ARTICLE

EXAMINING THE EFFECTS OF ETHNIC-SPECIFIC SERVICES: AN ANALYSIS OF COST-UTILIZATION AND TREATMENT OUTCOME FOR ASIAN AMERICAN CLIENTS

Anna Lau
University of California, Los Angeles
Nolan Zane
University of California, Santa Barbara

Ethnic-specific mental health services have developed to meet the unique cultural and linguistic needs of the ethnic client. It has been assumed that this type of service configuration provides more accessible, culturally-responsive mental health care, which in turn, encourages utilization and enhances outcomes. Previous studies have found that ethnic-specific services (ESS) increase utilization of mental health services, but there has only been inconsistent evidence that ESS results in better outcomes. This study compared patterns of the cost-utilization and outcomes of Asian American outpatients using ESS to those Asians using mainstream services. Consistent with earlier studies, cost-utilization for ESS Asian clients was higher than that for mainstream Asian clients. Better treatment outcome was found for ESS clients compared to their mainstream counterparts, even after controlling for certain demographics, pretreatment severity, diagnosis, and type of reimbursement. Moreover, there was a significant relationship between cost-

This study was supported by the National Research Center on Asian American Mental Health (National Institute of Mental Health grant MH-44331).

The authors would like to thank the following individuals who provided invaluable assistance to the project: David Takeuchi, for providing insightful reviews of earlier drafts of the article; and Mang-King Cheung and Jonathan Kaplan, for data screening and data preparation for the analysis.

Correspondence to: Anna Lau, Department of Psychology, University of California, Los Angeles, 405 Hilgard Avenue, Los Angeles, CA 90095-1563. E-mail: asllau@ucla.edu

JOURNAL OF COMMUNITY PSYCHOLOGY, Vol. 28, No. 1, 63–77 (2000)

CCC 0090-4392/00/010063-15

utilization and outcome for ESS clients, whereas for mainstream clients, this relationship was not significant. The findings strongly suggest that mental health services with an ethnic-specific focus provide more effective and efficient care for at least one ethnic minority group. Implications for the delivery of culturally-competent mental health services are discussed. © *2000 John Wiley & Sons, Inc.*

Originally, ethnic-specific mental health services (ESS) were established in recognition of the need to provide culturally responsive mental health care for ethnic communities. It is assumed that ESS have features which provide a better fit with the socio-cultural and community life contexts of ethnic minority clientele. Such features involve the recruitment of ethnic personnel, modifications in treatment practices that are presumably more culturally relevant, and fostering an atmosphere in which services are provided in a culturally familiar context. These services are located in communities with relatively large ethnic minority populations and serve predominantly ethnic minority clientele (Takeuchi, Sue, & Yeh, 1995).

The development of ESS occurred partly in response to previous research that often highlighted problems in the delivery of mental health services to ethnic minority communities. For Asian Americans, studies have consistently implicated the lack of appropriate services for this clientele. Asian Americans have typically underutilized mental health services in both inpatient and outpatient settings (Brown, Stein, Huang, & Harris, 1973; Kitano, 1969; Leong, 1994; Okano, 1978; Sue, 1977; Sue & Kirk, 1975; Sue & Sue, 1974; Yamamoto, James, & Palley, 1968). For example, in Sue's (1977) study on nearly 14,000 clients in the mental health system in the Seattle area, Asian Americans had significantly poorer outcomes as measured by premature termination rates, with over 50% failing to return after one session. This underrepresentation in mainstream service settings is not readily explained by a lower prevalence or severity of mental health problems in the Asian American community. Although major community epidemiological studies are lacking, evidence from clinical and treatment studies indicates that Asian Americans have significant mental health needs that equal or surpass those of other ethnic groups (Berk & Hirata, 1973; Ikeda, Ball, & Yamamura, 1962; Sue & McKinney, 1975). Thus, the underutilization of mental health services has been attributed to problems with cultural responsiveness in service delivery for this population.

Investigators have attempted to track utilization patterns of ethnic clients following changes in the mental health system. In their follow-up study, O'Sullivan, Peterson, Cox, and Kirkeby (1989) evaluated the Seattle-King County mental health system ten years after Sue's (1977) study. Using the same information system, these authors found some important changes. Ethnic minorities were no longer underutilizing services; their dropout rates had been reduced and were not much different from Whites. O'Sullivan and colleagues attributed the improvements to the increasing cultural responsiveness of the system embodied in the establishment of ethnic-specific mental health services, the increase in number of ethnic staff, and the encouragement and funding of innovative programs for ethnic minorities. Their inference, however, was based on a temporal link between the initiation of these programs and changes in utilization system-wide. Other studies have directly examined the effect of ESS on utilization and outcome for Asian American clients.

Zane, Hatanaka, Park, and Akutsu (1994) evaluated patterns of utilization and outcome at an ethnic-specific community clinic in Los Angeles. The authors collected data at the Asian Pacific Counseling and Treatment Center (APCTC). This agency, developed specifically to serve Asian Pacific communities in Los Angeles County, employed only bicultural, bilingual clinical staff. Collectively, the clinical staff covered nine Asian languages. Each therapist had a minimum of 3 years postgraduate experience working with Asian outpatients. Zane and colleagues found that ethnic specific services reduced service inequities (i.e., differential premature termination rates and treatment outcome) for Asian Americans, while not creating any such inequities for White clients.

Other studies have directly tested for differences in utilization rates and outcomes between mainstream and ethnic specific services. Three studies which analyzed data from the Los Angeles County Department of Mental Health found significant effects of ESS on utilization in different subsets of clients. In their investigation of ethnic minority adults in the Los Angeles County mental health system, Takeuchi et al. (1995) used an operational definition of ESS. A program with a majority (more than 50%) of clients from a specific minority group (e.g., Asian, Black, Mexican) was classified as a ethnic-specific. These authors found that ethnic clients who attended ethnic-specific programs had a higher return rate and stayed in treatment longer than those using mainstream services. The results were mixed when outcome was investigated. Another study found that Asian American adults diagnosed with Major Depression had higher participation in treatment, measured by number of sessions, in Asian-specific agencies than in mainstream agencies (Flaskerud & Hu, 1994). This study identified ethnic-specific agencies as those designated by the county to specifically serve Asian Pacific clients. Finally, a study by Yeh, Takeuchi, and Sue (1994) found that Asian American children who received services at an ethnic-specific center were less likely to drop out of services after the first session, utilized more services, and had higher levels of functioning at discharge than those who attended mainstream centers, even when variables including social class and level of functioning at admission were controlled. These investigators defined ethnic-specific centers as those established specifically to provide mental health services to the Asian community. Centers were designated as mainstream if they did not identify themselves as specifically serving an ethnic-specific community, and if they had Whites as their largest client group.

The finding that ESS increase utilization among Asian Americans in the public sector mental health systems has been heralded as a great success by individuals who have advocated for more responsive mental health services for this community. Longer amounts of time spent in mental health treatment typically have been associated with better outcomes (Baeklund & Lundwall, 1975; Luborsky, Chandler, Auerbach, Cohen, & Bachrach, 1971). The lower drop out rates imply that ESS are serving Asian Americans in a more responsive manner than are mainstream services. In addition, one study found better outcomes as measured by functioning at discharge (Yeh et al., 1994). However, the three studies which found positive ESS effects used a common dataset from one county mental health system. Further investigation with different Asian client populations and service agencies are needed to test the generalizability of these findings. However, the existing research suggests that ESS constitute a potentially effective mechanism for delivering culturally competent services to Asian American communities.

It is now clear that Asians utilize ethnic-specific public sector services more than mainstream public sector services, when both are available. What remains to be seen are the effects of increased utilization in ESS settings. Past studies have not addressed the question of the costs and outcomes of such programs. Moreover, the examination of out-

comes within an ESS configuration is important in view of the move towards accountability and quality of care in mental health systems. From the vantage point of evaluating the cost-effectiveness and appropriateness of services, a number of issues must be addressed with respect to effects associated with ESS. Along with the higher utilization of services, we would certainly expect increased costs to be associated with participation in ESS because cost is a direct function of utilization. However, it is assumed that the higher costs will be associated with benefits related to more effective and efficient care. First, if ethnic specific services are truly culturally-competent, then one would expect the increased utilization associated with ESS to be related to better outcomes. Second, an efficient allocation of services implies that clients should make greater use of less costly services which will decrease the likelihood of the use of more intensive services which are more costly to the system. Ensuring cost-effectiveness and quality of care typically involves holding care providers accountable for the amount and type of treatment administered. This ideally entails the elimination of unnecessary services and an increase in application of efficacious services. Thus, we can examine whether involvement in ESS is related to the lower use of these more intensive and expensive mental health services (e.g., crisis intervention). Finally, when these conditions of cost-effectiveness are met, one would expect greater costs and utilization to culminate in significantly better outcomes. In this case, we would expect the level of treatment use to be more strongly related to outcomes in ESS agencies compared with mainstream services.

There is convergent evidence that mainstream services have been less than responsive in providing mental health care to ethnic minority communities, and researchers and policy-makers have consistently called for alternative service configurations that apparently better address the needs of these underserved populations (e.g., Sue & Morishima, 1982). However, little research has examined the effects of such alternative services as ethnic-specific service centers. The present investigation examined issues regarding services provided to Asian American outpatient clients at ethnic-specific and mainstream agencies in one of the nation's largest mental health systems, the Los Angeles County system. The cost-utilization and outcomes associated with ESS and mainstream services were examined, controlling for potential confounds such as pretreatment level of severity, diagnosis, and demographic variables. The following four questions were addressed: First, were there differences in cost-utilization of services provided at ethnic-specific and mainstream agencies? Second, were there differences in treatment outcome associated with the use of ethnic-specific compared with mainstream services? Third, were there differences in the profile of types of services delivered to clients at ethnic-specific and mainstream agencies? Finally, were there concomitant differences in returns in outcome achieved at ethnic-specific and mainstream agencies?

METHODS

This study primarily examined differences in patterns of cost-utilization and outcomes in ethnic-specific and mainstream services. The population of interest was comprised of Asian American clients receiving outpatient care from agencies in the Los Angeles County Department of Mental Health.

Data

Data for the study were provided by the Automated Information System (AIS), maintained by the Los Angeles County Department of Mental Health. In the AIS, data are collected for the purposes of administration, revenue collection, clinical management, and

monitoring. Data are routinely collected on each client entering the county mental health system. Client information is collected on standardized forms and then transferred to a computerized file. The AIS records demographic information, clinical information, the type and units of service used, agency or provider identification, service cost, and reimbursement information.

The quality of the AIS data is controlled through a series of checks by the county Department of Mental Health. At the data entry stage, all data are entered in a fixed-format screen. Out of range values and certain logical and substantive inconsistencies are not permitted by the data entry program. Although the county has not conducted reliability studies on the data, the information has been audited and verified by the county and the state, particularly those variables relevant to financial matters such as service costs, number of sessions, and type of treatment provided (Sue, Fujino, Hu, Takeuchi, & Zane, 1991). Finally, the county monitors and reviews AIS operations and data entry. In 1985, the county AIS system received the Award of Excellence from the National Association of Counties.

Sample Description

The study sample included Asian Americans of all ages who used mental health services at an outpatient mental health facility in Los Angeles during the period from 1993 to 1994. The analysis was confined to the clients first episode of care during that period, such that each individual client contributed only one episode to the analysis. Limiting analyses to the first episode avoided duplicate analyses and made the groups more comparable. The number of Asian Americans with first episodes was 3,178, in which 1,981 received services at ethnic-specific agencies and 1,197 received services at mainstream agencies.

Five ESS providers for Asian American clients were identified a priori. As in previous studies, these ethnic-specific centers were those identified by the county as serving the Asian Pacific communities and had been established specifically to meet their unique mental health needs (Flaskerud & Hu, 1994; Yeh et al., 1994). These agencies are located within high-density Asian American communities and employ bicultural, bilingual staff providing treatment programs tailored to the Asians in their catchment area. The characteristics of these service programs also conform to Sue's (1977) proposed definition of parallel service centers for ethnic minority communities. These centers are separate agencies in that they are independent of an existing facility. However, they provide services that are parallel to those provided by mainstream agencies in that the ethnically focused services are similar in function and structure those of the mainstream agencies. The ethnic-specific outpatient agencies in this study included the Asian Pacific Counseling and Treatment Center, the Asian Pacific Family Center, the Coastal Asian Pacific Mental Health Services Center, the Indochinese Counseling and Treatment Center, and the Long Beach Asian Pacific Mental Health Project. These agencies are all outpatient community mental health clinics in which over 75% of clientele are Asian American. Consistent with Yeh et al.'s (1994) criteria, mainstream agencies were designated as mainstream if they did not identify themselves as specifically serving an ethnic-specific community and if their largest client group was White.

Measures

To examine the effects of ESS, the study assessed demographics, cost-utilization, and clinical outcome.

Demographics. A number of client characteristics were entered as control variables in the multivariate analyses: age, private insurance coverage, public sources of reimbursement, diagnosis, and primary language. Age was defined as the client's age in years at the beginning of the treatment episode. A variable was used to indicate whether clients had some form of private insurance coverage, including health maintenance organization (HMO) membership or some other third party health insurance. Another variable was used to denote whether the client's services were reimbursed by public funding, including Short-Doyle provided by the County or Medi-Cal insurance provided by the state of California. A set of two dummy variables was used to indicate the client's clinical diagnostic category. Diagnoses were grouped into categories of 1) major affective disorders (e.g., depression, dysthymia, adjustment disorders with depressed mood, bipolar disorder); 2) schizophrenia and other psychotic disorders (e.g., delusional disorders); and 3) other disorders (e.g., anxiety disorders, eating disorders). Another variable was used to indicate whether or not the client's self-reported primary language was English.

Cost-utilization. Cost of services provided represents the total cost of the treatment episode from admission to discharge. The total cost is a composite of all costs incurred by a client across different outpatient service functions, including case management, individual therapy, group therapy, medication support, and crisis intervention services. The total cost represents all expenses incurred by the client for the entire treatment episode. As such, the total cost for services provided is a direct function of client utilization.

Clinical outcome. The Global Assessment Scale provides a rating of client's overall psychological, social, and occupational functioning. Therapists perform the ratings on a 100-point scale, with 1 indicating the most severe impairment and 100 referring to good functioning in all areas of life. The instrument is almost identical to the Global Assessment of Functioning Scale used on Axis V of the *Diagnostic and Statistical Manual of Mental Disorders* (revised 3rd edition). Reliability of the Global Assessment Scale has been found to be high (Endicott, Spitzer, Fleiss, & Cohen, 1976). The scale has been found to have good concurrent and predictive validity and is among the most useful instruments for measuring overall functioning (Sohlberg,1989). The measurement of functioning as an outcome variable reflects the move toward emphasizing community adaptation and living skills over symptom reduction in the public sector service delivery system. Therapists rated clients on the Global Assessment Scale at intake and following discharge.

Sample: Characteristics of Clients

This study examined Asian Americans receiving public sector outpatient mental health services in the Los Angeles County system. As such, the sample consists predominantly of chronic and severely mentally ill individuals.

Table 1 shows some characteristics of clients who entered the two types of agencies. Noteworthy differences were found between Asian American clients in ESS agencies compared to mainstream agencies (all listed differences were significant at the $p < .05$ level). In terms of clinical characteristics, mainstream agencies tended to serve more Asian Americans scoring in the most severe category of functioning—"Danger to self or others"—GAS 1 to 20 (8.6% vs. 1.3%). However, ESS Asians were more heavily represented among the second most severe category of functioning—"Impaired reality test-

Table 1. Client Characteristics across Mainstream and Ethnic Specific Services (ESS)

	Mainstream Asians (n = 1197)	*ESS Asians (n = 1981)*
Ethnicity		
Chinese	152 (12.7%)	387 (19.5%)
Japanese	158 (13.2%)	158 (8.9%)
Filipino	281 (23.5%)	113 (5.7%)
Other Asian Pacific	393 (32.8%)	198 (10%)
Korean	121 (10.1%)	385 (19.4%)
South East Asian	92 (7.7%)	740 (37.4%)
English Speaking	197 (16.5%)	66 (3.3%)
Mean Age	34.91 years	37.59 years
Percent Male	613 (51.2%)	894 (45.1%)
Financial Responsibility		
Private Insurance	34 (2.8%)	37 (1.9%)
Public Coverage	1126 (94.1%)	1939 (97.4%)
Out of Pocket	135 (11.3%)	414 (20.9%)
Diagnosis		
Major Affective	369 (30.8%)	941 (47.5%)
Schizophrenia	465 (38.8%)	667 (33.7%)
Other	363 (30.3%)	373 (18.8%)
Functioning at admission		
1. Danger to self/others	103 (8.6%)	25 (1.3%)
2. Impaired reality testing	701 (58.6%)	1517 (76.6%)
3. Impaired functioning	313 (26.1%)	401 (20.2%)
4. Severe to Moderate Sx	49 (4.1%)	17 (0.9%)
5. Absent to Mild Sx	0 (0.3%)	0 (0%)
Unknown	28 (2.3%)	21 (1.1%)
Mean GAS at admission	37.74	38.30

Note. Results of each Chi-Square analysis indicate that differences in proportions were significant ($p < .001$), with the exception of the private insurance variable ($p = .34$).
Financial Responsibility: Private insurance denotes HMO, PHP, or 3rd party insurance coverage.
Public coverage denotes either Short Doyle, Medi-Cal, CHAMPUS, or Medicare reimbursement.

ing"—GAS 21 to 40 (76.6% vs. 58.6%). Mainstream agencies served a slightly higher proportion of Asian Americans with psychotic disorders or schizophrenia (38.8% vs. 33.7%), while ESS agencies tended to serve more clients with major affective disorders (47.5% vs. 30.8%). These differences in client characteristics across provider types are consistent with those noted by Takeuchi et al. (1995) and Yeh et al. (1994). In terms of demographic characteristics, Asian Americans in ESS agencies had a higher mean age (37.61 years vs. 35.14 years), and were less likely to speak English (3.3% vs. 18.8%). Asian Americans in ESS agencies were more likely to pay out of pocket costs to subsidize other coverage (21.0% vs. 11.7%). This is some indication that the socioeconomic status (SES) of ESS clients may be higher than those in mainstream services. Pretreatment functioning and diagnoses may be significant predictors of treatment outcomes. Also, special language needs may be related to the cost of treatment (i.e., potential for translation needs) or to the outcome of treatment (e.g., more acculturative stress or difficulty in the therapy situation) (Aponte & Barnes, 1995). Similarly, reimbursement practices may be related to costs incurred and SES may be related to outcome (e.g., Schramski et al., 1984). Thus, these demographic, clinical, and financial responsibility variables were used as controls in the subsequent regression analyses.

Analyses

Multiple regression analyses were conducted to determine the effect of ESS, namely the service focus (ESS vs. mainstream), controlling for client characteristics including functioning at admission, age at admission, diagnosis at admission, primary language (other than English vs. English), private insurance (client having some third party insurance coverage vs. none), out of pocket payment (client paying some out of pocket fees for service vs. none), and public coverage (client's services being paid for by the state or county vs. not). The dependent variables were cost-utilization as measured by the total cost of the episode and treatment outcome as measured by the Global Assessment Scale score at discharge.

RESULTS

Cost-Utilization

Table 2 presents the summary of the multiple regression results for cost-utilization. Service focus was a significant predictor of cost-utilization. Outpatient clients treated at ethnic-specific centers had higher total costs per episode than those receiving outpatient services at mainstream centers. The other significant predictors of total cost were out of pocket payments, level of functioning at admission, and level of functioning at discharge. Younger clients and those who paid some out of pocket fees incurred higher costs over the treatment period. As might be expected, those clients with more impaired functioning at admission were more expensive to treat. Also, those clients with higher functioning at discharge incurred higher costs during the treatment episode. Diagnoses variables were not significantly related to total costs incurred per episode. It should be noted that the total variance explained by this model is low ($R^2 = .050$). It appears that the total cost of the episode is multi-determined and not well accounted for by the independent variables under investigation.

Table 2. Summary of Simultaneous Multiple Regression Analysis for Variables Predicting Cost-Utilization

Variable	*B*	*SE B*	*Beta*
Service Focus[a]	488.031	93.998	.186***
Out of Pocket Payment	257.865	116.590	.074*
Functioning at Admission	−10.270	4.703	−.096*
Functioning at Discharge	7.477	3.458	.094*
Age	−2.417	1.294	−.062
Diagnosis of Affective Disorder	−3.306	101.646	−.001
Diagnosis of Schizophrenia	−85.311	113.568	−.030
Primary Language[b]	129.873	92.676	.049
Private Insurance	−379.700	261.584	−.048
Public Coverage	−78.114	160.181	−.016
			$R^2 = .05$***

[a]Ethnic-Specific agency = 1, Mainstream agency = 0.
[b]English = 1, non-English = 2.
*$p < .05$; **$p < .01$; ***$p < .001$.

Table 3. Summary of Simultaneous Multiple Regression Analysis for Variables Predicting Treatment Outcome

Variable	*B*	*SE B*	*Beta*
Functioning at Admission	.833	.036	.619***
Diagnosis of Schizophrenia	−.943	1.081	−.028***
Public Coverage	4.238	1.528	.071**
Service Focus[a]	2.337	.897	.071**
Primary Language[b]	1.824	.886	.055*
Diagnosis of Affective Disorder	−3.810	.973	−.107
Age	.001	.012	.011
Private Insurance	−3.804	2.503	−.301
Out of Pocket Payment	.208	1.117	.005
			R^2 = .451***

[a]Ethnic-Specific agency = 1, Mainstream agency = 0.
[b]English = 1, non-English = 2.
*$p < .05$; **$p < .01$; ***$p < .001$.

Treatment Outcome

Table 3 presents the summary of the multiple regression results for treatment outcome. After controlling for level of functioning at admission, diagnosis, primary language, age, and insurance coverage, there was a significant effect for service focus. Asian Americans receiving services at ethnic-specific centers had more favorable treatment outcomes than those using mainstream services. For these analyses, the linear model was significant with the predictors accounting for close to half of the variance (45%) in treatment outcome. Another variable that was predictive of outcome included a diagnosis of schizophrenia, which was associated with poorer outcome. Finally, having public insurance coverage and speaking a primary language other than English were related to more favorable outcomes.

Profile of Utilization

Figure 1 shows a comparison of cost per episode by the type of service between ESS and mainstream programs. A one way analysis of variance (ANOVA) indicated that each type of outpatient service was more costly per episode in ESS programs than in mainstream programs ($p < .001$), with the exception of crisis intervention. ESS agencies were more expensive in delivering case management ($211.93 vs. $155.31), individual therapy including collateral sessions ($1302.66 vs. $572.93), group therapy ($130.89 vs. $68.81), and medication support ($647.13 vs. $549.30). Conversely, crisis intervention was more costly in mainstream programs than in ESS programs ($107.27 vs. $20.64). As expected from the above results, the mean total cost per episode was higher in ESS programs than in mainstream programs ($2313.27 vs. $1453.62).

Statistically significant differences between ESS and mainstream programs for the various types of services are not surprising given the large samples in the study. To determine if the magnitude of each difference was substantial, an effect size analysis was conducted. Computation of the effect size associated with each mean difference in cost-utilization between ESS and mainstream settings revealed that the greatest effects of service focus were for individual therapy and crisis intervention. The effect size for

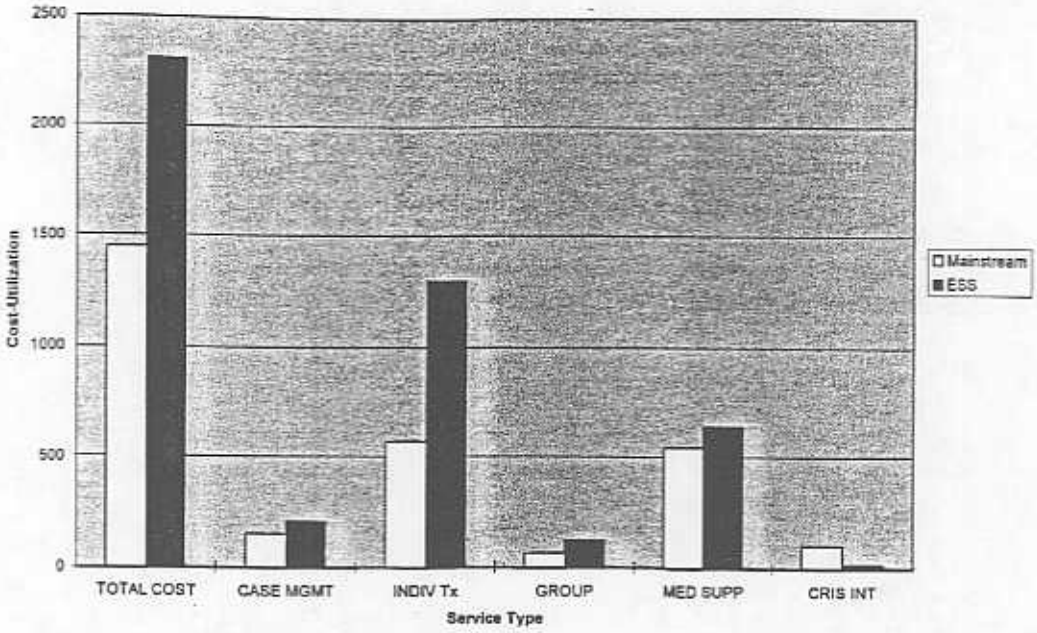

Figure 1. Cost by Service Type: Mainstream vs. ESS Asian Outpatients.

individual therapy was .546 indicating a moderate-to-large effect of service focus on cost-utilization. It appears that the difference in cost-utilization across all services was due in large part to the greater expenditure for individual therapy in ESS agencies. However, crisis management was a more costly expenditure in mainstream settings, the effect size was −.286, indicating a low-to-moderate effect of service focus on cost-utilization. Effect sizes of service focus on cost-utilization for case management, medication support, and group therapy were low, ranging from .094 to .110.

Regression analyses were conducted to further examine the effect of service focus on the cost-utilization of the two types of service associated with the greatest effect sizes. Results indicated that service focus was still found to be a significant predictor of the cost of individual therapy and of crisis intervention, when relevant clinical and demographic variables were controlled.

Use of ESS was related to higher individual therapy costs, controlling for diagnosis, severity at admission, age, primary language, and financial responsibility variables. Service focus was the strongest predictor among all of those analyzed ($\beta = .26$, $p < .000$). Other variables that significantly and independently related to higher individual therapy costs were having a diagnosis of major affective disorder, being younger, paying out of pocket fees, and speaking English as one's primary language. The total variance explained by this model was low ($R^2 = .084$, $p < .000$), indicating that, like the total cost, the cost of individual therapy was multi-determined and not well explained by the predictor variables in the equation.

Mainstream service use was associated with higher crisis intervention costs, controlling for clinical and demographic variables. Again, service focus was the strongest of the predictor variables in the regression equation ($\beta = -.15$, $p < .000$). Other significant predictors of higher crisis intervention costs included having public sources of reimbursement and lower levels of functioning at admission. As with other the cost models,

this regression model accounted for a low proportion of the variance in crisis intervention costs ($R^2 = .046$, $p < .000$). As will be discussed later, crisis intervention services are considered tertiary mental health services and are considerably more expensive per unit of service than are other outpatient services.

Relationship of Cost-Utilization and Treatment Outcome

Finally, regression analyses were conducted to test the relationship between cost-utilization and treatment outcome. In particular, this analysis focused on the relationship between use or cost of individual therapy and outcome. The cost of this type of outpatient service was selected as an independent variable because, as suggested in the effect size analysis, the discrepancy in total cost between ESS and mainstream agencies was mostly accounted for by the differential use of individual therapy (see Figure 1). Multiple regression procedures were run separately for mainstream and ESS clients to test for a moderating effect of service focus. As shown in Table 4, after controlling for level of functioning at admission, diagnosis, primary language, age, and financial responsibility variables, costs associated with using individual therapy was a significant predictor of treatment outcome. However, among Asian Americans using mainstream services, this relationship was not significant. That is, in mainstream settings the amount and cost of individual therapy was not significantly related to outcome when level of functioning at admission, diagnosis, and other demographic variables were controlled (see Table 5). It appears that the increased utilization and increased cost associated with attendance at ESS agencies is directly related to better outcome in treatment. On the other hand, when Asian clients used mainstream services, greater dosage (in terms of time in treatment) was not associated with more positive outcomes.

DISCUSSION

There is growing consensus among researchers and care providers that mainstream mental health services often fail to provide appropriate care to many ethnic minority communities. However, what remains unclear is the extent to which service arrangements

Table 4. Summary of Simultaneous Multiple Regression Analysis for Variables Predicting Outcome in ESS Settings

Variable	*B*	*SE B*	*Beta*
Functioning at Admission	.840	.098	.431***
Individual Therapy Cost	.002	.001	.106*
Private Insurance	−7.502	3.481	−.105*
Diagnosis of Schizophrenia	−2.339	1.923	−.077
Diagnosis of Affective Disorder	−1.308	1.586	−.050
Primary Language[a]	−1.561	1.682	−.046
Age	.009	.013	.032
Public Coverage	3.915	3.588	.052
Out of Pocket Payment	.321	1.448	.011
			$R^2 = .238$***

[a]English = 1, non-English = 2.
*$p < .05$; ***$p < .001$.

Table 5. Summary of Simultaneous Multiple Regression Analysis for Variables Predicting Outcome in Mainstream Settings

Variable	*B*	*SE B*	*Beta*
Functioning at Admission	.818	.039	.660***
Diagnosis of Schizophrenia	−.629	1.343	−.114***
Primary Language[a]	2.893	1.058	.082*
Public Coverage	5.049	1.726	.088*
Diagnosis of Affective Disorder	−.629	1.261	−.016
Age	−.002	.033	−.022
Private Insurance	2.124	3.547	.017
Out of Pocket Payment	−.144	1.714	−.002
Individual Therapy Cost	.001	.001	.050
			R^2 = .537***

[a]English = 1, non-English = 2.
*$p < .05$; ***$p < .001$.

designed to serve as alternatives are more effective than their mainstream counterparts. The present study focused on ESS for Asian Americans and tested certain hypotheses associated with ESS programs. First, due to the greater access to services, such programs have been expected to show higher utilization rates among the targeted minority population. Second, with greater access to care, it is expected that Asians clients using ESS services would have less need to use more emergency, crisis-based interventions which are the most costly to the mental health system. Third, these programs should produce better outcomes in treatment as the result of more culturally responsive care being provided by bicultural, bilingual workers in ESS settings. Finally, if services at ESS settings are being provided in a more appropriate and effective manner compared with those provided at mainstream settings, there should be a stronger relationship between the amount of service given and treatment outcome for ESS clients compared with their mainstream counterparts. The current study found support for all four hypotheses. An effect for service focus (ESS vs. mainstream) on cost-utilization persisted even after differences in client characteristics were controlled. ESS clients used significantly less crisis intervention services and significantly more individual therapy services. Use of ESS was also associated with better treatment outcome, and this effect was found after controlling for certain clinical and demographic variables that have been found to be related to treatment outcome. Moreover, in ESS settings, more intense use of individual therapy was associated with better outcome. The relationship was found even after controlling for functioning at admission, diagnosis, age, primary language, and reimbursement variables. This relationship between cost-utilization and outcome was not found among Asian American clients using mainstream agencies.

This study is the first to compare cost of ethnic-specific and mainstream agencies for an ethnic minority group. Greater costs were associated with Asian American clients using ESS compared with those using mainstream services. However, higher costs would be expected because cost is a direct function of utilization, and higher utilization among ethnic minority clients has been the most consistent finding in studies of ESS programs (e.g., Yeh et al., 1994). The higher costs associated with greater utilization of ESS appears appropriate when placed in the context of the other major findings of the study. Participation in ESS was associated with better outcomes. Second, there was a significant rela-

tionship between cost-utilization and treatment outcomes for ethnic-specific programs, but this relationship was not significant for mainstream services. That is, those clients in ESS programs who received more care experienced better treatment outcome than those who received less care, whereas, in mainstream programs, the level of care provided was not related to how clients responded to treatment. Third, while ESS clients used certain services such as individual therapy more, they also made less use of emergency based, crisis intervention services. In medical settings, it has been found that increased levels of primary care are associated with lower use of emergency and inpatient services later (Forrest & Starfield, 1996). It has been argued that ethnic minority clients who are denied access to culturally responsive outpatient services lapse into crisis, and they may become greater users of inpatient or day treatment services. The findings suggest that ESS programs may have prevented this from happening. The current study only examined first episodes of treatment and cannot directly address the hypothesis that the early use of ESS results in a lower need for emergency and inpatient services. Longitudinal investigations are required to explore what effects ESS may have on the utilization careers of clients.

Finally, it should be noted that the level of utilization reported by Asians in ethnic specific services does not appear to be excessive. Cost figures can be considered in context by reviewing the cost per session for each type of service. In terms of outpatient costs: one session of case management costs between $85 and $100, one weekly session of individual and group therapy costs $120, one monthly session of medication support costs $260, and one session of crisis intervention costs $250. Thus, the mean total cost per episode of individual therapy of $1302.66 corresponds to 10.8 sessions. According to an often-cited study of the dose-response relationship in psychotherapy, the chances of measurable and distinct improvement are 50% after eight sessions of individual outpatient psychotherapy, and do not rise to 75% until 26 sessions (Howard et al., 1986). The average Asian American client in ESS used 10.8 sessions and this level does not appear to reflect service overutilization.

These findings strongly suggest that ESS programs constitute a promising mechanism for delivering mental health services to in ethnic minority communities. However, there is a clear need for replication studies given the limitations of the present investigation. The study only examined utilization and outcome for one ethnic-minority group. The mental health needs and issues of other minority groups are somewhat different so that the effects of ESS programs may also differ for these ethnic minority clients. This investigation used data supplied by a large information management system derived from naturalistic settings. Since these data were confined to variables captured by the county's information system, it was not possible to control for several factors which may have influenced the results. Clients who entered treatment in ethnic-specific centers may have differed from those who entered mainstream services on characteristics not measured in this study. In addition, administrative, financial arrangement, staffing, and resource differences may have existed between ethnic-specific and mainstream agencies that would influence clinical outcome and/or cost-utilization. For example, one alternative explanation for the outcome findings is that therapists at ethnic-specific agencies may have been under more institutional pressure to document improvements in functioning at post-treatment. Nevertheless, these findings are encouraging in that ESS agencies appeared to be providing culturally responsive services which increased utilization and enhanced treatment outcome. A productive direction for future investigation would involve a multi-level analysis (e.g., client-therapist, agency climate, and service system levels) of how ESS programs actually function to affect clients, the surrounding communities and the mental health system.

REFERENCES

Aponte, J.F., & Barnes, J.M. (1995). Impact of acculturation and moderator variables on the intervention and treatment of ethnic groups. In J.F. Aponte, R.Y. Rivers, & J. Wohl (Eds.), Psychological Interventions and Cultural Diversity (pp. 19–39). Boston: Allyn & Bacon.

Baekelund, F., & Lundwall, L. (1975). Dropping out of treatment: A critical review. Psychological Bulletin, 82, 738–783.

Berk, B., & Hirata, L. (1973). Mental illness among the Chinese: Myth or reality? Journal of Social Issues, 29, 149–166.

Brown, T., Stein, K., Huang, K., & Harris, D. (1973). Mental illness and the role of mental health facilities in Chinatown. In S. Sue & N. Wagner (Eds.), Asian Americans: Psychological perspectives (pp. 212–231). Palo Alto: Science and Behavior Books.

Endicott, J., Spitzer, R.L., Fleiss, J.L., & Cohen, J. (1976). The Global Assessment Scale: A procedure for measuring overall severity of psychiatric disturbance. Archives of General Psychiatry, 33, 766–771.

Flaskerud, J.H., & Hu, L. (1994). Participation in and outcome of treatment for Major Depression among low income Asian Americans. Psychiatry Research, 53, 289–300.

Forrest, C.B., & Starfield, B. (1996). The effect of first contact care with primary care clinician on ambulatory health care expenditures. Journal of Family Practice, 43, 40–48.

Howard, K.I., Kopta, S.M., Krause, M.S., & Orlinsky, D.E. (1986). The dose effect relationship in psychotherapy. American Psychologist, 41, 159–164.

Ikeda, K., Ball, H., & Yamamura, D. (1962). Ethnocultural factors in schizophrenia: The Japanese in Hawaii. American Journal of Sociology, 68, 242–248.

Kitano, H. (1969). Japanese-American mental illness. In S. Plog & R. Edgerton (Eds.), Changing Perspectives in Mental Illness (pp. 258–284). New York: Holt, Rinehart, & Winston.

Leong, F.T.L. (1994). Asian Americans' differential patterns of utilization of inpatient and outpatient public mental health services in Hawaii. Journal of Community Psychology, 22, 82–96.

Luborsky, L., Chandler, M., Auerbach, A.H., Cohen, J., & Bachrach, H.M. (1971). Factors influencing the outcome of psychotherapy: A review of quantitative research. Psychology Bulletin, 75, 145–161.

Okano, Y. (1978). Survey of Asian Pacific patients at Metropolitan State Hospital. Unpublished manuscript.

O'Sullivan, M.J., Peterson, P.D., Cox, G.B., & Kirkeby, J. (1989). Ethnic populations: Community mental health services ten years later. American Journal of Community Psychology, 17, 17–30.

Schramski, T.G., Beutler, L.E., Lauver, P.J., Arizmendi, A., & Shanfield, S.B. (1984). Factors that contribute to posttherapy persistence of therapeutic change. Journal of Clinical Psychology, 40, 78–85.

Sohlberg, S. (1989). There's more in a number than you think: New validity data for the Global Assessment scores. Psychological Reports, 64, 455–461.

Sue, S. (1977). Community mental health services to minority groups. American Psychologist, 32, 616–624.

Sue, S., Fujino, D.C., Hu, L., Takeuchi, D.T., & Zane, N. (1991). Community mental health services for ethnic minority groups: A test of the cultural responsiveness hypothesis. Journal of Consulting and Clinical Psychology, 59, 533–540.

Sue, D.W., & Kirk, B. (1975). Asian Americans: Use of counseling and psychiatric services on a college campus. Journal of Counseling Psychology, 22, 84–86.

Sue, S., & McKinney, H. (1975). Asians-Americans in the community health care system. American Journal of Orthopsychiatry, 45, 111–118.

Sue, S., & Morishima, J.K. (1982). The mental health of Asian Americans. San Francisco: Jossey-Bass.

Sue, S., & Sue, D.W. (1974). MMPI comparisons between Asian American and non-Asian students utilizing a student health psychiatric clinic. Journal of Counseling Psychology, 21, 423–427.

Takeuchi, D.T., Sue, S., & Yeh, M. (1995). Return rates and outcomes from ethnicity-specific mental health programs in Los Angeles. American Journal of Public Health, 85, 638–643.

Yamamoto, H., James, Q., & Palley, N. (1968). Cultural problems in psychiatric therapy. General Archives of Psychiatry, 19, 45–49.

Yeh, M., Takeuchi, D.T., & Sue, S. (1994). Asian American children treated in mental health system: A comparison of parallel and mainstream outpatient service centers. Journal of Clinical Child Psychology, 23, 5–12.

Zane, N., Hatanaka, H., Park, S.S., & Akutsu, P. (1994). Ethnic-specific mental health services: Evaluation of the parallel approach for Asian American clients. Journal of Community Psychology, 22, 68–81.