clearly identified and quantified.

Phase 3. The unit weighted factor scores for the questions and problem severity ratings, and the functional scores were modeled as hypothetical factors and tested for convergent validity using CFA (Ferketich, Figueredo, & Knapp, 1991; Figueredo, Ferketich, & Knapp, 1991). CFA also permitted a test of discriminant validity among the six trait factors and the three method factors.

RESULTS

Internal Consistency Reliability

Table 1 displays the alpha coefficients that were used to assess the internal consistency for each of the six subscales. Cronbach's coefficient alpha provided a measure of reliability for each of the subscales as well as individual item-total score correlations to determine the relative contribution of each question or problem severity rating of the subscale to the subscale as a whole. The reliability coefficients for the questions ranged from .77 to .85. The 'question' subscales may be ranked from highest to lowest reliability as follows: medical/physical (MP), interpersonal (IN), socio-legal (SL), family/living (FL), self-care/basic need (SC), and role performance (RP). Highest to lowest reliability for the 'problem' factors were as follows: SC, IN, SL, RP, FL, and MP; the range of the reliability coefficients was .78 to .94.

The item-total correlation coefficients associated with the alpha coefficients were quite varied across the items as expected (See Appendix B). These coefficients can guide decisions about how the instrument is to be modified. For example, the coefficients related to two questions on the MP subscale that assess for alcohol abuse are the same (.44). The same finding holds for two questions related to drug abuse ($r = .63$ and $.64$). Given the similarities of the relative contributions that these pairs of questions make to the subscale, it appears that two questions could possibly be eliminated from the ALFA. There are a number of other instances across the subscales where it will be beneficial to compare the relative contributions of items with an eye to creating a more parsimonious

TABLE 1. Alpha Coefficients for Questions and Problem Severity Ratings

	<u>Questions</u>	<u>Problems</u>
Interpersonal	.84	.90
Family/Living	.81	.86
Socio-legal	.84	.88
Medical/Physical	.85	.78
Role Performance	.77	.87
Self-care/Basic Needs	.77	.94

instrument.

Table 2 displays the MTMM matrix for the unit weighted factor scores (six sets each for questions (Q) and problem severity ratings (P) and the raw functional scores (S) for each subscale (S). The unit weighted factor scores permitted the examination of the relationships between Q and P (R1), between Q and S (R2), and between P and S (R3) in a more meaningful way. The highlighted cells along the first diagonal at the top of the matrix display the reliability coefficients for Q and P (the functional scores represented by S are single indicators). The validity diagonals for each of the three relationships are also highlighted.

Correlation coefficients for R1 across the subscales were in the low to moderate range (.15 to .46); the coefficient for SL was markedly weak. With respect to R2, only three question factors (INQ, FLQ and SCP) correlated with their respective functional scores – the coefficients ranged from -.31 to -.50). As for R3, all of the problem factors were correlated with their respective functional scores – there were strong correlations on IN (-.80), FL (-.73), SL (-.71), and MP (-.68).

Construct Validity

Figure 1 (presented previously) represents the theoretical model – all the paths as hypothesized are included. Eighteen unit weighted factors, rationally grouped into sets of three, are modeled as subjective indicators of six hypothesized ‘trait’ factors (i.e.’ interpersonal, family/living, socio-legal, medical/physical, role performance, and self-care/basic needs). The unit weighted factors scores associated with the questions, the

TABLE 2. Multitrait-Multimethod Matrix for Questions, Problems Severity Ratings and Functional Scores

	INQ	FLQ	SLQ	MPQ	RPQ	SCQ	INP	FLP	SLP	MPP	RPP	SCP	INS	FLS	SLS	MPS	RPS	SCS	
INQ	.84																		
FLQ	.29	.81																	
SLQ	-.05	-.02	.84																
MPQ	-.11	-.00	-.07	.85															
RPQ	.05	.09	-.11	.08	.77														
SCQ	.28	.28	-.00	-.03	-.04	.77													
INP	.46	.27	.00	.13	.09	.16	.90												
FLP	.18	.21	-.14	.17	.07	.04	.51	.86											
SLP	.10	.24	-.15	.13	.08	.17	.35	.38	.88										
MPP	.04	-.00	.02	.23	-.02	.13	.37	.35	.25	.78									
RPP	.15	.24	.07	.16	.22	.12	.49	.44	.57	.30	.87								
SCP	.25	.26	-.03	.06	.11	.43	.50	.43	.34	.39	.59	.94							
INS	-.44	-.26	-.01	-.01	-.05	.21	-.80	-.48	-.34	-.37	-.44	-.44	1.00						
FLS	-.31	-.31	-.37	-.07	-.08	-.16	-.60	-.73	-.37	-.28	-.45	-.40	.68	1.00					
SLS	.15	-.24	.15	-.12	-.15	-.16	-.35	-.32	-.71	-.10	-.52	-.27	.42	.45	1.00				
MPS	-.18	-.10	-.01	-.18	-.04	-.03	-.38	-.33	-.27	-.68	-.31	-.34	.49	.46	.31	1.00			
RPS	-.01	-.23	.05	-.02	-.01	-.32	-.38	-.30	-.30	-.17	-.30	-.30	.48	.48	.44	.41	1.00		
SCS	-.50	-.27	.03	-.04	-.03	-.50	-.40	-.32	-.30	-.32	-.32	-.30	.52	.48	.35	.45	.67	1.00	

problem severity ratings, and the raw functional scores are modeled as hypothesized 'method' factors.

Table 3 provides fit indices for the accepted model. The NFI and CFI (.883 and .926, respectively) suggest that the model is acceptable for practical purposes (Bentler & Bonnet, 1980) and that it fits the data fairly well. The RMR and RMSEA (.081 and .093, respectively) are within the acceptable range.

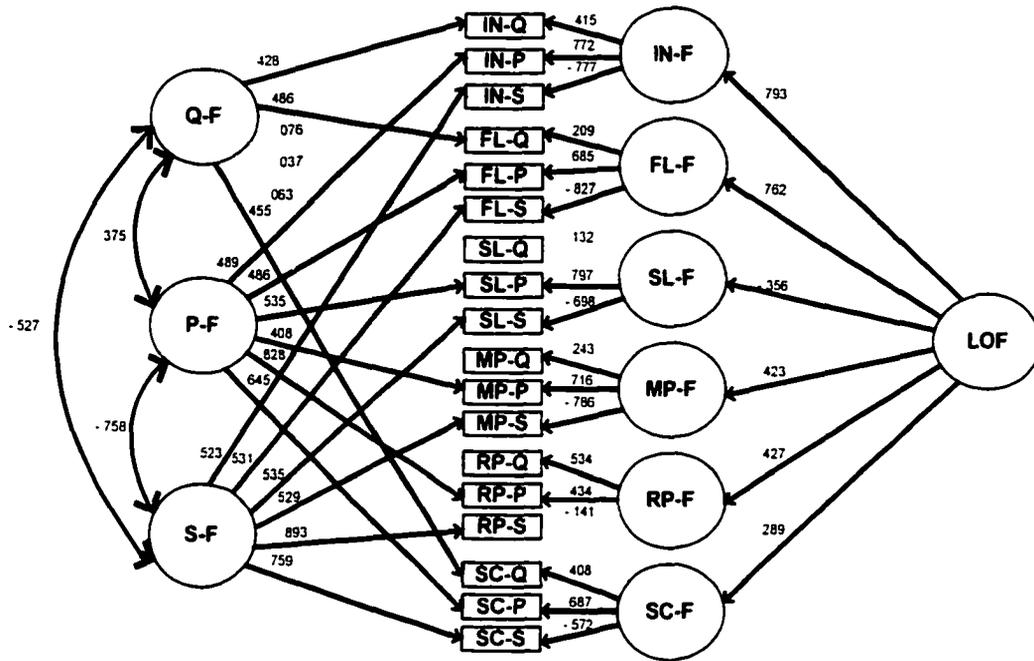
Figure 5 displays the accepted model. The solid arrows indicate significant paths (37) while the ghostly arrows indicate those paths (3) that were nonsignificant. The factor loadings for the trait and method factors and factor intercorrelations for the method factors are reported in Table 4. All factor loadings are expressed as standardized regression coefficients. The underscore denotes statistical significance. The negative signs preceding the factor loadings for the score (S) indicator variables on the trait factors and SL-F loading on the LOF factor indicate decreasing LOF as the scores increase.

The homogenous nature of the trait factor loadings indicates good convergent validity among the indicators. The convergent validities on the trait factors are generally high and consistent. The nonsignificant loading of SL-Q on SL-F is probably due to the fact that many of the questions (which were mostly dichotomous) on this subscale were irrelevant for the sample— only 16% had had any involvement with the legal system. There was also a nonsignificant loading of RP-S on RP-F for similar reasons. While 63% of respondents reported not having worked for a least one year (80% had not worked within the past month), 52% of the functional scores were in the moderate to severe in

TABLE 3. Fit Indices for Accepted Model

Bentler-Bonett Normed Fit Index (NFI)	.883
Comparative Fit Index (CFI)	.926
Standardized Root Mean-Square Residual (RMR)	.073
Root mean-square error of Approximation (RMSEA)	.081
90% Confidence Interval of RMSEA	.069 -0.93

FIGURE 5. Accepted Model



TRAITS	METHODS
IN - Interpersonal	Q - Questions
FL - Family/Living	P - Problem Severity Ratings
SL - Socio-legal	S - Functional Scores
MP - Medical/Physical	
RP - Role Performance	F - Factor
SC - Self-care/Basic Needs	

TABLE 4. Factor Loadings for Accepted Model

Variable	TRAIT						METHOD		
	IN-F	FL-F	SL-F	MP-F	RP-F	SC-F	Q-F	P-F	S-F
IN-Q	<u>.415</u>						<u>.428</u>		
IN-P	<u>.772</u>							<u>.489</u>	
IN-S	<u>-.777</u>								<u>.523</u>
FL-Q		<u>.209</u>					<u>.486</u>		
FL-P		<u>.685</u>						<u>.483</u>	
FL-S		<u>-.827</u>							<u>.531</u>
SL-Q			.132				.076		
SL-P			<u>.797</u>					<u>.529</u>	
SL-S			<u>-.698</u>						<u>.535</u>
MP-Q				<u>.243</u>			.037		
MP-P				<u>.716</u>				<u>.408</u>	
MP-S				<u>-.786</u>					<u>.529</u>
RP-Q					<u>.534</u>		.063		
RP-P					<u>.434</u>			<u>.828</u>	
RP-S					<u>-.141</u>				<u>.893</u>
SC-Q						<u>.408</u>	<u>.455</u>		
SC-P						<u>.587</u>		<u>.645</u>	
SC-S						<u>-.572</u>			<u>.759</u>

Intercorrelations for Method Factors

Q-F	1.00		
P-F	.375	1.00	
S-F	-.527	-.758	1.00

TRAITS	METHODS
IN - Interpersonal	Q - Questions
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terms of dysfunction. Further, roughly 60% of respondents received a 'no problem' rating across the items used to rate problem severity on the RP subscale.

All six of the trait factors converged on the hypothesized higher-order LOF factor in a consistent manner. Hence, a latent construct unites the six trait factors. IN-F had the highest loading (.793) followed by FL-F (.762), RP-F (.427), MP-F (.423), SL-F (.356) and SC-F (.289).

Two of the three method factors (P-F and S-F) display excellent convergent validity with statistically significant and generally high factor loadings across the board. The Q-F factor was sketchy given that three of the six paths were nonsignificant. This finding (combined with results from the correlation analysis) suggests that the questions associated with SL, MP, and RP need to be examined and reworked.

P-F and S-F were highly correlated (-.758) while Q-F/S-F and Q-F/P-F were moderately correlated (-.527 and .375, respectively). The high correlations between problem severity ratings and scores are indicative of practice effects given that the case managers who completed the assessments had had some experience with these methods for rating client functioning and in most cases the clients were well known to them.

DISCUSSION

The creation of Arizona Level of Functioning Assessment (ALFA) was driven by a need for more reliable and valid means of assessing LOF in the SMI. The ALFA was designed to measure behavioral functioning and daily living skills. The findings of this study suggest that the ALFA has good internal consistency reliability and that establishing construct validity is plausible. For the sample of SMI clients that was studied, level of functioning may be conceptualized as a unitary higher-order that underlies six LOF facets or trait factors: interpersonal relationships, family/living situations, socio-legal issues, physical/medical functioning, role performance, and self-care/basic needs. These factors, which represent the instrument's subscales may provide a comprehensive framework in which decisions about specific services to the SMI may be formulated.

At the program level, the ALFA may be used by agency administrators to identify clients with similar needs. Ratings along the various dimensions could be used to develop programs or to assign clients to existing services relative to their needs. The demonstrated reliability of the ALFA's subscales allow for studying the functioning of clients in broader areas, rather than in relation to individual items. The subscales scores could also be used by program planners to aid in making determinations about the most appropriate level of care and to allocate resources.

Ratings on individual items of the ALFA may be used to pinpoint problem areas for clients and to plan treatment. One of the first criticisms of the ALFA however, was

its length. Results of the correlation analysis will be extremely useful in refining the interview portion of the instrument. Further, the sketchy convergence on the question factor points directly to the three subscales that are in need of the most work. It is clear that some questions may be eliminated while others need to be refined in order to optimize the measurement of the variables of interest.

The higher-order 'level of functioning' factor suggests that a latent construct serves to unite the six subscale factors. While this latent construct may represent one of a number of single traits, two possibilities will be explored in future research on the ALFA. Perhaps the functional skills measured by the ALFA are of sufficient complexity that they are dependent upon the subjects having adequate functionality in a variety of more basic skills. If there is impairment along the requisite lower-order domains then the impairment would be displayed across a broad array of higher-order functional skills, thus producing a correlation among the higher-order abilities. Since these clients are generally known to their respective case managers, the notion that a halo effect underlies the six facets is also quite plausible. Client typologies based on diagnostic information, level of impairment and other variables could be developed and used to test the model's stability across client types and thus shed some light on the higher-order factor. Given the import that is attached to summary scores in many mental healthcare settings, an empirically derived means for assigning such scores would also be valuable.

It is clear that more research is needed in order to refine the ALFA. A test of the instrument's interrater reliability would provide evidence of stability across different

types of raters (e.g., and other mental health professionals, lay persons, and clients).

Further tests of the ALFA's validity are also indicated. Evidence of predictive validity could be obtained by determining whether scores on the ALFA can predict service utilization and service costs.

As the focus on outcomes of mental health care is increasingly geared toward the ability of the client to perform daily activities and their feelings about those activities, so the need to better assess LOF increases. The procedures that should be employed to ensure reliability and validity of measures mirror those that ensure the provision of effective clinical services. The effectiveness of clinical services is, or should be, ensured through two complementary procedures -- quality assurance and program evaluation. Quality assurance procedures are implemented to determine that appropriate clinical procedures are followed, and program evaluations are conducted to determine if the application of the clinical procedures is effective. Extending these notions to the assessment process, quality assurance procedures must be put in place to facilitate appropriate data collection procedures, and program evaluation must be put in place to test whether these procedures were effective in producing the desired results of accurate data (Porkorny, 1991).

CONCLUSION

The focus on level of functioning in the seriously mentally ill over the past few decades has been intense. The intensity has mostly been fueled by the dramatic shifts in service provision (or the lack) to this patient population. The process that has come to be known as deinstitutionalization has led to more humane and therapeutic care for the SMI by some accounts and to serious and far-reaching problems by most accounts. What has become clear however, is the importance of client LOF for the treatment planning and evaluation process. LOF measures capture important client perspectives on health and daily living, and add to the validity of evaluations of treatment effectiveness. Both client-reported and family or significant other reported outcomes are increasingly recognized as valid indicators of clinical outcomes and have particular relevance to the consumers of treatment.

During this age of managed care, it is also extremely important to understand the costs of treatment services as they relate to incremental improvements in client functional status. Cost-benefit and cost-effectiveness studies also need to incorporate the client and family perspectives (vis a vis LOF measures) in their definitions of desired outcomes.

APPENDIX A

ARIZONA DEPARTMENT OF HEALTH SERVICES/DIVISION OF BEHAVIORAL
HEALTH SERVICES

CHECKLIST FOR SERIOUSLY MENTALLY ILL DETERMINATION

I. DEFINITION OF SERIOUSLY MENTALLY ILL

The seriously mentally ill are defined as those adult persons whose emotional or behavioral functioning is impaired as to interfere with their capacity to remain in the community without supportive treatment. The mental impairment is severe and persistent and may result in a limitation of their functional capacities for primary activities of daily living, inter-personal relationships, homemaking, self-care, employment, or recreation. The mental impairment may limit their ability to seek or receive local, state or federal assistance such as housing, medical and dental care, rehabilitation services, income assistance and food stamps, or protective services. Although persons with primary diagnoses of mental retardation or organic brain syndrome frequently have similar problems or limitations, they are not included in this definition.

II. CHECKLIST CRITERIA

The client must meet ONE of Part A or TWO of Part B criteria.

OR

The client must meet ONE of Paragraph A and quality under Part C criteria.

A. Diagnostic and Treatment Criteria

1. A diagnosis (or diagnoses) that meets the DSM-III-R criteria for a:

Schizophrenic Disorder (295.1, 295.2, 295.3, 295.6, 295.9.

Delusional Disorder (297.10)

Psychotic Disorder Not Elsewhere Classified (289.70,
295.90 only)

Mood Disorder

Bipolar Disorder (296.4, 296.5, 296.6, 296.7, 301.13)

Depressive Disorder (296.2, 296.3, 300.40, 311.00)

Arizona Checklist for Seriously Mentally Ill Determination (Cont')

Anxiety Disorder (excluding social phobia or simple phobia) (300.00, 300.01, 300.02, 300.21, 300.22, 300.30, 309.89 only)

Personality Disorders (excluding anti-social personality disorder 301.70)

2. A DSM-III-R Diagnosis as described in A1, and continuous treatment in one, or a combination of the following modalities:

In patient	Partial Hospitalization
Skilled Nursing Care	Intermediate Nursing Care

3. A DSM-III-R Diagnosis as described in A1, and six months continuous residence in one of the following:

Residential Program	Supervisory Care Home
Transitional Program	Boarding Home

4. A DSM-III-R Diagnosis as described in A1, and two or more admissions to any of the above modalities within a twelve month period.
5. A DSM-III-R Diagnosis as described in A1, with an active case history in an outpatient modality, and a history of at least one mental health psychiatric hospitalization.
6. A DSM-III-R Diagnosis as described in A1, indicating a need for treatment of at least one year's duration in an outpatient or day treatment modality.

B. Impaired role Functioning:

In addition to one of the preceding, the client will satisfy at least TWO criteria, numbers 1 through 8, or meet the condition in Paragraph C, below.

1. Unemployed or has limited job skills and/or a poor work history.
2. Employed in a sheltered work setting.
3. Requires public financial assistance for maintenance and/or requires help to seek assistance.

Arizona Checklist for Seriously Mentally Ill Determination (Cont')

4. Does not seek appropriate supportive community services without assistance.
5. Lacks supportive social systems in the community (i.e., no close friends or group affiliations, lives alone, is high transient).
6. Requires assistance in basic life and survival skills (must be reminded to take medication, must have transportation to mental health clinic and other supportive services, needs assistance in self-care, household management, etc.).
7. Exhibits inappropriate or dangerous social behavior which results in demand for intervention by the mental health and/or judicial/legal system.
8. Is placed in a nursing home or boarding home setting due to financial considerations and/or because a less restrictive suitable environment is not available.

C. The client does not meet any of the functional criteria at present, but has a history of functional impairment at the required level with the assumption that reversion would occur without medication and/or therapeutic intervention.

This checklist is to be filed in the client file of all clients determined to be chronically mentally ill.

TOTAL NO. OF CRITERIA MET

DSM-III-R Diagnostic Code _____	Part A _____
Date of Diagnosis _____	Part B _____
Diagnostician _____	Part C _____

PERSON COMPLETING CHECKLIST	TITLE	DATE
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APPENDIX B

Standardized Alpha and Item-Total Correlation Coefficients (r) for the Subscale Questions and Problem Severity Ratings

<i>Questions</i>		
Subscale and Item	Alpha	r ^a
<i>Interpersonal</i>	.84	
Number of close friends		.55
Build relationships		.35
Visit/speak with friends		.64
Share with friends		.71
Problems with friends		-.26
Support of friends		.61
Go out in crowds		.50
Attend church		.34
Meet with social group		.48
Help a friend		.63
Sports with others		.35
Attend self-help group		.35
Discuss personal problem		.61
Pleasure with friends		.66
Help from others		.53
<i>Family/Living Situation</i>	.81	
Living with other people		.28
Own a pet		.21
Contact with spouse/partner		.46
Contact with children		.40
Contact with parents		.37
Contact with relatives		.40
Pleasure with spouse/partner		.55
Pleasure with children		.47
Pleasure with parents		.36
Pleasure with relatives		.35
Share with spouse/partner		.55
Share with children		.51
Share with parents		.46
Share with relatives		.34
Support of spouse/partner		.54
Support of children		.50
Support of parents		.46
Support of relatives		.38

^aProcedurally, the effect of each item was removed from the total score when each item-total score correlation was calculated.

Standardized Alpha and Item-Total Correlation Coefficients (r) for the Subscale Questions and Problem Severity Ratings (Continued)

Subscale and Item	Alpha	r ²
Socio-legal	.84	
Police involvement		.85
Driving under the influence		.81
Traffic related incident		.70
Public intoxication		.86
Drug possession		.77
Danger to others		.76
Domestic violence		.77
Danger to self		.82
Theft		.82
Vagrancy/loitering		.81
Disturbing the peace		.77
Taken to jail		.44
Fencing		.26
Pimping		.19
Prostituting		.12
Committing a felony		.12
Criminal proceeding		.34
Medical/Physical	.85	
Problems with vision		.20
Limitations with vision		.28
Problems with hearing		.30
Limitations with hearing		.18
Problems with teeth		.17
Problems with walking		.25
Seen medical doctor		.20
Seen dentist		.21
Disagree with doctor		.35
Medications for physical problem		.16
Forgot to take medication		.36
improper dose of medication		.24
Head injury		.40
Eating binges		.30
Weight problems		.31
Alcohol abuse		.44
Serious problems with alcohol		.44
Lots of time drinking		.52
Drug abuse		.63
Lots of time using drugs		.64

Standardized Alpha and Item-Total Correlation Coefficients (r) for the Subscale Questions and Problem Severity Ratings (Continued)

Subscale and Item	Alpha	r ^a
Role Performance	.77	
Physically unable to work		.25
Out sick		.24
Fired or laid off		.44
Work hours cut back		.46
Unable to find work		.23
Missed work due to mental illness		.41
Hired in new job		.52
Fired		.48
Quit job		.27
Unemployed/laid off		.43
Promotion		.24
Demotion		.15
Trouble with boss		.50
Visit/speak with coworkers		.53
Share with coworkers		.33
Problems with coworkers		.42
Help coworker		.31
Self-care/Basic Needs	.77	
Use public transportation		.39
Go shopping for basics		.54
Perform household chores		.59
Prepare or obtain meals		.58
Maintain healthy diet		.45
Walk and get around		.41
Dress neatly in clean clothes		.45
Maintain personal hygiene		.47
Manage own money		.37
Money available is adequate		.11
<i>Problem Severity Ratings</i>		
Subscale and Item	Alpha	r ^a
Interpersonal	.90	
Problems with friends		.69
Problems establishing relationships		.81
Problems maintaining relationships		.84
Lacks social skills		.78

Standardized Alpha and Item-Total Correlation Coefficients (r) for the Subscale Questions and Problem Severity Ratings (Continued)

Subscale and Item	Alpha	r ^a
Family Living	.86	
Problems with primary partner		.63
Problems with other relatives		.63
Parenting problems		.62
Family instability		.72
Family violence		.58
Neglect and abuse		.67
Socio-legal	.88	
Disregards rules		.73
Dishonest		.74
Resistive		.74
Belligerent		.67
Cons others		.64
Offenses against persons		.65
Offenses against property		.68
Current legal problems		.40
Medical/Physical	.78	
Acute illness		.55
Chronic illness		.64
Permanent disability		.62
Nutrition/weight		.55
Eating disorder		.35
CNS disorder		.40
Role Performance	.87	
Absenteeism		.63
Termination or expulsion		.66
Performance problems		.71
Behavior problems		.73
Manage personal environment		.73
Self-care/Basic needs	.94	
Provide own food		.79
Provide own clothing		.80
Provide own housing		.72
Provide own transportation		.78
Manage money		.75
Earn money		.61
Do household chores		.77

Standardized Alpha and Item-Total Correlation Coefficients (r) for the Subscale Questions and Problem Severity Ratings (Continued)

Subscale and Item	Alpha	r²
Follow a schedule		.71
Prepare adequate meals		.75
Maintain personal hygiene		.76
Dress appropriately		.73
Obtain health care		.71
Make reasonable decisions		.70

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