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RESIDENTIAL STATUS AND THE PHYSICAL HEALTH OF A MENTALLY ILL POPULATION

STEVEN P. SEGAL, DEBRA J. VANDERVOORT, AND LAWRENCE H. LIESE

Current literature suggests that severely mentally ill individuals are at high risk for increased physical morbidity and mortality. This study considers the relationship between residential arrangements and the health status of this population. It compares the health status of 234 severely mentally ill individuals living throughout California in sheltered-care facilities, institutions, or the general community. Sheltered-care residence was found to predict positive physical health status when traditional risk factors, as well as risk factors peculiar to this population, were controlled for. The results underscore the value of sheltered-care residence for severely mentally ill individuals who need this type of care. Implications of the results are discussed.

Key Words: *physical health; mentally ill people; sheltered care*

The community mental health movement of the 1960s resulted in a change in the locus of treatment for severely mentally ill individuals from institutional settings to the community (Roca, Breakey, & Fisher, 1987). What effect this shift has had on the physical health of this population is not clear. However, substantial evidence indicates that psychiatric populations are at a high risk for increased physical morbidity and mortality (Babigian & Odoroff, 1969; Eastwood, 1975; Hall, Gardner, Popkin, LeCann, & Stickney, 1981; Koranyi, 1979; Marticle, Hoffman, Bloom, Faulkner, & Keepers, 1987;

Segal & Kotler, 1991; Tsuang, Woolson, & Fleming, 1980). Despite the high morbidity and mortality rates for this population, little is known about factors related to this risk.

Although suicide and accidental death account for some of the excess mortality rate of the severely mentally ill population, illness is another major factor (Koranyi, 1977; Martin, Cloninger, Guze, & Clayton, 1985; Tsuang et al., 1980). One reason for high mortality rates as a function of illness may be due to the high incidence of unrecognized medical disorders among psychiatric populations (Hall et al., 1981; Karasu,

Waltzman, Lindenmeyer, & Buckley, 1980; Koranyi, 1979). In addition, obtaining adequate physical health care is difficult for this population for a number of reasons, including inability to negotiate complex organizational systems, financial difficulties, geographic inaccessibility, and poor patient-practitioner relationships (Lieberman & Coburn, 1986).

Whereas it is clear that psychiatric populations tend to be less healthy than nonpsychiatric populations, the reasons for the poor health status of the former are not well understood. One question that has not received much attention is the effect of residential status on the physical health status of the severely mentally ill individual. The shift in the locus of care from institutional to community settings also entailed a change in the nature of care this population receives. For example, the type of care a severely mentally ill person receives in a state hospital is different than that received in a sheltered-care home. Only one study has addressed the impact of different types of residential settings on physical health status. Haugland, Craig, Goodman, and Siegel (1983) compared psychiatric patients who resided in hospitals with those who lived in the community. They found that deaths caused by cancer, accidents, and suicide were higher for those who lived in the community, indicating that deinstitutionalization has had some serious adverse consequences.

To date, the question of the physical health consequences of sheltered-care residences (for example, board and care homes, family care homes, psychosocial rehabilitation facilities, and halfway houses) versus other types of nonhospital or community-based residences for the severely mentally ill population remains unaddressed. Given that as many as one-third of this population in supervised residential placements reside in sheltered-care facilities (Rochefort, 1989), the consequences of living in this type of setting are important. Hence this study was undertaken to compare the health status of severely mentally ill individuals who reside in sheltered-care facilities with those who reside in the general community (for example, living in their own or in rented houses or apartments, with family, or in a hotel) or in

institutional facilities (for example, living in psychiatric hospitals, nursing homes, and criminal facilities).

METHOD

Subjects

This study is part of a 12-year follow-up study of a representative probability sample of 393 severely mentally ill people residing throughout California in sheltered-care facilities (Segal & Aviram, 1978). Of the 393 residents interviewed in 1973, 360 were located 10 to 12 years later. Of these residents, 270 were alive, and 90 were confirmed dead. Of the 270 residents who were still alive, 253 consented to be reinterviewed. The responses of 19 people were deleted from consideration because of questionable validity of the information they provided. Thus, the sample consisted of 234 subjects.

Instruments

Health Data and Health Status Measures.

The health section of the 1985 interview was patterned after the annual National Health Interview Survey. Three self-report health status scales were created from this section to assess health status in 1985: (1) the Health Problems Scale (HPS), (2) a health comparison with people one's own age, and (3) the number of days spent in bed in the two weeks before the interview (bed days). The HPS determines the number of problems, out of a possible 10, experienced in the past six months. The problems are hardening of the arteries; high blood pressure; heart trouble; a stroke or general neurological problems; Parkinson's disease; epilepsy or seizures; fainting or loss of consciousness; trouble controlling bowel movement or urination; trouble with the teeth or gums; and other injury or chronic condition. The Cronbach's alpha reliability coefficient measuring the internal consistency of the HPS was .57 ($n = 219$). The relatively low alpha indicates that HPS disorders reflect the multidimensional and, therefore, somewhat independent nature of severe disorders.

During the health comparison respondents were asked to compare their health with that of most people their own age. Choice of responses included better, about the same, and worse. Self-assessed health status has been found to be significantly correlated with objective measures of health (Brook et al., 1979; Lehman, Ward, & Linn, 1982).

The Physical Symptoms Scale (PSS) from the 1973 interview was used as a measure of health history. The PSS was created from the 22-item Langner Scale originally drawn from the midtown Manhattan study (Langner, 1962; Srole, Langner, Michael, Opler, & Rennie, 1962). Although the Langner Scale was originally designed as a mental health assessment instrument, it has been criticized because it assesses both physical and mental health status (Wells & Strickland, 1982). To help validate the 1973 PSS as a measure of physical health, information from the 1985 PSS was used. In 1985, the PSS was accompanied by a probe for each positive response to help distinguish between the physical and psychological aspects of a respondent's symptomatology. The probe consisted of asking the person whether a physician had been consulted about the problem and, if so, whether the symptom was caused by physical illness, according to the physician.

For six items in the 1985 follow-up interview, more than 40 percent of the respondents were told by their physicians that their symptom was caused by physical illness. These items, with the corresponding percentages of persons whose physicians indicated a physical illness was involved, were clogging or fullness in the head or nose (75.0 percent), shortness of breath (70.0 percent), trembling hands (62.5 percent), acid (sour) stomach (58.6 percent), headaches (46.2 percent), and a feeling of weakness all over (43.3 percent). The same six items from the 1973 data set were combined to form the 1973 PSS ($\alpha = .65$, $n = 223$). The correlation between the 1973 and 1985 PSS was highly significant ($r = .43$, $p < .001$, $n = 219$).

Psychopathology. Psychological functioning at follow-up was measured with the 16-item Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1962). The BPRS is a 16-item scale

in which each item ranges from 1 = not present to 7 = extremely severe. Trained social workers with at least one year's experience in working with severely mentally ill individuals were used as interviewers. Definitional anchors for each BPRS symptom item and films of interviews with patients conducted at the time of admission and discharge from the psychiatric hospital were used to train the interviewers. The interrater reliability for the total BPRS score, based on joint interviews conducted by three psychiatrists and our interviewer in 1973, was high ($r = .90$), as was the internal consistency of the BPRS ($\alpha = .79$). Using the same training procedures in 1985 as were used in 1973, the BPRS internal consistency rating increased to $\alpha = .86$.

Dual Diagnosis. Primary and secondary discharge diagnoses were obtained for 201 sample members from 1,038 of 1,159 episodes of psychiatric hospitalization. These episodes were derived from hospital records provided by 119 facilities, 90 of which were located in California and 29 out of state. Of the 119 facilities, 34 were state mental hospitals, 11 were Veterans Administration hospitals, 70 were local acute psychiatric facilities, and four were L-facilities or convalescent hospitals. The primary and secondary diagnoses consisted of their most recent primary and secondary diagnoses. Of the 201 individuals, 29 percent had a dual diagnosis (that is, a diagnosis of a psychiatric disorder as well as alcohol abuse, substance abuse, or both).

Stress. As research suggests that frequent minor stressors are more strongly associated with somatic illness than are rare major stressors (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982; Kanner, Coyne, Schaeffer, & Lazarus, 1981), degree of stress was assessed in this study with the use of items from the Hassles Scale (Kanner et al., 1981), which measures frequent minor stressors. The scale was reduced from 117 items to 46 items, given that many of the original items had little relevance to this population (for example, items dealing with children and work). Each item was rated on a four-point Likert scale from 0 = no hassle to 3 = extremely severe hassle. As with the original Hassles Scale, scores on all items were summed to determine the

overall degree of stress. The Hassles Scale had an internal consistency of $\alpha = .91$.

Social Security Income Status. Supplemental Security Income (SSI) status at follow-up (that is, whether the person received social security) was used in the multivariate analyses as a measure of ease of access to medical care. SSI recipients received MediCal (Medicaid), Medicare, or both, whereas other participants (whose median gross monthly income was \$433) probably could not afford alternate health insurance.

RESULTS

Sample demographic characteristics for the 234 residents are summarized as follows: 53.0 percent were male, and 47.0 percent were female; ages ranged from 28 to 75 ($M = 53.4$, $SD = 12.4$); 53.6 percent were never married, 5.6 percent were married, and 40.8 percent were divorced, widowed, or separated; 80.5 percent were SSI recipients; and 55.6 percent resided in sheltered-care facilities, 31.2 percent resided in the community (owned or rented their own apartment, 21.8 percent; lived with family, 6.4 percent; or lived in hotel, 3.0 percent), and 13.2 percent resided in institutions (most of whom [10.3 percent] were located in nursing homes). None of the participants were homeless at follow-up.

Significant differences between sheltered-care community and nursing home residents were observed in their age and social security status. Community-dwelling residents ($M_{\text{age}} = 50.2$) were younger than sheltered-care ($M_{\text{age}} = 55.2$) and nursing home ($M_{\text{age}} = 54.3$) residents [$F(2, 224) = 3.30$, $p < .05$]. Community (75.4 percent) and nursing home (71.4 percent) residents were less likely to be receiving SSI than were sheltered-care residents (87.7 percent) [$\chi^2(2) = 6.04$, $p < .05$].

More schizophrenic people were living in sheltered-care facilities (80.7 percent) and nursing homes (81.0 percent) than in community settings (66.7 percent). These differences, however, only approach significance [$\chi^2(2) = 4.56$, $p = .102$]. Only nine individuals (3.8 percent) had a diagnosis of an affective disorder. These individuals were more likely to reside in com-

munity settings [$\chi^2(2) = 5.98$, $p < .05$]. No significant differences between individuals in the three residential settings were observed on gender, race, marital status, BPRS and Hassles scores, dual diagnosis, personality disorder, and PSS scores.

Overall use of health care services was measured by three factors: (1) the number of visits to a doctor or a doctor's assistant in the year before the 1985 interview ($M = 7.9$, $SD = 8.6$), (2) the number of months since the last medical visit ($M = 4.4$, $SD = 7.5$), and (3) the number of nonpsychiatric hospitalizations in the year before the 1985 interview ($M = 0.26$, $SD = 0.91$). The majority of participants (82.6 percent) had not been hospitalized.

The correlations between the three 1985 health status measures were as follows: HPS and health comparison ($r = -.24$, $p < .001$), HPS and bed days ($r = .30$, $p < .001$), and health comparison and bed days ($r = -.20$, $p < .01$). That the correlations between all three health status measures were significant and in the expected direction supports the reliability of these instruments. Their relatively low intercorrelations document the multidimensional nature of the health concept.

Univariate analyses revealed that severely mentally ill individuals who live in the community are three times more likely than those who live in sheltered care to rate their health worse than people their own age (26.6 percent versus 8.5 percent; $\chi^2 = 13.5$, $p < .01$). Furthermore, sheltered-care residents, who are significantly older than community-dwelling individuals, reported fewer health problems. That is, sheltered-care residents scored significantly lower on the HPS than did community-dwelling or nursing home and institutional residents [$F(2, 223) = 4.4$, $p < .05$]. In addition, sheltered-care residents reported fewer bed days in the two weeks before the 1985 interview than did community-dwelling or nursing home and institutional residents [$F(2, 223) = 4.6$, $p < .05$]. These findings were obtained even though community-dwelling residents reported easier access to medical care than did sheltered-care residents (that is, greater ease in obtaining medical care and arranging for transportation to such services). There were,

however, no significant differences between sheltered-care residents and community-dwelling residents on overall use of health care services at follow-up. Finally, community-dwelling residents reported no fewer health problems on the HPS than did nursing home and institutionalized residents.

Multivariate analyses involved the following independent variables: age, gender, psychopathology (as measured by the BPRS), health history (as measured by the 1973 PSS), dual diagnosis, stress, SSI status, and residential status. All variables except health history were taken from the 1985 interview. Two dummy variables were created for residential status: one for sheltered-care residence and one for nursing home residence (with community residence being the omitted category). (The seven individuals in other types of institutions were deleted from the analysis.) This division was made on the assumption that those individuals who reside in nursing homes have in-house medical care and hence may have their health care needs met more regularly than other residential groups.

Table 1 displays the results of the regression equations regarding health status. With the HPS as the dependent variable, stress and sheltered-

care residence were the most important contributors in the model. Thus, less severe stress (that is, less frequent minor stressors) and residing in sheltered care were related to fewer health problems in 1985 on the HPS.

In the second regression analysis, health comparison was the dependent variable. The 1973 PSS and sheltered-care and nursing home residence were the most significant factors in the model. Thus, better health history and residing in sheltered care were related to a more positive comparison of one's health with other individuals in one's own age group. Residing in a nursing facility led to a more negative comparison of oneself with others in their own age group.

In the third regression analysis, bed days was the dependent variable. The most significant factors here were sheltered-care residence and stress. Thus, residing in sheltered care and less stress were related to fewer bed days in the two weeks before the 1985 interview.

In sum, the most important predictors of reporting positive health status were sheltered-care residence, institutional residence, less stress, and a better health history. Whereas sheltered-care residence was significant in all three regression models, lower levels of stress were

Table 1. Regression Equation Results for Health Status and Residential Placement

Measure	Measures of Health Status		
	HPS (β)	HC (β)	Bed Days
Residential placement			
Sheltered-care residence	-.19**	.25**	-.26***
Nursing home residence	NS	-.22**	NS
Controls			
Psychopathology	.14*	NS	NS
Health history	NS	-.26**	.16*
Stress	.27***	NS	.19**
Age	.14*	NS	.17*
Gender	NS	NS	NS
Substance abuse	NS	NS	NS
SSI status	NS	NS	NS
Adjusted R^2	.12	.10	.14
F	3.1	2.6	3.5
df	9, 130	9, 125	9, 129

NOTE: All p values are two-tailed. HPS = Health Problems Scale; HC = health comparison with people one's own age; Bed Days = days spent in bed in the two weeks before the interview; NS = not significant; SSI = Supplemental Security Income.

* $p < .10$. ** $p < .05$. *** $p < .01$.

significant in two of the three models, and nursing home residence and a better health history were significant in one model.

DISCUSSION AND CONCLUSION

The findings indicate that residential status may play an important role in the health status of severely mentally ill individuals. When controlling for traditional risk factors (for example, health history, age, gender, stress, and substance abuse) as well as other known risk factors for this population (for example, psychopathology and SSI status), residing in sheltered care was related to positive health status on a variety of health status measures. This finding takes on additional significance because sheltered-care residents were significantly older than community-dwelling residents. These differences in health status cannot be explained on the basis of ease of access to services, for the only difference found here was that community-dwelling residents perceived easier access to health care services. In addition, these differences cannot be explained on the basis of differences in use of health care services, for none were found.

What may explain these health status differences in part is the nature of the sheltered-care environment. That is, in residential care, meals, shelter, medication, and some social activities are provided by the facility. In addition, many facilities provide on-site medical services such as weekly visits by a physician. For cases in which the same physician visits each week, greater consistency and quality care can be provided. It is the responsibility of community-dwelling residents to provide for their own needs. In times when an illness is severe, these residents may not be able to take care of some of their needs, further adding to their poor health. Thus, the supportive services received by sheltered-care residents may be responsible, in part, for their positive health status.

Although additional research in this area needs to be done before definitive conclusions can be drawn, this study suggests that the type of residential care severely mentally ill individuals receive has important consequences

for their physical health. Given limited financial resources for this population, coupled with questions regarding where these resources are best directed, this research suggests that resources are well spent on sheltered-care residences. For individuals who need the support and care this environment provides, it appears that sheltered care benefits not only their psychological well-being (Segal & Avarim, 1978), but also their physical health.

One important direction for future research involves the need to obtain more detailed information on individual health habits. Such information would have strengthened the results of this study. Future research should also use a longitudinal randomized clinical trial approach to the effects of sheltered care on health status. Another limitation of this study is that not all of the health status measures in the 1985 interview were included in the 1973 interview. If available, the use of medical records to replicate the study might yield a more detailed picture of the health status and needs of this population. Finally, researchers and mental health workers might look at designing and implementing programs to ensure the delivery of preventive medical services to severely mentally ill individuals as well as an adequate interface between primary care and mental health care services. This interface should involve a more aggressive outreach program and better case management services for those who reside in the community. Although financial constraints limit what can be done, attention to these issues may allow for an improvement in current policies.

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