An Occupational Therapy Approach to Assessing Psychiatric Patients’ Adaptive Functioning

(model of human occupation, occupational therapy, research)

Frances Oakley  Gary Kielhofner  Roann Barris

This study focused on the relative utility of the model of human occupation for occupational therapy assessment of persons having mental disorders. The organizational status of the human system and its relationship to adaptive level of functioning and degree of symptomatology were examined in a sample of 30 adult psychiatric patients. We used a six-test assessment battery developed for this study, which was based on the model of human occupation, to measure the organizational status of the following components of the human system: locus of control, goals, temporal orientation, interests, roles, and skills. Subtests of the American Association on Mental Deficiency (AAMD) Adaptive Behavior Scale and the Modified Brief Psychiatric Rating Scale were used to measure adaptive level functioning and symptomatology, respectively. When we compared organizational status with psychiatric diagnosis and symptomatology, we found organizational status to be the more significant index of adaptive level of functioning.

In the past, occupational therapy has been strongly influenced by and has adopted medical model perspectives on mental health. These perspectives emphasize a disease orientation in which adaptive functioning is viewed as the result of a psychiatric disease (as diagnosed), which is manifested by symptoms. Implicit in this view is the idea that when the disease and symptoms are controlled or ameliorated, adaptive functioning will naturally increase.

An alternative view conceptualizes adaptive functioning as influenced by an individual’s organizational status, as measured by the individual’s skills, habits, roles, interests, occupational values, and feelings of competence. This view is captured in the model of human occupation. This model is a specific occupational therapy approach to explain an individual’s adaptive function or lack thereof.

The viability of occupational therapy in mental health may ultimately depend on the field’s ability to articulate and apply an approach to treatment which complements but differs from that of medicine; therefore, this study examined the utility of an assessment developed to provide an index of adaptive functioning based on the model of human occupation.

Review of the Model of Human Occupation

The model of human occupation conceptualizes human beings as open systems that interact with their environments (1–4) via a cycle of intake (the incorporation of information from the environment), output (action in the environment), feedback (receiving information concerning the process)

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and consequences of action), and throughput (internal reorganization). Once the system's internal organization is changed in the throughput process, the new output is different and generates new feedback, which can further change the system. The cycle of output, feedback, intake, and throughput results in an ongoing process of change. The internal organization of the system determines how a system will function in a given environment. This throughput is reflected in three subsystems (volition, habituation, and performance) and their interrelationships (1-4). These subsystems are organized into a hierarchy. Volition is the highest governing subsystem, and performance the lowest. Volition, which is based on an urge to explore and master, refers to an individual's decision to engage in occupation. How a person will act on that urge depends on internal images referred to as personal causation, values, and interests. In the case of mental disturbance, these images may be disrupted or disorganized, leading to a disruption of occupation that contributes to further maladaptation (1-4).

The second subsystem, habituation, refers to the patterning and regulating of everyday routine behavior and has habits and roles as its components. The third subsystem, performance, is responsible for producing action and is made up of skills. Disorganization in the volition and habituation subsystems can also disrupt performance. In the following section, we review literature which supports the premise that disturbances in the volition, habituation, and performance subsystems are present in people having psychiatric problems. This review focuses on variables incorporated into the assessment approach that we developed.

**Personal Causation**

Personal causation—the collective beliefs that an individual has efficacious skills, is personally in control, and will succeed in future endeavors—is crucial to the individual's emotional well-being and competent performance. The extent to which an individual feels externally controlled (i.e., control by others or by fate as opposed to personal control) is associated with the degree of psychological disturbance (5-10). In general, individuals who do not believe that they are in control of their lives are less likely to be well adjusted, socially competent, or content with life (8, 10-12). They tend to perceive themselves as inactive, dependent, and ineffective (11). Moreover, they are likely to have irrational values and be prone to mood disturbances (10). The comitants of mental disturbance have been identified as the expectancy of failure and a belief in personal ineffectiveness (15).

**Values**

Values are a person's internalized images of what is good, right, and desirable to do (14). The development of an adaptive set of values depends on the ability to sort through and integrate the prevailing cultural value definitions into a way of life (15) and to establish priorities among values that guide action (3, 15, 16). Two dimensions of values are temporal orientation and goals (1-4).

Temporal orientation refers not only to a person's belief about how time should be spent but also to an individual's degree of orientation to the past, present, and future (14). Belief in the future, or future temporal perspective, is crucial to adaptation (17, 18). Future temporal perspective and the ability to identify goals are interwoven. Consideration of the future in the context of anticipating or expecting certain events or occurrences gives meaning to life and provides a framework for organizing the present (19). Without a belief in the future, an individual is unable to work toward goals.

There appears to be a positive correlation between the degree of psychological disturbance and a distorted temporal perspective (20, 21). The psychotic person may experience a loss of control over the future as future images and goals become disorganized and confused (20, 21). People who are depressed may experience the past as distant and removed, the present as stagnant, and the future as hopeless and menacing (20). People with character disorders typically adopt deviant temporal conceptions and are incompetent in following through on long-term plans and goals (20). Because of fear of unanticipated events, obsessive-compulsive people maintain a rigid routine (20). Thus, mental disturbance, temporal orientation, and future goals appear intimately interrelated.

**Interests**

Interests refer to the propensity to derive pleasure from certain objects, people, or events (3, 22). Interests organize behavior by prioritizing choices of activities (17). People with emotional disturbances may not pursue interests (13); also, research has shown that long-term psychiatric hospitalization leads to a loss of interest in activities (23-29).

**Roles**

Internalized roles refer to the belief that a person has and is obligated to perform behaviors rele-
vant to a certain status or position in some group (14). Maladaptation can occur when a) a person has failed to internalize roles to guide behavior, b) the internalized roles are incompatible with values, interests, and personal causation, or c) there is conflict or inconsistency between internalized roles (3, 13).

Incapacity for role performance is conceptualized as a major impetus for psychiatric hospitalization (30, 31). Further, hospitalization can contribute to a deterioration of role performance (32-34). In addition, people labelled mentally ill often find themselves cast in deviant roles, with the expectation of others that they are unfit for normal role performance (13, 35). This process may further exacerbate problems of internalized roles. Thus, an association between problems in internalized roles and psychopathology is probable.

Skills

Skills are the abilities to produce purposeful action in the world (3). There are three types of skills: neurological, musculoskeletal, and symbolic (14). Competent behavior requires integrating these skills into competent action. Mentally disturbed people exhibit deficits in a range of skills (36-39). These deficits have been attributed to faulty symbols from poor learning (13) as well as to sensory-integrative problems (40).

Literature Review

Conclusions

The literature suggests that disturbances in subsystems are found in persons with mental illness; thus, it is important to consider the impact of these disturbances on the total open system (1-4). A disturbance in any subsystem component will resonate throughout the system and create other problems—this is a disorganized system. On the other hand, a system in which the subsystems are in harmony is an adaptive system. Disharmony within the system impacts the open-system cycle, limiting and disorganizing output of the system (1-4). Thus, these open-system relationships provide the logic of this study.

We made an organizational rating (throughput) of the system by examining the data on various subsystem components. We expected this measure of organizational status to correlate with observed output or adaptive behavior of the system. In addition, we compared medical model variables (diagnosis and symptomatology) representing an alternative conceptualization of the causes and nature of psychosocial problems with organizational status; this evaluated the relative utility of organizational status as an index of adaptive functioning.

This study was guided by the following questions. What is the organizational status of the human system of hospitalized psychiatric patients? How does the organizational status variable compare with psychiatric diagnosis and symptomatology? Do these variables operate as an alternative conceptualization of the causes and nature of psychosocial problems with organizational status; this evaluated the relative utility of organizational status as an index of adaptive functioning?

Method

Subjects

Study subjects were all patients hospitalized for a mental disorder at the National Institute of Mental Health during the three-month study who met the following criteria: capable of reading, understanding, and responding to paper-and-pencil questionnaires, were willing to participate in this study, and were free from acute exacerbation of symptoms and/or organic disorder. There were 33 eligible subjects, of which 30 agreed to participate.

The sample contained 13 males and 17 females between the ages of 18 and 59 years; the median age of participants was 29 years. Subjects carried a diagnosis of major affective disorder (15 subjects), schizophrenia (9 subjects), personality disorder (4 subjects), and psychotic disorders not elsewhere classified (2 subjects). At the time of the study, 17 subjects were receiving psychotropic medication and 13 subjects were medication free. The educational background of the subjects was as follows: 5 subjects had some high school education, 11 were high school graduates, 6 had some college education, 6 were college graduates, and 2 had some graduate education.

Instruments

To measure organizational status, we used a battery of six assessments. The variables used as indices of organizational status were locus of control, temporal orientation, goals, interests, roles, and skills. The choice of indices was based on the criterion that each of the three subsystems of the model of human occupation should be sampled to allow judgments to be made about an individual's overall system status. In addition, these variables were identified in the literature review as being potentially related to psychiatric disturbance. Operational definitions of the variables and their measures are summarized in Table 1.

Except for the Time Reference Inventory—Shortened Form and the Expectancy Questions and the Modified Interest Checklist, the literature supports the reliability and/or validity of the assessments used in the battery (22, 41, 45, 46, and F.
Table 1
Variables of the Human System and Their Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operational Definition</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locus of control</td>
<td>Self-report of internal vs. external sense of control</td>
<td>Internal-External Locus of Control Scale (41)</td>
</tr>
<tr>
<td>Goals</td>
<td>Number of reported goals</td>
<td>Expectancy Questions (35) adapted from Farnham-Diggory (42)</td>
</tr>
<tr>
<td>Temporal orientation</td>
<td>Self-report of average number of years projected into future and past</td>
<td>Time Reference Inventory—Shortened Form (43)</td>
</tr>
<tr>
<td>Interests</td>
<td>Self-report of intensity of interests</td>
<td>Modified Interest Checklist (35) based on Scattia's (44) modification of Matsutsuyu's (22) Interest Checklist</td>
</tr>
<tr>
<td>Roles</td>
<td>Self-report of role performance along temporal continuum</td>
<td>Role Checklist (35)</td>
</tr>
<tr>
<td>Skills</td>
<td>Observed ability to perform specific tasks</td>
<td>BaFPE, Task-Oriented Assessment and Task-Specific Observations of the shell sort, deposit slip, and house floor plan subtasks (45)</td>
</tr>
</tbody>
</table>

Table 2
Additional Research Variables and Their Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operational Definition</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptive level of functioning</td>
<td>Staff rating of subject's capacity to perform daily living tasks</td>
<td>AAMD Adaptive Behavior Scale; Independent Functioning, Economic Activity and Domestic Activity Subsections (47, 48)</td>
</tr>
<tr>
<td>Symptomatology</td>
<td>Nursing staff rating of intensity of symptoms</td>
<td>Modified Brief Psychiatric Rating Scale with social incompetence and loss of functioning constructs deleted (35) based on Overall and Gorman's Brief Psychiatric Rating Scale (49)</td>
</tr>
<tr>
<td>Psychiatric diagnosis</td>
<td>Axis I—Diagnostic and Statistical Manual of Mental Disorders, 3rd edition (50)—diagnosis</td>
<td>Medical record review</td>
</tr>
</tbody>
</table>

AAMD, American Association on Mental Deficiency.

Oakley et al., unpublished data October 1984).

Procedure

Data on the six assessments were collected by the principal investigator in a test and interview session that lasted approximately one to two hours. In the interest of time, only the shell sort, deposit slip, and house floor plan subtasks of the Bay Area Functional Performance Evaluation (BaFPE) were used.

The Role Checklist, developed specifically for this study, is a paper-and-pencil inventory in which respondents report their past, present, and anticipated participation in ten roles. The instrument was based on a literature review of adult roles and has face and content validity. Agreement between two administrations of the test with a group of 124 adults was 87% with an estimate of weighted kappa of .642, which indicates substantial strength of agreement.

To measure adaptive level of functioning, we used the Independent Functioning, the Economic Activity, and the Domestic Activity subsections of the AAMD Adaptive Behavior Scale (47, 48) because they evaluate those activities of daily living with which occupational therapists are directly concerned.

Symptomatology was measured by the Modified Brief Psychiatric Rating Scale (49), a test routinely used at the National Institute of Mental Health operational definitions and measures for these variables and for the variable of psychiatric diagnosis (50) appear in Table 2.

Rating of Organizational Status

Organizational status of each subject was measured by converting data from the battery of six assessments into a rating ranging from one to five (see Table 3). This rating continuum was assigned by an occupational therapist (not the principal investigator) who did not know the subject's identity, sex, medication status, or diagnosis. In making the rating, the therapist examined the content of the subject's responses on the six assessments, compared the subject's response scores to those of a normal population (when available), and examined the interrelationships among findings of the six assessments; this was done by using the model of human occupation as a frame of reference for data interpretation (1-4, 35).

To assess the reliability of this clinical rating, the principal investigator also rated each subject, without knowing the clinician's rat-
The two sets of ratings were in agreement on 27 of the 30 subjects. There were discrepancies of one increment on the remaining three subjects.

**Statistical Methods of Analysis**

Two methods of statistical analysis were used. We examined the associations between variables primarily through estimates of the Spearman correlation coefficient, a nonparametric statistic based on rank orders of two variables. Correlations were estimated for subgroups determined by the subject's diagnosis (excluding the small number of subjects with psychotic disorders not elsewhere classified and personality disorders), sex, and medication status. Multiple regression techniques (i.e., general linear models procedures) were used to identify the best predictor of adaptive functioning. Procedures in the SAS Statistical Software (51) were used to compute results. Reported significance levels are two-tailed; no adjustments were made for repeated tests.

**Descriptive Data on Organizational Status of the Components of the Human System**

This section reports subjects' scores on the six assessments according to each subsystem of the model of human occupation. In discussing these data (see Table 4), we make brief mention as to how the data were interpreted by the therapist in rating the organizational status of the human system.

### Table 3
**Rating Continuum for Clinical Judgment of the Organizational Status of the Human System**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Very Organized. Very good adaptive shape; components* of the human system are in very good harmony; subject could function independently in the community and easily make the transition into community life.</td>
</tr>
<tr>
<td>4</td>
<td>Organized. Good adaptive shape; components* of the human system are in good harmony; subject could function in the community with some assistance and with assistance could make the transition into community life.</td>
</tr>
<tr>
<td>3</td>
<td>Marginal. Fair adaptive shape; components* somewhat organized; subject is at risk for problems functioning independently in the community even with assistance.</td>
</tr>
<tr>
<td>2</td>
<td>Disorganized. Poor adaptive shape; components* of the human system are barely in harmony; subject would have problems functioning independently in the community even with assistance.</td>
</tr>
<tr>
<td>1</td>
<td>Very Disorganized. Very poor adaptive shape; components* of the human system are not in harmony; subject could not function independently in the community even with assistance.</td>
</tr>
</tbody>
</table>

* Components refer to focus of control, goals, temporal orientation, interests, roles, and skills.

### Table 4
**Descriptive Data on Organizational Status of the Human System**

<table>
<thead>
<tr>
<th>Component of the Human System</th>
<th>Subjects' Mean Scores</th>
<th>Mean Normative Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Locus of control</strong></td>
<td>Score on Internal-External Locus of Control Scale</td>
<td>11.1; SD = 3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Goals</strong></td>
<td>Number of goals</td>
<td>2.3; SD = 2.7</td>
</tr>
<tr>
<td><strong>Temporal orientation</strong></td>
<td>Number of years projected into past</td>
<td>9.6; SD = 7.0</td>
</tr>
<tr>
<td></td>
<td>Number of years projected into future</td>
<td>4.6; SD = 9.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interests</strong></td>
<td>Number of strong interests</td>
<td>22.1; SD = 16.4</td>
</tr>
<tr>
<td><strong>Roles</strong></td>
<td>Number of continuous roles (roles checked in past, present, and future columns)</td>
<td>1.7; SD = 1.8</td>
</tr>
<tr>
<td></td>
<td>Number of disrupted roles (roles checked in past and future columns)</td>
<td>3.5; SD = 1.9</td>
</tr>
<tr>
<td><strong>Skills</strong></td>
<td>Scores on BaFPE subtasks: shell sort</td>
<td>39.3; SD = 6.7</td>
</tr>
<tr>
<td></td>
<td>deposit slip</td>
<td>38.0; SD = 9.3</td>
</tr>
<tr>
<td></td>
<td>house floor plan</td>
<td>38.3; SD = 9.0</td>
</tr>
</tbody>
</table>

* Adults having a mean age of 33 years.
jeers appeared more past oriented

Table 5
Spearman Correlation Coefficients of Organizational Status and Symptomatology with Adaptive Level of Functioning

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Adaptive Level of Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Patients</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational status of the human system</td>
<td>$r = .85$&lt;br&gt;$p = .0001$</td>
</tr>
<tr>
<td>Symptomatology</td>
<td>$r = -.55$&lt;br&gt;$p = .002$</td>
</tr>
</tbody>
</table>

Volition

The subjects in this study appeared to score more externally in their locus of control than the norm provided by Rotter (41); however, only extreme scores were considered useful in forming an opinion about the organizational status of subjects. Subjects that had scores which reflected extreme feelings of internal control and who were simultaneously hospitalized and unable to function without assistance were considered unrealistic in their self-assessment. Those subjects who scored in the direction of extreme external locus of control were judged to be expressing true feelings of helplessness. In both cases, these individuals were judged to be disorganized.

The temporal perspective of subjects appeared more past oriented and less future oriented than other samples for which data are available. In concert with a paucity of future orientation, subjects had difficulty stating future goals and two-thirds of them were unable to express more than two goals. Subjects who expressed a degree of hopefulness in addition to realistic planning, reflected by an orientation to the future and logical goals, were judged to be more organized.

Subjects varied widely in their pattern of interests, and no normative data are available for comparison. Areas of strong interest were judged primarily for congruency with roles, skills, and goals.

Habituation

All subjects had at least one disrupted role (i.e., a role checked in the past and future columns), and the sample as a whole performed few roles on a continuous basis (i.e., roles checked in the past, present, and future columns). Subjects' role disruption appeared greater and their continuous roles appeared fewer than those of a group of normal adults. In judging organizational status, continuous roles were considered a strength, whereas role disruption was considered a liability, especially if subjects did not fulfill available roles during hospitalization. The overall pattern of roles and their relationships to skill level, interests, goals, and temporal orientation contributed to the therapists' judgments about the system's organizational status.

Performance

The subjects appeared to score lower on the BaFPE than did a normal population; however, most composite scores fell in the functional range. Thus, specific scores in the dimensions of the Task-Oriented Assessment (i.e., decision making, ability to abstract) were considered along with overall skill performance. In addition, skills were judged for consistency with subjects' roles, interests, and goals.

Indices of Adaptive Level of Functioning

An occupational therapy index of adaptive functioning organizational status was compared with psychiatric diagnosis and symptomatology, two traditional medical model indices of adaptive functioning.

Correlations between organizational status and adaptive level of functioning were significant for all of the following: the total sample, the major affective disorder and schizophrenia subgroups, males, females, and subjects on and off psychotropic medication.

Significant inverse relationships were obtained between symptomatology and adaptive level of functioning for the following: the total sample, the major affective disorder subgroup, females, and subjects who did not receive psychotropic medication (see Table 5).
Symptomatology was also correlated with organizational status \( r = -0.49; p = .006 \), indicating that the two are associated but not synonymous.

Using multiple regression techniques, we defined adaptive level of functioning as a linear function of three explanatory variables: organizational status of the human system, symptomatology, and diagnosis. All possible step-wise models were calculated (see Table 6). The most important variable in the linear model was organizational status; this was followed by symptomatology. This model explained 65.3% of the variance in the value of adaptive functioning. Diagnosis was not significant in the full model. Thus, although symptomatology was significant in the general linear model, this study indicated that the organizational status of the human system was a more informative measure.

**Discussion**

This study was a first attempt to develop an assessment approach grounded in the model of human occupation. Results as a whole were supportive of using this approach to explain an individual’s adaptive level of functioning or lack thereof. The results suggest that the organizational status of the human system, when compared with symptomatology and diagnosis, is a more significant index of adaptive level of functioning.

This study invites further investigation, especially that which could improve some of its weaknesses. For example, the reliability and validity of three of the instruments used in the assessment battery are not known. The impact of this needs further investigation. Also, the study employed no measure of habits, which might contribute substantially to clinical judgment regarding the organizational status of the human system. The study invites replication with a larger group; consideration should be given to development of alternative test batteries for different diagnostic and socioeconomic subgroups.

Refinement of the assessment battery is important to demonstrate the efficacy of occupational therapy evaluation procedures. Furthermore, as occupational therapists gain confidence in their abilities to identify variables that influence adaptive functioning, they can more systematically design treatment to address these variables. Identifying the problems in the adaptive process of psychiatric patients is an important step towards understanding occupational dysfunction and using occupation to ameliorate psychiatric problems.

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