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Authors

Segal, Steven P
Holschuh, Jane

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Effects of Sheltered Care Environments and Resident Characteristics on the Development of Social Networks

Steven P. Segal, Ph.D.
Jane Holschuh, M.S.W.

Two hundred and thirty-four members of a 1973 sample of sheltered care residents, three-fourths of whom had schizophrenic disorders, were followed up between 1983 and 1985 to examine the role of supportive and of transitional, high-expectation sheltered care environments in the development of residents' social networks. The influences of revolving-door treatment experiences, psychopathology, and institutionalization were taken into account. The results showed that supportive rather than transitional, high-expectation environments contributed to the development of emotionally and instrumentally supportive social networks. Higher levels of psychopathology and a history of institutionalization resulted in the absence of certain support relationships. Surprisingly, revolving-door treatment experiences were related to positive support and social network outcomes.

Dr. Segal is professor and director of the mental health and social welfare research group at the School of Social Welfare, University of California, 120 Haviland Hall, Berkeley, California 94720. Ms. Holschuh is a National Institute of Mental Health research fellow with the group. This paper was presented at the annual meeting of the American Public Health Association held September 30 to October 4, 1990, in New York City. It is part of a special section on housing and support programs for persons with severe mental illness.

Rigorous research has demonstrated the positive role that social networks and support play in outcomes experienced by persons with serious mental disabilities (1-3). Little has been done, however, to understand the factors most associated with the development of sound social networks (4-6). This paper examines the influence of two kinds of sheltered care environments on the development of social networks of residents with serious mental disabilities.

Current theoretical and political debates about the type of residential settings most likely to meet the needs of persons with serious mental disabilities (7,8) focus on whether supportive programs (9,10) or transitional, high-expectation programs (11-13) are the most effective. Much has been written about the potentially detrimental effects of transitional housing environments (14,15), high-expectation therapies (16), and overdemanding living conditions (15), as well as the need for highly supportive residences (17,18). Several states require individualized service plans that address the need for adequate and appropriate residential placement (19). Given the need to define "adequate" residential environments, and given the significance of social networks in outcomes for this population, it is important to determine the effects that supportive and transitional residential environments have on the development of social networks.

Three disadvantages that sheltered care residents experience to varying degrees—revolving-door treatment, psychopathology, and institutionalization—make it more difficult for them to achieve successful independent living (20). Besides studying the effects of the sheltered

care environment on social networks, we sought to document how these three disadvantages affected network building by sheltered care residents in both supportive and high-expectation environments. We hypothesized that residents who reported living in facilities characterized as more supportive, or less transitional and high-expectation, would develop larger social networks and networks in which they had relationships involving both emotional and instrumental support. Revolving-door treatment experiences, higher levels of psychopathology, and a history of institutionalization were expected to reduce the likelihood of residents' forming such networks.

Methods

Sample and data collection. The data were gathered as part of a ten-year longitudinal study of a probability sample of 393 adults with serious mental disabilities (excluding persons with developmental disabilities) living in 211 California sheltered care facilities in 1973. The sample, drawn from 157 census tracts, was designed to be representative of all sheltered care residents in California between the ages of 18 and 65 with a serious mental disability.

A total of 360 sample members (91.6 percent) were located at follow-up between 1983 and 1985. No differences were detected between those who were located and those who were not. This paper reports on the sample of 234 persons who completed valid interviews both in 1973 and at follow-up. Of these, 178 (76 percent) had a lifetime diagnosis of a schizophrenic disorder (21).

Structured interviews were completed by trained social workers at baseline in 1973 and at follow-up. Records detailing the lifetime psy-

chiatric hospitalizations of sample members were obtained at follow-up from 119 inpatient facilities in 15 states.

The survey methodology used in the 1973 study and at follow-up has been described elsewhere (21), as are the measures of health status and symptom assessments using the Brief Psychiatric Rating Scale (22) [see this issue, page 1132–1137].

Analysis. Using an ordinary least-squares regression model, we examined the effects of sheltered care environments and residents' disadvantages as both existed in 1973 on the size of the resident's social network at follow-up. We controlled for factors known to be associated with network outcomes. They are described below.

The analysis also used the Logit technique (23) to assess separately four dichotomous social support variables as outcomes. We used the same predictor variables to determine a resident's probability of having at least one relationship in which he or she routinely received emotional support, gave emotional support, received instrumental support, and gave instrumental support. An approximation of the relative risk of a resident's having each of these four types of relationship was obtained by calculating the odds ratio through a transformation of the beta coefficient of each independent variable. An odds ratio of 1.31, for example, means that a resident is 31 percent more likely to experience that type of relationship than not. An odds ratio of .38 means that a resident is 62 percent less likely.

Outcome criteria. Extensive information on residents' social networks was gathered at the follow-up interviews using the Pattison Psychosocial Kinship Inventory (PKI) (24). The PKI elicits information on network size and composition and characterizes the type of support, as emotional or instrumental, and its directionality, as given or received.

The size of the social network was established by asking respondents to list their social relationships during two separate interviews conducted two weeks apart. Specifically, residents were asked to identify "all peo-

ple who are important to you at this moment, whether you like them or not. These people may be, for example, other residents or staff here . . . residents at other homes, or neighbors or family, etc. Use your own definition of who is important to you." In addition to naming network members, respondents were asked to identify the type of relationship they had with each member. Three types of relationship were categorized—relationships with kin, with friends and acquaintances (informal nonkin), and with treatment system professionals or paraprofessionals (formal nonkin).

We were interested in determining the number of relationships a resident had at follow-up that involved receiving emotional support and the number that involved giving emotional support. Respondents were asked to indicate the degree to which each network member named helped them and the degree to which they helped that person by "providing emotional support" when needed. Response categories ranged from 1, not at all, to 5, very frequently. We considered only relationships in which the resident indicated that he or she received or gave emotional support often (a response category of 4) or very frequently.

Because quantifying the amount of emotional support is a subjective exercise, we decided that a conceptual approach should guide our choice of measurement. What seems most crucial to these residents is not necessarily how many relationships of each type they have but whether they have any at all (25–27). We therefore defined the outcome variables of emotional support by dichotomizing the residents' responses into those indicating no relationship that involved emotional support and those indicating at least one such relationship.

To measure instrumental support, respondents were asked to indicate the degree to which each network member helped them and they helped that person by "doing things" for them, such as assisting on the job, helping with household tasks, providing personal or family care, or even lending money. Response cate-

gories ranged from 1 to 5, as for emotional support, and we again considered only relationships in which the resident received or gave instrumental support often or very frequently. The outcome variables for instrumental support were similarly dichotomized.

Predictor variables. Residents were asked to characterize their sheltered care environments in 1973 by responding to items from two subscales of the Community-Oriented Programs Environment Scale (28). These measures of the supportive environment and of the transitional, high-expectation environment have been used extensively in residential facility assessment.

The support subscale is an eight-item true-false response measure designed to assess the extent to which "residents are encouraged to be helpful and supportive toward other residents, and how supportive the staff is toward residents" (29, p. 14). It was hypothesized that residents living in facilities that scored high on the support subscale in 1973 would have an increased probability of positive outcomes on all network characteristics.

The transitional, high-expectation subscale consists of ten true-false items that measure "the extent to which the resident's environment orients him toward preparing himself for release from the program, training for new kinds of jobs, looking to the future, and setting and working toward goals" (29, p. 41). Mental health professionals often criticize transitional residential programs for supporting "transitions to nowhere," that is, encouraging unrealistic expectations that emphasize social reintegration goals and opportunities that do not exist within current social, economic, and housing realities. It was hypothesized that residents whose facilities scored higher on the transitional, high-expectation subscale in 1973 would be less likely at follow-up to have developed social ties and the relationships associated with them. The total scores on both measures were used as continuous variables in the analyses.

Three resident characteristics that were hypothesized to negatively af-

fect a resident's ability to form social networks were measured. The severity of psychopathology at the time of the 1973 interview was assessed using the Brief Psychiatric Rating Scale (BPRS) (22,30,31); the score was based on clinicians' ratings of the severity of 17 symptoms. Ratings were based on interaction during the interview and the interviewees' descriptions of their behavior during the week before the interview. The BPRS score was used as a continuous variable in the analyses.

The socially debilitating effects of long-term hospitalization or institutionalization are well documented (32-36). Rose (37) and Evans and associates (38) reported that the longer a person was institutionalized, the more his or her social contacts, especially family relationships, became disrupted, disengaged, and disintegrated. During the 1973 interview, respondents were asked whether they had spent a continuous period of two or more years in a state psychiatric hospital. The response was coded as a dummy variable, with yes coded as 1 and no as 0. We used this hospital chronicity measure as an indicator of institutionalization (39) and hypothesized that institutionalization would be damaging to the development of supportive social networks.

To assess the impact of the revolving-door experience on network outcomes, the analyses included the number of times a resident had been in sheltered care from 1973 through the follow-up interview. A greater number of sheltered care experiences was expected to result in smaller networks and a paucity of relationships in which there was a significant amount of instrumental and emotional support at follow-up.

Control and baseline variables. The age in years of each respondent in 1973 was used as a continuous variable in the analysis. The gender of each resident was coded as a dummy variable, with males coded as 1 and females as 0. Because the literature on social support frequently reports a positive relationship between physical health status and the amount of support received (40-43), we controlled for physical health

Table 1

Social support networks reported at ten-year follow-up by 234 members of a 1973 sample of sheltered care residents, by size of network and composition

Number in network	Percentage of sample			Total with network of this size only
	Kin	Informal nonkin	Formal nonkin	
None	20.1	39.3	71.4	9.4
One or two	27.4	37.6	26.5	16.2
Three to five	50.0	21.4	2.1	38.9
Six to ten	2.6	1.7	0.0	35.5
Total	100.0	100.0	100.0	100.0

status in the analysis. Although much evidence demonstrates that social support is positively related to health status, the mechanisms of the association and the direction of the relationship have yet to be clearly understood (6,24,25,44-46).

The Physical Symptom Scale (47), which was used to measure health status in 1973 and at follow-up, is described in the accompanying paper (22). The score on the scale was the sum of reported symptoms. The 1973 score was used in the analysis.

Since this study attempted to document the influence of the social climate of the 1973 facility on the development of residents' networks, the total length of time spent in the original facility was included as a continuous control variable in the analysis. Respondents were asked during the 1973 interview how long they had been living in the current sheltered care facility. Additional time spent in the original facility between 1973 and follow-up was calculated on the basis of the residential history obtained at follow-up. Adding these two measures gave the total number of days that a resident lived in the 1973 facility.

To determine the effects of facility environments and residents' disadvantages on the development of social networks and support between 1973 and follow-up, we needed to control for baseline levels of support and social interaction in 1973. Because the PKI was not administered during the 1973 interview, we used as proxy measures two subscales of the External Social Integration Scale (48) that assess residents' access to

and participation in family and friendship activities. The family access and participation subscale is a six-item continuous measure that refers to the ease of contact with one's family by phone and visit and the frequency of such contact. Possible responses range from very difficult/never to very easy/very often. Previous results using the subscale have shown that relationships with the immediate family are generally confined to providing for basic needs and making obligatory social contact (48). Relationships with more distant kin take the form of more active involvement characteristic of friendship relationships.

The friendship access and participation subscale is a continuous measure of six items that parallel those of the family subscale but pertain to close friends and acquaintances rather than to immediate family and more distant relatives. Response categories were identical to those of the family subscale.

Results

Characteristics of the sample. Of the 234 sample members, 53 percent were male. The mean±SD age of the 234 sample members in 1973 was 43±12.53 years. Most reported few, if any, physical symptoms in 1973; 46 percent reported between one and three symptoms. Only 22.2 percent of the follow-up sample remained in the 1973 facility at follow-up; their mean±SD length of stay in that facility was 4.75±4.01 years. Over half of the follow-up sample (56.5 percent) were in the sheltered care system at follow-up.

Table 2

Type of supportive relationship and its directionality (support given or received) reported at ten-year follow-up by 234 members of a 1973 sample of sheltered care residents, in percentages of sample

Number of relationships	Emotional support		Instrumental support	
	Given	Received	Given	Received
None	51.7	40.2	56.8	46.6
At least one	48.3	59.8	43.2	53.4
One or two	22.2	31.6	26.5	35.0
Three to five	18.0	21.8	13.7	14.1
Six to ten	8.1	6.4	3.0	4.3

The majority (54.3 percent) of the 234 sample members experienced very mild psychological symptoms as measured by the BPRS. During the 1973 interview, 56.5 percent of them reported spending less than two continuous years in a mental hospital. In the follow-up sample, the mean±SD number of sheltered care experiences between 1973 and follow-up was 2.2±1.83.

Based on the scale scores, almost two-thirds (62 percent) of the 234 sample members viewed their 1973 facility environments as supportive; only one-third (35 percent) described their facilities as transitional in nature.

Network and support characteristics. At follow-up, the mean±SD number of network members named by the 234 sample members interviewed was 4.5±2.77. As shown in Table 1, only 9.4 percent named no "important person" or no network at all. While this is a sad commentary on the lives of these particular residents, the results do show that, contrary to popular conceptions, most of these former patients are not totally isolated and have relationships that are important to them.

More than half of the sample (55.1 percent) named from one to five network members, and more than a third (35.5 percent) named from six to ten members. Average networks for people in the general population range from 20 to 30 members, compared with four to six persons in psychiatric population samples (1,24, 49-52).

Two important features of the composition of the social networks were the large proportions with no

informal nonkin relationships (39.3 percent) and no formal nonkin relationships (71.4 percent).

As shown in Table 2, sample members were more likely to be receivers than givers of emotional and instrumental support.

While studies of the social networks of psychiatric patients often report that they have tightly knit or highly dense networks in which the vast majority of interaction is with the immediate family and other relatives (24,49,51,53), baseline data in 1973 indicated that they were equally as likely to score high on the family and friendship access and participation subscales as they were to score low. In 1973 they also reported about equal access to and participation with friendship relationships as with family relationships.

Effects of predictor variables. As hypothesized, and as shown in Table 3, when other variables were controlled for, residents who rated their environments higher on the transitional, high-expectation scale in 1973 had significantly smaller networks at follow-up ($t=-2.33$, $p=.02$). Contrary to our hypothesis, the more times a person had been in sheltered care from 1973 through follow-up, the more network members he or she named ($t=1.75$, $p=.08$).

In the four logistic regression models, most social environment factors as well as resident disadvantages were significantly related to residents' social support networks ($N=223$, $p<.001$). Table 4, which displays odds ratios, shows the relative risk of a resident's having a relationship involving emotional or instrumental support when each independent variable was considered separately while controlling for all other variables in the logistic model. Consistent with our hypothesis, for each standard deviation increase in the transitional, high-expectation subscale score, respondents were 28 percent less likely to have a relationship in which they received emotional support, 41 percent less likely to have a relationship in which they gave emotional support, and 46 percent less likely to have one in which they received instrumental support.

Table 3

Ordinary least-squares regression estimates of factors related to size of social network at ten-year follow-up of a 1973 sample of sheltered care residents¹

Variable	Regression coefficient	SE	Beta
Sheltered care environment			
Transitional, high-expectation subscale score	-.457**	.196	-.158
Support subscale score	.056	.194	.020
Residents' disadvantages			
Brief Psychiatric Rating Scale score	-.229	.187	-.087
Two or more years of continuous hospitalization	-.587	.380	-.107
N of times in sheltered care	.189*	.108	.128
Constant	6.518***	.881	

¹ $R^2=.119$, F ratio=2.590, $df=11,211$, $p=.004$; $N=223$. Analysis controls for age, gender, physical health status, total length of time in 1973 facility, and baseline network characteristics.

* $p<.10$, two-tailed test

** $p<.05$, two-tailed test

*** $p<.001$, two-tailed test

Table 4

Odds ratios showing effects of sheltered care environment and residents' disadvantages on whether residents had a relationship involving emotional or instrumental support¹

Variable	Emotional support		Instrumental support	
	Received	Given	Received	Given
Sheltered care environment				
Transitional, high-expectation subscale score	.72*	.59***	.54****	.78
Support subscale score	1.31*	1.43**	1.14	1.41**
Residents' disadvantages				
Brief Psychiatric Rating Scale score	.85	.74*	.84	.65***
Two or more years of continuous hospitalization	.38***	.43***	.40***	.56*
N of times in sheltered care	1.23**	1.22**	1.29***	.97

¹ Analysis controls for age, gender, physical health status, total length of time in 1973 facility, and baseline network characteristics (N=223).

* p < .10, two-tailed test

** p < .05, two-tailed test

*** p < .01, two-tailed test

**** p < .001, two-tailed test

For the average sheltered care facility, a standard deviation increase in the transitional, high-expectation subscale score implied an increase of 33 percent in emphasis on resident planning for leaving the facility and an increase of 23 to 40 percent in programs emphasizing learning new job skills.

Similarly, for each standard deviation increase in the support subscale score, respondents were 31 percent more likely to have a relationship in which they received emotional support, 43 percent more likely to have one in which they gave emotional support, and 41 percent more likely to have a relationship in which they gave instrumental support. For the average facility, a standard deviation increase in the supportive character of the program implied an increase of 22 to 43 percent in staff members' time invested in encouraging residents and in going out of their way to help residents.

When the residents' disadvantages were considered, for each standard deviation increase in the score on the BPRS, residents were 26 percent less likely to have a relationship in which they gave emotional support and 35 percent less likely to have a relationship in which they gave instrumental support. Residents with a long-term hospitaliza-

tion were 62 percent less likely than those who had not been institutionalized to have an emotionally supportive relationship and 57 percent less likely to have one in which they gave emotional support. Residents with a history of significant institutionalization were 60 percent less likely to have an instrumentally supportive relationship and 44 percent less likely to have one in which they gave instrumental support.

Finally, contrary to our hypothesis, the revolving-door experience in sheltered care had a positive effect on the residents' development of social networks. For each additional episode in a sheltered care facility from 1973 through follow-up, residents were 23 percent more likely to have an emotionally supportive relationship, 22 percent more likely to have one in which they gave emotional support, and 29 percent more likely to have an instrumentally supportive relationship.

Discussion and conclusions

This study assessed the development of social networks during a ten-year period as a function of the social environment of sheltered care and three disadvantages experienced by sample members; the analysis controlled for an individual's initial baseline social network characteristics and his or her

age, gender, and health status. The analysis also controlled for the amount of time spent in the original sheltered care facility.

The findings point to the significant influence of the sheltered care environment on the development of social networks of persons with serious mental disabilities. The supportive environment advocated by Lamb and Peele (54) clearly contributes to the individual's ability to receive emotional support from the network and, very important, to his or her ability to make both emotional and instrumental contributions to the network. The size of the network, however, appears to be unaffected by the supportive residential environment because there was not a significant relationship between the support subscale score and network size. Results showed that living in a transitional, high-expectation environment consistently resulted in smaller networks, a decreased likelihood of obtaining emotional or instrumental support from one's network, and a decreased likelihood of being able to give emotional support to members of the network.

From these data, we conclude that in a predominantly schizophrenic population, the transitional, high-expectation approach to residential care should be taken only with extreme caution. In addition, a very supportive environment must be maintained within the sheltered care facility. This latter suggestion is strongly supported by the fact that 39 percent of the sample reported no informal nonkin relationships, indicating that this is an isolated population in great need of support. Also disturbing is the finding that despite the current emphasis on case management and the involvement of mental health professionals in monitoring the care of persons with serious mental disabilities, a full 71.4 percent of the sample named no formal nonkin as part of their social network. Apparently, mental health professionals are not making a strong contribution to fulfilling the support needs of this group.

Our findings with respect to psychopathology are somewhat encouraging in that they indicated that the

extent of psychopathology had little impact on the development of network size. On the other hand, the extent of psychopathology reduced the person's ability to give both instrumental and emotional support to network members.

This follow-up study showed the negative impact of institutionalization on a person's ability to give and receive instrumental and emotional support. These findings are consistent with earlier observations that families with relatives in institutions reorganized their own networks to exclude institutionalized individuals, thus reducing their giving of social support and the individual's likelihood of receiving it (55). Our findings therefore provide another rationale for continued emphasis on community care policies.

Our study produced surprising data about another concept prevalent in the literature for more than 25 years, the revolving-door experience, which is defined as repeated short-term hospitalizations (19). Although initially viewed as an index of treatment failure associated with a lack of continuity of care (56), in the past decade this syndrome has been extended to include repeated psychiatric emergency visits and repeated use of other mental health crisis services without any real connection to or engagement with the ongoing services (57). We had expected that more frequent contacts with sheltered care facilities or movement in and out of these facilities would impede the development of supportive social networks. Our findings, however, indicated that frequent use of sheltered care had a positive effect on social networks and social support outcomes.

There are several possible explanations for these findings. Persons with serious mental disabilities may use sheltered care intermittently for respite from independent living (58) or to avoid overburdening network members. Network members may need respite themselves and push for use of sheltered care by the person with a serious mental disability. An alternative perspective is offered by the squeaky-wheel hypothesis (48). In this framework, individuals who

make the most noise get the most service. Individuals who move in and out of sheltered care in a revolving-door pattern get the most attention simply by generating demands associated with their move. The attention to the move itself may serve to enhance network size and involvement.

The findings of this study should be carefully considered in the design of community care programs, particularly in the definition of "appropriate" residential placements for persons with long-term mental disabilities.

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