Abstract

This paper addresses quality of post-acute care for older adults going home after hospitalization for depression. Quality was conceptualized and assessed in terms of services received for four domains of need: psychiatric, medical, functional, and psychosocial. At discharge, needs for care was assessed using medical records, standardized instruments, and patient interviews; quality of care was assessed by whether or not needs were met by services through the first six weeks of post-acute care. Quality of care varied across type of need: psychiatric needs were most likely, and psychosocial needs were least likely, to be met. Urban elders received better psychiatric care than did rural elders. Elders in worse physical health received better medical and psychosocial care, but poorer psychiatric care. Elders with psychoses and living with others had better care for functional dependencies. The competing demands perspective suggests that medical illness may take priority over psychiatric care.

Quality of care has emerged as one of the most pressing concerns in health and mental health services. The President’s Advisory Commission on Consumer Protection and Quality in
the Health Care Industry concluded that service underutilization and overutilization, errors, and practice variation “present a clear and compelling argument for national action.” An increasing number of studies in mental health research focus on variations in service use and in quality of care. The sufficiency and adequacy of care received by persons with the most serious of mental disorders is of particular concern, underscored by evidence that fewer than one in six patients with serious mental illness received treatment that could be considered minimally adequate.

This study addresses the quality of post-acute, community-based care for older adults with depression. Elders with serious mental disorder constitute an especially vulnerable and important group. At least one in five older adults suffer from a mental disorder. Experts in geriatric mental health anticipate “an unprecedented explosion” of older adults with disabling mental disorder; by 2030, the number of elders with significant mental disorders will have quadrupled and will exceed younger age groups in frequency of mental disorder. Depressed elders’ underutilization of community-based mental health care results in overutilization of higher levels of care, including disproportionate psychiatric hospitalization. Geriatric patients of psychiatrists are twice as likely as younger patients to be treated in hospital settings, and with shorter lengths of stay for geropsychiatric hospitalization. Post-acute psychiatric care has grown dramatically, and although outcomes achieved from expensive inpatient treatment may be undermined by inadequate service after discharge, virtually no study has addressed the extent to which post-acute services meet depressed elders’ needs for care.

Assessing the quality of care for elders with depression is complicated by their multiple needs for care and their reliance on multiple providers and sectors for treatment. Primary medical care has long been recognized as a significant source of mental health care, given elders’ high medical comorbidity and their underutilization of specialty mental health care. Besides specialty mental health, other significant sectors in the mental health service delivery system include human (social) services and voluntary self-help (informal care). The Surgeon General’s report recently highlighted the tremendous growth and diversity in service settings in which older adults receive mental health care. Yet few studies to date have taken a comprehensive approach to care use across multiple sectors.

**Study Focus and Conceptualization**

**Quality as needs met through services**

Quality was conceptualized and assessed in terms of services that correspond to needs for care. Although such a focus does not capture many elements of the process of care, it is consistent with the perspective of consumers who tend to evaluate care in terms of its responsiveness to their individual needs and with long-standing definitions of quality as the extent to which services provided are consistent with predefined standards for care. For example, quality of health care is often assessed through observational studies to compare services received (as reflected in claims or record data) to those in guideline-congruent or standard of care services. Mental health care quality has often been judged through services received as in the work of Wang et al. who assessed quality of mental health care on the basis of prescription receipt and mental health specialist visits.

**Factors associated with quality**

The study’s conceptual model is further informed by the literature on factors associated with service use and quality of care. Fig 1 reflects that needs met or quality of care was conceptualized as a dependent variable in relation to such independent variables as client demographics and service facilitators such as urban/rural location, living arrangements, social resources, and service
barriers. Consistent with Donabedian’s classic view of quality as a function of structure, process, and outcome,26 the study conceptualization incorporates structural factors such as geography and barriers to care. Drawing on the Andersen behavioral model of service use, the study’s conceptual model incorporates “need” variables such as depression severity, “predisposing” factors such as gender and age, and “enabling” factors such as social resources.27,28

Quality and multiple domains of care

Consistent with research about comorbidity in the face of depression and with a biopsychosocial perspective on mental disorder,19,29–31,37 needs met is examined through services in four domains: psychiatric, medical care, functional assistance, and psychosocial.29–31 This is consistent with the assumption that patients with multiple needs may not achieve desired outcomes if their service use addresses only some needs, leaving other needs for care unmet.

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**Figure 1**
Conceptual model of needs met through services.

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Client Demographics
- Age
- Gender
- Race
- Education

Service Facilitators
- Urban/rural
- Living Arrangements
- Social Resources
- Service Barriers

Needs Met in
Four Domains of Post-acute Care
- Psychiatric Services
- Medical Services
- Functional Assistance
- Psychosocial Services

Control Variables: Need
- Depression Severity
  - First Episode
  - Length of Stay
- Cognitive Impairment
- Psychosis
- Health
As a first step toward advancing knowledge of the quality of post-acute care for elders who have been hospitalized for depression, this paper advances the measurement of quality through the concept of “needs met” through services and addresses two objectives:

1. Assess the extent to which the post-acute services received by depressed elders correspond to needs in each of four domains: psychiatric, medical, functional, and psychosocial.
2. Identify factors associated with variation in needs met for psychiatric services, medical care, functional assistance, and psychosocial services.

Methods

Overview

This observational, prospective study addresses services received by older adults discharged home after hospital treatment for depression, the most common diagnosis for older adults hospitalized with mental disorder.\(^3^2\) Limiting the sample to those discharged home was consistent with the study’s focus on and quality of community-based, post-acute care.

Procedures

All consecutive admissions were screened according to two inclusion criteria: (1) hospitalized for treatment of depression and (2) discharged to a community setting rather than a nursing home, hospital, or other institutional setting. The unit medical director, a geropsychiatrist, reviewed the diagnosis of each unit patient, ensuring the inclusion of only who met DSM-IV Axis 1 depression criteria. Comorbid psychiatric disorder, including dementia, was not an exclusionary factor so long as depression was the primary reason for hospital admission. Two patients were excluded because cognitive impairment prevented them from serving as a reliable source of information, and they had no available collateral source of information. Of eligible patients, 73.5% consented to participate; consent or refusal was not associated with gender, race, marital status, or age.

Sample

The study included 199 older adults hospitalized for depression on a 34-bed geropsychiatric unit of a large urban hospital and discharged to home settings between March 1997 and May 2000. Sample characteristics are reported in Table 1. At six weeks, 186 patients were living and available for the telephone interview to assess needs met through service use between discharge and six weeks. Average length of stay was 18.4 days. The sample’s age, gender, and race distributions were not dissimilar to those in other studies of hospitalized depressed elders.\(^4^,^3^3^,^3^4\)

Measurement

Service needs at discharge

As reported in Morrow-Howell et al.,\(^1^9\) service needs were prospectively assessed in four domains—psychiatric, medical, functional, and psychosocial for hospitalized depressed elders ready for discharge home. As reflected in Table 2, needs were assessed using standardized instruments with established reliability or through the presence or absence of entries in predetermined sections of medical records. All patients had need for follow-up psychiatric services; 94% were discharged with evidence of need for further medical services (either
treatment for a specific medical condition or medication monitoring), 75% needed functional assistance with activities of daily living (ADL) or instrumental activities of daily living (IADL), and 72% needed psychosocial services, for socialization, or to address psychosocial problems.

Measurement of needs met

Consistent with the study conceptualization, “needs met through services” was measured as the proportion of needs evident at discharge (denominator) for which corresponding services were received by six weeks (numerator). For patients without service needs in a particular domain, their corresponding “needs met” were not assessed. Consequently, the sample for the needs met analyses reflects the number living and interviewed at six weeks and with needs in a given domain.

For each domain reflecting a need at discharge, questions were asked to determine whether or not the elder received services through which the need could be met. Closed-ended questions captured care received between discharge and six weeks, detailing number of visits, whether or not the visit included review of medication or counseling, and the site where the services were provided. Use of hospitals (both inpatient and emergency care), doctors and other professionals for mental health and physical health, skilled nursing care, home health, and social services were also assessed. When a participant reported receiving services for all identified needs, service need was classified as met. When a participant reported receiving services for only some needs, need was classified as partially met. If participant reports receiving no services for identified needs, service need was classified as unmet. Table 3 details the evidence used to determine (yes/no) whether each need was met through the post-acute services used. Post-acute psychiatric service

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Sample description (N = 186)(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>M = 76.0 years (SD = 7.06 years); range 60–98 years</td>
</tr>
<tr>
<td>Race</td>
<td>White 86%</td>
</tr>
<tr>
<td></td>
<td>African-American 14%</td>
</tr>
<tr>
<td>Gender</td>
<td>Female 70%</td>
</tr>
<tr>
<td></td>
<td>Male 30%</td>
</tr>
<tr>
<td>Marital status</td>
<td>Single 3%</td>
</tr>
<tr>
<td></td>
<td>Married 43%</td>
</tr>
<tr>
<td></td>
<td>Widowed 45%</td>
</tr>
<tr>
<td></td>
<td>Divorced 9%</td>
</tr>
<tr>
<td>Living arrangement</td>
<td>Lives alone 71%</td>
</tr>
<tr>
<td></td>
<td>Lives w/others 29%</td>
</tr>
<tr>
<td>Education</td>
<td>8th grade or less 18%</td>
</tr>
<tr>
<td></td>
<td>Some high school 21%</td>
</tr>
<tr>
<td></td>
<td>High-school graduate 27%</td>
</tr>
<tr>
<td></td>
<td>Some post-high school 23%</td>
</tr>
<tr>
<td></td>
<td>College graduate 11%</td>
</tr>
<tr>
<td>Medicaid (plus Medicare)</td>
<td>Medicaid coverage 7.5%</td>
</tr>
<tr>
<td>Medigap (private; plus Medicare)</td>
<td>Medigap coverage 82%</td>
</tr>
<tr>
<td>First listed Axis 1 diagnosis</td>
<td>Major depression 86%</td>
</tr>
<tr>
<td></td>
<td>Bipolar-depressive phase 10%</td>
</tr>
<tr>
<td></td>
<td>Depression-NOS 4%</td>
</tr>
</tbody>
</table>

\(^a\)Patients living and available for 6-week interview.

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needs for depression were judged as met by report that the patient received: follow-up care with psychiatrist or other
physician for psychiatric care (yes/no)

Outpatient ECT Discharge orders in specified section of hospital chart reflects follow-up ECT appointments (yes/no)

Psychotherapy Discharge orders in specified section of hospital chart reflects orders or recommendation for psychotherapy (yes/no)

Psychotropic medication monitoring Medication section of discharge orders lists psychotropic medication (yes/no)

Supervision for cognitive impairment MMSE score (nurse administered) less than 20\textsuperscript{a}

Medical service needs Treatment needed for specific medical condition CIRS-G score (nurse administered) above 2\textsuperscript{b}

Medication monitoring Medication section of discharge orders lists nonpsychotropic medication (yes/no)

Services for functional dependency Assistance with ADLs OARS physical activities of daily living score above 0\textsuperscript{c}

Assistance with IADLs OARS instrumental activities of daily living score above 0\textsuperscript{d}

Psychosocial services Socialization services OARS social resources rating scale above 3; reliability = \textsuperscript{e}

Casework or counseling services for psychosocial situation Psychosocial/environmental problems checked on DSM-IV, Axis 4 in hospital chart, score above 0\textsuperscript{f}

\textsuperscript{a}Test–retest reliability ranges from 0.83 to 0.98.\textsuperscript{12}
\textsuperscript{b}Intraclass correlation ranges from 0.78 to 0.88.\textsuperscript{43}
\textsuperscript{c}Test–retest reliability is 0.82.\textsuperscript{44}
\textsuperscript{d}Test–retest reliability is 0.71.\textsuperscript{44}
\textsuperscript{e}Intraclass correlation is 0.83.\textsuperscript{51}
\textsuperscript{f}No reliabilities reported on this widely used axis of the DSM-IV.

needs for depression were judged as met by report that the patient received: follow-up care with psychiatrist or medical doctor, outpatient ECT, psychotherapy, psychotropic medication monitoring, and supervision for limited cognitive ability. Medical service needs were scored as met if the patient reported receiving treatment for any existing medical condition and monitoring of medications used for physical health conditions. Functional service needs were met if the patient reported receiving assistance from formal (reimbursed or through an agency) or informal (from family or friends) assistance with ADL and assistance with IADL. Psychosocial service needs were judged as met if the patient reported receiving formal socialization services, casework, or counseling for the psychosocial problems assessed in the DSM-IV Axis 4, such as problems with primary support group (family member), social environment, difficulty with acculturation or
<table>
<thead>
<tr>
<th>Need</th>
<th>Service through which need can be met</th>
<th>Evidence from self-report that service was received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatric service needs</td>
<td>Physician services for psychiatric care</td>
<td>Participant reports one or more appointments kept with the admitting psychiatrist, other physician for treatment of psychiatric condition, or psychiatric day treatment/partial hospitalization program</td>
</tr>
<tr>
<td>Follow-up psychiatric care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow-up electroconvulsive treatment</td>
<td>Outpatient electroconvulsive therapy (ECT)</td>
<td>Participant reports receiving all of the prescribed number of ECT treatments</td>
</tr>
<tr>
<td>Follow-up psychotherapy</td>
<td>Counseling or psychotherapy services</td>
<td>Participant reports receiving individual or group counseling or psychotherapy from one or more of the following: the admitting psychiatrist, another physician for treatment of psychiatric condition, a mental health specialist (including psychologist, social worker, or other counselor), a day treatment/partial hospitalization program.</td>
</tr>
<tr>
<td>Follow-up medication monitoring</td>
<td>Professional monitoring of psychotropic medication</td>
<td>Participant reports being asked about his/her medications, side effects of medications, or having changes of medication ordered by one or more of the following professionals: the admitting psychiatrist, another physician for treatment of a psychiatric condition, a nurse, a day treatment/partial hospitalization program, or an adult daycare program. If participant reports none of the foregoing, participant reports taking new psychotropic medications prescribed since discharge from the index hospitalization.</td>
</tr>
</tbody>
</table>
discrimination, difficult adjustment to change, housing or economic problems, and discord with caregiver. Psychosocial needs are typically met through aging network or social services, such as case management, counseling, or aging services aimed at socialization.

A separate analysis of data for this study focused on the congruence of patient-reported service receipt (as used in assessing needs) with service receipt as reflected in medical records; the overall good levels of congruence varied by provider type and intensity of service use (for example, congruence was lower for specialty services and highest for hospital and pharmacy use). A related study reports the high test–retest reliability on older adults’ reports of service receipt (weighted Kappa >0.87).

Factors associated with needs met through services

Consistent with the guiding conceptual framework, variability in needs met was examined in relation to a variety of factors. Patient age, gender (coded 1 for female and coded 0 for male), and race (coded 1 for African-American and coded 2 for white) were abstracted from hospital records. Education was measured categorically and assessed during the in-hospital patient interview. Urban/rural residence was derived from home zip code, and living arrangements at discharge was obtained from the patient’s social worker. Social resources were assessed by the Social Resource Rating Scale [Older Americans Research and Service Center instrument (OARS)] during the in-hospital patient interview (1 = excellent social resources to 6 = totally socially impaired). Service utilization barriers were assessed during the six-week telephone interview through ten questions, each coded 1 for yes and 0 for no, and summed. Questions addressed such issues as cost concerns, uncertainty about where to get help, distance or transportation difficulties, time constraints, and stigma.

Severity was controlled as follows. Research assistants abstracted the last-recorded Mini-Mental State Exam (MMSE) score routinely administered by unit nurses from hospital charts. Patient psychotic features were rated by the medical director of the Geropsychiatric unit and coded yes or no. Elders’ health was assessed through the SF-12 Health Survey and through the Cumulative Illness Rating Scale for Geriatrics (CIRS-G). A nurse practitioner abstracted patient hospital charts to rate physical illness using the CIRS-G at discharge, a measure geared toward the geriatric patient that estimates medical burden. Problem severity (0–4, with 0 reflecting no problem, 4 reflecting extremely severe or urgent clinical problem) is rated for each of 14 organ systems. Because, by definition, all study participants had psychiatric impairment and the CIRS-G was used to reflect medical comorbidity, only thirteen organ systems were rated to reflect physical condition. Functional status was assessed through the Multidimensional Functional Assessment Questionnaire of the OARS, capturing ADL, or capacity to care for bodily functions (e.g., feeding, dressing, and bathing), and IADL, or capacity to perform activities necessary to maintain an independent household (e.g., shopping for groceries, meal preparation, and money management). Research assistants administered the OARS to each study participant during the last few days of hospitalization prior to their discharge home. Whereas each study participant met DSM-IV criteria for Axis I diagnosis of depression, depression severity was captured by the Geriatric and Depression Scale (GDS). Unit nurses administer the GDS periodically during patient stays. The last, prior-to-discharge recorded GDS scores were abstracted from the medical record, consistent with the study’s focus on factors associated with functioning at discharge. The unit’s medical director’s (geropsychiatrist) notes reflected whether or not the patient’s current depression was the first episode of affective disorder. Previous psychiatric hospitalization was assessed in the in-hospital patient interview (yes or no). Length of stay was calculated from admission and discharge dates in hospital record. Social workers reported whether discharge destination was the same residence as before hospitalization.
Statistical procedures

Missing values were imputed using a hot decking procedure, which essentially sorts study participants into similar groups based on their value in another variable and replaces their missing data with the value of a similar participant.\textsuperscript{48} For the analyses reported here, minimal data were missing. The value on the GDS at discharge had 27 missing observations (13.8%); cognitive status at time of discharge had 22 (11%); and living arrangements had 1 (1%). Values were imputed for these three variables.

Although the needs met values were proportions, distributions of the resultant ratios were examined using \(Q\)-plots to select the correct regression technique. Two measures could be treated as continuous but were not normally distributed. The skewness values for psychiatric needs met and functional needs met were \(-1.42\) and \(-2.18\), respectively. Thus, three kinds of regression—ordinary least square (OLS), censored normal, and logistic—were compared to select the model with best fit or largest value of goodness-of-fit. Psychiatric needs met was analyzed using OLS regression, and functional needs met was analyzed using censored normal regression. Neither medical needs met nor psychosocial needs met had a continuous distribution; rather, their distributions approximated three-level ordinal variables: fully met (ratio = 1), partially met (ratio = 0.5), and unmet (ratio = 0). Because the proportional odds assumption was met for psychosocial needs met (\(\chi^2 = 1.40; p = 0.71\)), it was analyzed using ordered logistic regression. Because the proportional odds assumption was violated for the medical needs met variable (\(\chi^2 = 19.49; p < 0.001\)), it was analyzed through multinomial logistic regression. Analytic models were developed by exploring the need, enabling, and predisposing independent variables in relation to each needs met dependent variable, testing multivariately those variables that met or approached statistical significance. Variables significant at the 0.10 level in bivariate analyses were tested in multivariate models.

Results

Variation in needs met

As shown in Table 4, needs met varied across domains and across 11 specific service needs. The percent of patients with all needs fully met through services ranged from a low of 48\% for the domain of psychosocial needs to a high of 72\% for psychiatric needs. The percent of patients who received no service in an area of need was lowest in the area of functional assistance (3\%) and highest in the psychosocial area (34\%). With regard to specific needs within domain, all patients who left the hospital needing follow-up ECT received such care by 6 weeks postdischarge, and over 80\% of patients needing psychotropic medication monitoring and supervision for cognitive impairment received such care. Care was poor for those needing psychotherapy (50\% needs met) and socialization services (27\% needs met), although it should be noted that few patients had discharge orders for post-acute psychotherapy.

Factors associated with needs met

As shown in Table 5, the multiple regression model for psychiatric needs met \((N = 183)\) was statistically significant \([F(7,175) = 4.72, p < 0.0001]\), explaining 16\% of the variance in psychiatric needs met. Elders living in urban areas \((b = 0.26330, t = 4.17, p < 0.0001)\) and those with less severe medical comorbidity \((b = -0.02976, t = -2.21, p = 0.0029)\) were more likely to have their psychiatric needs met. The variable “psychotic features” approached significance in this analysis \((b = 0.10584, t = 1.90, p = 0.059)\), perhaps indicating that those with more severe mental illness received better post-acute psychiatric care.

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<table>
<thead>
<tr>
<th>Need</th>
<th>Service through which need can be met</th>
<th>Percentage with need (N = 186)</th>
<th>Percentage with need met of those with need</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychiatric service needs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow-up psychiatric care</td>
<td>Physician services for psychiatric care</td>
<td>82%</td>
<td>76% (117/153)</td>
</tr>
<tr>
<td>Follow-up electroconvulsive treatment</td>
<td>Outpatient electroconvulsive therapy (ECT)</td>
<td>10%</td>
<td>100% (18/18)</td>
</tr>
<tr>
<td>Follow-up psychotherapy</td>
<td>Counseling or psychotherapy services</td>
<td>1%</td>
<td>50% (2/4)</td>
</tr>
<tr>
<td>Follow-up psychotropic medication monitoring</td>
<td>Professional monitoring of psychotropic medication</td>
<td>97%</td>
<td>84% (152/181)</td>
</tr>
<tr>
<td>Supervision for cognitive impairment</td>
<td>Professional and/or nonprofessional supervision of patient’s environment and activities</td>
<td>12%</td>
<td>83% (19/23)</td>
</tr>
<tr>
<td><strong>Medical service needs</strong></td>
<td></td>
<td>94%</td>
<td>Unmet = 24%</td>
</tr>
<tr>
<td>Follow-up treatment for medical conditions</td>
<td>Professional services for medical care</td>
<td>73%</td>
<td>Partially met = 12% Met = 64% (175)</td>
</tr>
<tr>
<td>Follow-up physical medication monitoring</td>
<td>Professional monitoring of physical medication</td>
<td>90%</td>
<td>76% (127/167)</td>
</tr>
<tr>
<td>Functional assistance needs</td>
<td></td>
<td>75%</td>
<td>Unmet = 3%</td>
</tr>
<tr>
<td>Assistance for ADL needs</td>
<td>Human assistance with 1 or more ADLs</td>
<td>29%</td>
<td>Partially met = 27% Met = 70% (139)</td>
</tr>
<tr>
<td>Assistance for IADL needs</td>
<td>Human assistance with 1 or more IADLs</td>
<td>74%</td>
<td>80% (110/138)</td>
</tr>
<tr>
<td>Psychosocial service needs</td>
<td></td>
<td>72%</td>
<td>Unmet = 34%</td>
</tr>
<tr>
<td>Socialization service</td>
<td>Aging or formal home care services to strengthen social network</td>
<td>28%</td>
<td>Partially met = 18% Met = 48% (134)</td>
</tr>
<tr>
<td>Casework/counseling for psychosocial situation</td>
<td>Professional counseling for psychosocial problems</td>
<td>67%</td>
<td>68% (85/125)</td>
</tr>
</tbody>
</table>
The multinomial logistic regression analysis of medical needs met (\(N = 175\)) evidenced a significant model \(\chi^2(6) = 20.62, p = 0.002\). In this analysis, one set of parameter estimates compares those with partially needs met to those with completely needs unmet. Here, those with poorer health (SF-12) evidenced receipt of better care \((b = -0.007437, z = -2.83, p = 0.005)\). Length of geropsychiatric hospitalization approached significance \((b = -0.006494, z = -1.93, p = 0.053)\), with shorter stays associated with better post-acute medical care. Another set of parameter
estimates compares the extremes of care: completely needs met to completely needs unmet. Again, those with poorer health (SF-12) were more likely to have their needs for medical care completely met \((b = -0.004703, z = -2.88, p = 0.004)\).

The censored normal regression model for functional needs met \((N = 137)\) was statistically significant \([\chi^2(6) = 20.49, p = 0.002]\). Two variables were marginally significant, indicating that those with more severe mental illness reflected in psychotic features \((b = 0.2796, t = 1.97, p = 0.051)\) and those living with others were more likely to have their functional needs met \((b = 0.2595, t = 1.95, p = 0.054)\).

The ordinal logistic regression model for psychosocial needs met \((N = 134)\) was significant \([\chi^2(3) = 13.23, p = 0.004]\). Psychosocial needs were more likely to be met for those with more medical comorbidity \((b = 0.2547, \chi^2 = 6.86, p = 0.01)\).

**Discussion**

This study addressed the quality of post-acute care for depression in later life by prospectively measuring needs for care at discharge and then assessing services received in relation to those needs. The systematic, prospective assessment of needs at discharge and subsequent assessment of needs met in post-acute care constitute strengths of this study design; prior studies of needs met through services have been cross-sectional in design.\(^2\) The measurement approach was structured to capture the varieties of services and providers typically used by older adults with mental disorder. Because services were assessed by participant report, the study was not bound methodologically to a particular network of providers or clinic sites.\(^3\) Rather, patients were followed through, and queried about, the care they received from all reported sources. When assessing psychotropic medication monitoring, for example, study participants were asked if they received this care from such sources as psychiatrist, primary care MD, physician at a day treatment facility, and nurses at daycare centers. Similarly, for the domain of psychiatric needs, for example, questions captured receipt of medications, medication monitoring, and counseling received for depression from primary care MDs to prevent underestimation of this important source of psychiatric care for older adults. Patients’ self-reported service utilization and medical record evidence of service utilization were highly associated.\(^38\)

The limitations associated with this measurement approach need to be acknowledged. First, because the study addressed quality of care for needs identifiable at discharge and presumably driving post-acute care, new needs that emerged by 6 weeks postdischarge were not assessed. Second, the measurement of quality was limited to an approach assessing services corresponding to need. A need was scored as “met” if the study participant reported receiving any service toward meeting it. Thus, some individuals scored as having needs met may have received minimal care in relation to that need. As such, service receipt may more accurately reflect “needs addressed” than “needs met,” and thus, the measurement may overestimate the actual extent to which needs are met. Further, this approach captures services consistent with guidelines or standards of care but does not capture consumer preferences, an important area for further research. Third, findings are specific to the population of older adults with depression severe enough to warrant hospitalization and discharged home, the most common discharge destination for older adults receiving acute care for mental disorder.\(^32\) Whereas psychiatric units of general hospitals are the second most common site for acute care for geriatric depression, psychiatric hospitals being the most common,\(^32\) geropsychiatric units are recent and yet understudied efforts to provide specialized care for older adults’ distinct and challenging combinations of psychiatric, medical, behavioral, functional, and cognitive problems.\(^49\) Admission criteria and treatment practices may be linked to quality of post-acute care.
Variation in needs met

The findings reflect considerable variability in domains of needs met. Almost three fourths of patients had their needs for follow-up psychiatric care met, with needs for ECT and psychotropic medication monitoring and supervision for cognitive impairment met by more than 80% of patients. This may be due to the fact that patients were hospitalized for depression, an event likely to emphasize the significance of their need for psychiatric care. Further, at least during their hospitalization, patients were under the care of a psychiatrist who may have stressed the importance of follow-up care. Few patients in this sample left the hospital with follow-up orders for psychotherapy, consistent with evidence from the American Psychiatric Association Practice Research Network (PRN) study that psychiatrists infrequently used psychotherapy for geriatric patients.\textsuperscript{13}

Follow-up care for psychosocial problems was poorest; about one third of patients needing such care received no services in this area by 6 weeks postdischarge. Consistent with the theory of competing demands, psychosocial problems may be perceived by elders, family members, and providers as less pressing than psychiatric or medical illnesses, and services to meet psychosocial problems may be viewed as discretionary or more remedial to family care. Psychosocial services are unlikely to be widely known or well understood by older adults, may be stigmatized, and are less often covered by insurance. Depression itself may make socialization—often one of the purposes of participating in psychosocial services—feel burdensome; consequently, depressed elders may be reluctant or unwilling to participate in such services. Finally, because socialization needs were assessed not from medical records but from an independent structured assessment, the research protocols may have been sensitive to psychosocial needs that were not identified by clinical care staff (physicians, social workers). According to Colenda et al.\textsuperscript{13}, psychosocial and environmental stressors may be less likely than medical comorbidities to be assessed or documented by treating psychiatrists.

Nearly all patients reported receiving services to meet their needs for help with functional dependency. Functional assistance is usually provided by informal caregivers and, as such, is widely available (for those with family) at no charge. Functional dependencies—particularly in the area of toileting, meal preparation, and ambulation—are not viewed as discretionary, and thus, the family and friends often rally to provide functional assistance. Moreover, both Medicare and Medicaid provide a paid safety net when formal services are needed in a post-acute period of care.

Factors associated with needs met

Healthier patients and those residing in urban areas were more likely to have their needs for psychiatric care met. Although the scoring for psychiatric needs met reflected the psychiatric care provided by primary care physicians as well as that provided by psychiatrists, this finding may reflect variability in access to, or use of, specialty mental health. Those residing in urban areas are likely to have better access to psychiatrists and day treatment centers.

Why should elders with medical comorbidity receive poor care for psychiatric needs but better care for psychosocial needs? Elders with pressing medical comorbidity may have been homebound or less able to travel to mental health providers, and thus less likely to have made follow-up visits for psychiatric care. Moreover, consistent with the theory of competing demands,\textsuperscript{50} medical illness may overshadow—for providers, patients, and families alike—need for psychiatric follow-up care. Medical services have traditionally been more responsive to functional and social needs, and thus often serve as a gateway to supportive services that respond to medical and functional problems, perhaps more than to mental disorder.
Implications for Behavioral Health Services

Findings have implications for mental health practice, policy, and research. From a practice perspective, psychiatrists and physicians treating older adults with depression should assess, monitor, and address their psychosocial needs. For older adults hospitalized for depression, discharge planners and social workers should carefully address and plan for post-acute care for psychosocial needs. Physicians, the providers with whom adults may be most closely tied, should work collaboratively to link depressed older adults with social service agencies, adult daycare, organized meal programs, transportation services, and sources for case management and counseling. Providers and families should ensure that medical needs do not overshadow psychiatric care needs.

From a policy perspective, the availability of mental health services in rural areas should be addressed through such approaches as telemedicine and mental health training for health care providers. Research that documents the contribution to psychosocial care to psychiatric and medical outcomes may inform reimbursement policies for psychosocial services. Variation in, and challenges to providing, quality care need to be better understood, particularly among high-cost, high-need populations such as that studied here.

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