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# Predictors of the Use of Respite Services by Caregivers of Alzheimer's Patients: Racial and Generational Differences\*

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## ABSTRACT

*This research applies one prominent model of service utilization (the Andersen-Newman Model) to better understand the way in which family caregivers utilize respite services when caring for older relatives. Specifically, this research examines racial (black and white) and generational (spouse and adult-child) differences between caregivers of Alzheimer's patients and the volume and type of respite services used. The sample (N= 359) is drawn from six Northeast Ohio programs in a consortium that uses a personal computer-based information system to collect intake, assessment, service use, and program satisfaction data from respite clients. Racial differences are found in client attrition and turnover. Results also show adult-child caregivers are the greatest users of day care. These generational differences persist despite the similarities in patient and caregiver need. Fee subsidy and relationship strain between the caregiver and elder predict the amount of service used. Findings suggest that practitioners need to take into account racial and generational factors in addition to traditional patient and caregiver needs when formulating care plans.*

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## **Respite's Impact on Caregivers**

There has been considerable debate in the gerontological literature about the impact of respite on family caregivers. Callahan (1989), in reviewing the existing evidence for respite's effects (see Lawton, Brody and Saperstein, 1989), asserts that while families are satisfied with this service, there is little compelling evidence that it has measurable impact on caregivers. Deimling (1991), in contrast, argues that methodological impediments in most previous research have prevented the actual benefits of respite from being uncovered. Zarit, et al. (1989) also point out the important role that methodology has played in the failure of research to document the impact of caregiver intervention programs such as respite.

One difficulty in determining the impact of respite on caregivers has been the limited amount of information available on how caregivers utilize respite, in terms of the types (in-home, day care) and volume of service. For example, there has been little research into the ways in which potential respite users move through service systems, from inquiry about service to assessment for service, and actual use of respite. The research that does exist is usually from single, and often small, programs, with limited socio-demographic variability. The lack of size and diversity in the samples has limited the generalizability of findings on how respite is used. Lawton, et al. (1989) have shown that participants in one respite demonstration project used little formal respite and often did not use any more respite from formal sources than other caregivers in their comparison groups received from informal sources. Their research also showed that many families eligible for respite either did not go on to use it, used it sporadically, or for only a very brief period. Before concluding that respite does not have its intended impact, however, we need to know a great deal more about how caregivers use this service.

## **Racial and Generational Differences**

Two other areas where little is known about respite use are racial (black and white) and generational (spouse and adult-child caregiver) differences. With regard to race, the literature on service use documents the reluctance of black families to use services in general, and institutionally based services (such as nursing homes or day care) in particular (Cox and Monk, 1990; Taylor and Chatters, 1986; Neighbors, 1984). The usual explanation for this is that black families are more likely to use informal, familial

sources of assistance. Another explanation is that there are barriers to service use related to the availability and accessibility of services. There has been no research on the use of respite by black families, nor has there been research on minority preferences for in-home or day care as a form of respite.

The caregiving literature provides ample evidence of the differences inherent in being either a spouse or an adult-child caregiver, as well as the implications of living arrangement for caregiver strain and service use (Deimling, et al., 1989; Noelker and Bass, 1989). What is not known is how these structural features affect caregivers' preferences for specific types or volume of services. Given the differences in spouse and adult-child caregivers in terms of competing demands, employment, and the nature of the relationship itself, it would not be surprising to find considerable differences between these two groups of caregivers in their preferences regarding respite service.

In short, there has been little research on the ways in which caregivers use respite services, their flow through the service systems that provide formal respite, and their attrition from these programs. This research will attempt to add to our knowledge of the ways families use respite, and will go further to examine the predictors of type and volume of service use in a relatively large multi-agency sample of respite users.

### **Analytic Model**

In order to organize the analysis, a well-known model of service use, the Andersen model, was employed. The Andersen model (Andersen and Newman, 1973) identifies three categories of factors (predisposing, enabling, and patient need) as potentially influencing the use of formal health care services. While respite is not viewed as a health care service per se, the predictors posited by the model are likely to be involved in the use of other types of formal services, such as respite, which have a health care orientation.

Within the context of this research, the model suggests a range of care recipient (patient) and family characteristics that may be related to the use of respite. The first category of variables identified in the Andersen model, *predisposing factors*, includes patient demographics and other structural variables that can "predispose" an individual to use formal sources of assistance such as respite. It is hypothesized that race, generation, and both caregiver and elder gender are structural features that can affect service use.

The second category of variables, *enabling factors*, are viewed as important predictors of service use because they provide greater opportunity for use. The size of the fee subsidy the family receives is one such variable that enables service use by enhancing affordability. Household size and the number of informal helpers are viewed as having negative effects on service use, in that larger families or those with a larger informal network may not use services because their well-developed informal network meets existing care needs. The number of formal services already being utilized is an enabling characteristic, because families who have prior or current experience with the use of services are more likely to know how to access services and have apparently already resolved for themselves the issue of appropriateness of services.

The third category of variables, which predict service use in the Andersen model, is care recipient *need*. Care recipients with greater objective needs for care are hypothesized to be greater users of service. The elder's age, as well as his or her mental and physical functioning, are three measures that can be used to operationalize the patient's level of need.

Bass and Noelker (1987) made an important adaptation to the Andersen model when they included the need characteristics of family members involved in caregiving. Their adaptation provides a more complete estimate of families' total need for services. In this study, caregiver need is hypothesized to be positively associated with the increased use of respite services.

Taken together, the predisposing, enabling, and need (both care recipient and caregiver) characteristics have the potential to influence the type and volume of respite used. In this research, the primary outcome measures of interest will be whether the respite service is actually used by the patient/family after inquiring about and being assessed for service, the volume of service used, and the type of respite (in-home or day care) ultimately utilized.

## **The Sample**

In mid-1988, the Margaret Blenkner Research Center of The Benjamin Rose Institute began to develop an interagency database with Northeast Ohio programs providing respite service to caregivers of persons with Alzheimer's disease (AD). The information system, entitled SISTERS (Shared Information Systems to Evaluate Respite Services), is comprised of four separate but integrated components: Inquiry, Assessment, Service Delivery, and Client Satisfaction/Quality Assurance.

During the first full year of operation, information was collected from 359 inquiries for service. Of these, 234 families were assessed, and 181 received at least one unit of respite service (4 hours of in-home or 1 day of day care). The data excludes a small number of families ( $n=4$ ) where the racial characteristics of the family were not known or where they were other than white or black.

Chart 1 shows the movement of cases from inquiry through assessment and service use. One of the unique features of the SISTERS information system is its ability to track clients from initial contact through the point of discharge from the service system and to document attrition at any point along the way. The 359 inquiries resulted in 109 cases being assessed (30 percent), 86 of which were assessed immediately and 23 of which were assessed later. These clients joined the existing caseload of 129 clients, who had been assessed prior to the start of the database, so that complete assessment information is available from 234 clients/families.

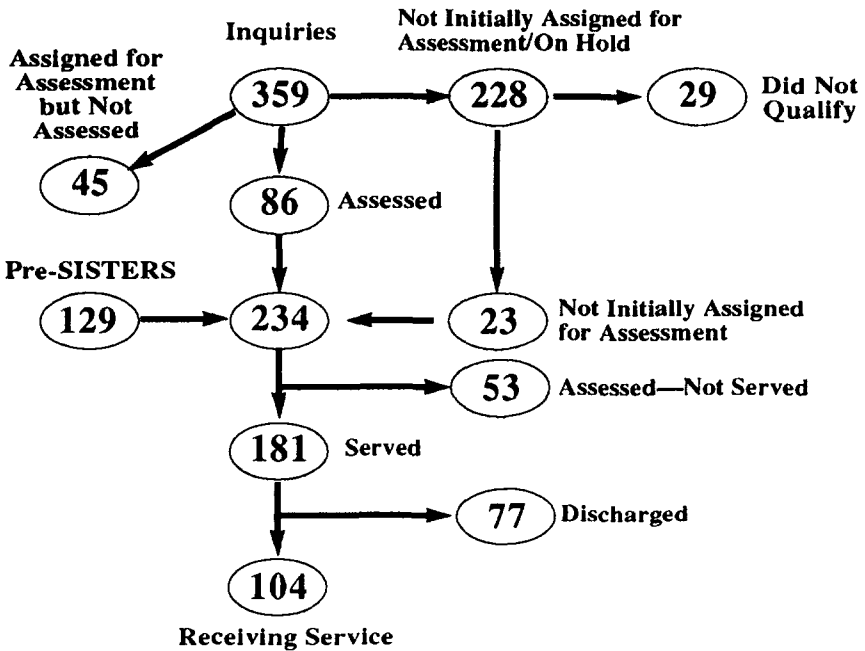
Not all clients assessed for service ultimately went on to receive service. In fact, there was substantial attrition, with 53 families never receiving service after completing assessment. While a portion of this attrition was due to death of the elder ( $n=4$ ) or nursing home placement ( $n=7$ ), other families chose not to schedule service even though fully qualified to receive it. Over the project's first full year, 43% of the clients left the program. Of these, 10 left because the care recipient died, 22 entered nursing homes, and 45 discontinued participation for a variety of other reasons. These reasons included needing more service than the program provided and needing services other than those the program provided. Other reasons included the caregiver's dissatisfaction with the service or unwillingness to cooperate with the program. A small number of discontinued cases were the result of the care recipient or caregiver moving out of the service area or the inability to pay for subsidized service.

## Measurement

The multidimensional SISTERS assessment instrument was the primary source of information used in the analysis for this paper. It includes extensive demographic and family structure information for each family and a complete listing of other sources of informal and formal assistance used by each care recipient and caregiver.

Each of the respite programs employed a sliding fee scale to determine the extent of fee subsidy provided to the family. The agencies employed the fee scale adopted by the Ohio Department of Aging, as each of the pro-

Chart 1. SISTERS Client Flow



grams utilized State of Ohio funding to underwrite the cost of the program and to provide fee subsidies. These demographic, family structure, assistance use, and fee subsidy measures serve to operationalize the predisposing and enabling variables in this study.

Elder need in terms of cognitive incapacity was measured using the Short Portable Mental Status Questionnaire (SPMSQ) designed by Pfeiffer (1975). Physical functioning was measured using the Personal Self-Maintenance (PSM) items developed by Lawton and Brody (1969). In addition to caregiver age, other measures of caregiver need were derived from prior family care research at The Benjamin Rose Institute (see Deimling, et al., 1989; Bass and Noelker, 1987; Deimling and Bass, 1986; Poulshock and Deimling, 1984). These measures included a single-item, self-report indicator of physical health decline and a single-item indicator of emotional health decline. A four-item measure of relationship strain ( $\alpha = .64$ ) and a three-item index of activity restrictions ( $\alpha = .70$ ) were also included. Finally, information on the total number of hours of service, the average monthly hours of service, and the type of service used were obtained from the Service Delivery component of the information system.

## Analysis Strategy

The analysis in this paper focuses on the factors associated with the use of service, particularly the volume and type of respite used. In examining these predictors, the first step was to identify those predisposing, enabling, and need characteristics of families/patients/caregivers that differentiated service users from non-users. Descriptive information was used to compare these two groups along with correlational data for all clients assessed for service.

The second step in the analysis was to identify the correlates of the volume and type of service used (day care or in-home). The correlational analysis was the first procedure used, leading to a selection of variables for inclusion in a multivariate analysis of the predictors of service use. Because of the interval nature of the service volume variable, regression analysis was employed. To examine categorical measures, i.e., service use/non-use and service type (day care or in-home), discriminant function analysis was used.

## Findings

### Service Use/Non-use

Table 1 displays the characteristics of patients and caregivers in families who used respite services after being assessed and those who did not use respite services after completing the assessment process. This descriptive data shows that the proportion of blacks who were assessed but chose not to use respite services was substantially greater (47.2 percent) than blacks who chose to use the service after assessment (35.4 percent). Thus, black families were less likely to use service after assessment than white families.

The proportion of spouse caregivers differed substantially between the served (50.8 percent) and unserved groups (39.6 percent). After assessment, spouse caregivers were more likely to go on to use respite than adult-child caregivers. Neither elder nor caregiver gender differentiated the groups who chose and those who did not choose to use service. However, in terms of two of the predisposing variables, race and generation, there were substantial differences in the proportion who chose to use respite after assessment.

Another substantial difference between those served and those not served was the proportion of families already using formal assistance. In the group who used service after assessment, nearly half had two or more



**Table 1**  
 Family, Patient, Caregiver and Service Use Characteristics by Service Status

	Served (n=181)	Not Served (n=53)	p <sup>a</sup>
<b><u>Predisposing</u></b>			
% Black	35.4	47.2	.12
% Spouse caregiver	50.8	39.6	.15
% Caregiver female	76.2	77.4	.87
% Patient female	56.9	60.4	.65
<b><u>Enabling</u></b>			
Fee subsidized 80%+	49.6	43.9	.33
Mean household size	2.4	2.8	.01
% 2+ informal helpers	63.0	67.9	.51
% 2+ formal helpers	45.3	58.5	.09
<b><u>Patient need</u></b>			
Mean age	78.0	78.7	.62
Mean SPMSQ Errors (0-10 errors)	7.3	7.2	.58
Mean PSM (0-6, low to high independence)	2.7	2.8	.72
<b><u>Caregiver need</u></b>			
Mean age	62.1	59.5	.43
% Physical health decline	46.0	38.3	.36
% Emotional health decline	67.9	72.3	.66
Mean relationship strain (0-8, low to high strain)	2.2	2.4	.28
Mean activity restriction (0-3, low to high restriction)	2.2	2.5	.03
<b><u>Service</u></b>			
Mean hours	232.6	NA	
Mean hours per month	31.4	NA	
% using in-home <sup>b</sup>	55.2	NA	
% using day care <sup>b</sup>	47.0	NA	

<sup>a</sup> Determined using Chi-square statistics for % variables and t test for mean.

<sup>b</sup> Does not total 100% due to multiple types of respite use by some families.

formal sources of assistance, indicating that they were receiving service from at least one other formal source in addition to the respite program. Among those families who did not use respite, well over half already received service from at least one other formal source.

In terms of other enabling characteristics, such as fee subsidy, household size, and the number of informal helpers, the served group did not differ substantially from the unserved group. The fact that the fee subsidy did not differentiate the use of service was counterintuitive. The availability of the fee subsidy was expected to encourage families to use respite service.

Also somewhat surprisingly, patient need did not differentiate significantly between the group that chose to use service after assessment and those that chose not to use respite. The data show that the elders in this sample were substantially cognitively impaired (e.g., SPMSQ errors of 7.3 and 7.2 items out of 10). On average, the elders in this sample were able to perform fewer than three out of six self-maintenance tasks.

There was one notable difference between the two groups with respect to caregiver need. The group who chose to use respite was more likely to report *physical health decline in the preceding months compared to those who chose not to use service*. This is in contrast to other measures of caregiver strain, in which the general pattern is that the group not using respite is more likely to report emotional health decline, relationship strain, or activity restriction.

### Correlates of Service Volume and Type of Respite Used

Among service users, the correlates of volume of service used and type of respite (day care or in-home) were identified. The same predisposing, enabling, elder and caregiver need characteristics were examined. The measure of service volume used in this portion of the analysis was the average number of hours of respite used by the caregiver per month. In the previous table race was associated with whether or not a caregiver used respite. The correlational data show that, among those using respite, race was not associated with the volume of service. Thus, while black families were less likely to use service than white families after assessment, once in the service program, their volume of service use was not significantly different from that of white families.

In the prior table, spouse caregivers were shown to be more likely to use respite after assessment than adult-child caregivers. The correlational data in Table 2 show, however, that once spouse caregivers began to use services, they used significantly less service than adult-child caregivers.

**Table 2**  
 Correlation Matrix of Family, Patient, Caregiver, and Service Use Characteristics  
 All Clients Assessed (n=234) Served Clients Only (n=181)

			Received Service	Average Service	Day care	In-home
<b>Predisposing</b>	<u>Mean</u>	<u>Std.</u>	<u>r</u>	<u>r</u>	<u>r</u>	<u>r</u>
Race (black)	.38	.49	-.10	-.09	.14*	-.08
Spouse caregiver	.48	.50	.09	-.18**	-.25**	.23**
Caregiver female	.77	.42	-.01	-.06	.01	-.01
Patient female	.58	.50	-.03	.13*	.08	-.09
<b>Enabling</b>						
Fee subsidized 80%+	45.15	37.35	-.06	.23**	.36**	-.37**
Household size	2.47	.96	-.18**	.14*	.16**	-.13*
# informal helpers	1.92	.80	-.00	.11	.10	-.11
# formal helpers	1.62	.72	-.09	-.20**	-.25**	.24**
<b>Patient need</b>						
Age	78.12	9.05	-.03	.00	-.12*	.12*
SPMSQ errors	7.31	2.80	.01	-.17**	-.29**	.30**
PSM	2.74	2.05	-.01	.20**	.36**	-.35**
<b>Caregiver need</b>						
Age	61.52	14.64	.07	-.14*	-.23**	.19**
Physical health decline	3.47	.67	.03	-.07	-.16*	.13*
Emotional health decline	3.78	.83	-.02	.02	-.05	.05
Relationship strain	2.24	1.91	-.05	.20**	.09	-.09
Activity restriction	2.23	1.05	-.12*	-.08	-.22**	.22**
<b>Service</b>						
Average service	31.35	30.34	—	—	.40**	-.38**
Day care	.36	.48	.41**	.40**	—	-.96**
In-home	.43	.50	.47**	-.38*	-.96**	—

\*p < .05; \*\*p < .01.

Conversely, then, adult-child caregivers were less likely to use service after assessment than spouse caregivers, but once they began using services they used a greater volume of service than spouse caregivers. While neither the gender of the caregiver nor that of the elder differentiated the service use/non-use groups, families in which the elder was female used significantly more service than when the elder was male.

Three of the four enabling characteristics were significantly associated with the volume of service used. Fee subsidy, which did not differentiate

the use/non-use groups, was significantly correlated with the volume of use. The greater the fee subsidy, the greater the volume of service. Household size was also positively associated with service volume. Surprisingly, larger households used more respite. This may be related to the fact that adult children used more respite and these households were likely to be larger due to the presence of third generation children. It may also be due to the fact that adult-child caregivers often were employed and thus used respite not as respite per se, but rather to enable them to work. When caregivers use respite to continue employment they may need a greater number of hours of service to cover their work schedule.

While patient need variables were not associated with the use or non-use of service, they were significantly associated with the volume of service used. For example, cognitive impairment was significantly associated with volume of use. However, the negative sign of the coefficient indicates that families of more cognitively impaired individuals used less service than families of less impaired individuals. The PSM indicator suggests the same is true for physical functioning. Families where elders were able to do more for themselves (higher PSM score) used more respite. In both situations, what was apparently occurring was that high levels of impairment prohibited the use of respite in these families. The extreme impairment of the Alzheimer's patient may mean that the caregiver did not feel comfortable leaving the patient for even a short period, and day care may be inappropriate for those with higher levels of impairment.

With regard to caregiver need, older caregivers used significantly less respite than younger caregivers. Those who reported the greatest relationship strain used more respite than those reporting less relationship strain. Surprisingly, neither physical nor emotional health decline were significantly correlated with service volume, and neither was the caregiver's activity restriction.

Finally, the average volume of service was positively associated with the use of day care and negatively associated with the use of in-home service. This indicates that day care users, in fact, used significantly more service on average than did in-home service users.

The remaining correlational analysis looks at the association between the predisposing, enabling, and need variables on the family's choice to use either day care or in-home service. Few families used a combination of both services, so the predictors of the use of one form of respite are the reciprocal of their non-use of the other form of respite. As a result, the coefficients, in general, were very similar in magnitude for the two groups, with only the reversed sign indicating use or non-use of that specific form of respite.

**Table 3**  
**Discriminant Function Analysis of Service Use/Non-Use**

**Standardized Canonical  
Discriminant Function Coefficients**

<u>Predisposing</u>	
Race (black)	.-15
Spouse caregiver	-.24
Elder female	-.01
<u>Enabling</u>	
Fee subsidized 80%+	.30
Household size	.51
# Formal helpers	.35
<u>Elder need</u>	
Age	.10
SPMSQ Errors	-.12
PSM	.23
<u>Caregiver need</u>	
Age	.02
Physical health decline	-.33
Relationship strain	.11
Activity restriction	.64

		Predicted Service Use	
Actual Service Use		<u>No</u>	<u>Yes</u>
	No	6	36
		14.3%	85.7%
	Yes	4	140
		28.0%	97.2%

Overall percent classified correctly = 78.5%

Race and generation were again significant predictors, with blacks more likely to use day care and spouses more likely to use in-home service. Fee subsidy correlated with the use of day care, with families receiving greater subsidy more likely to use day care. Also, larger families were more likely to use day care. With regard to patient need, families with the oldest, most cognitively impaired, and least functionally independent elders were most likely to use in-home respite. For caregivers, the oldest and those with the greatest health decline and activity restriction were most likely to use in-home respite.

**Table 4**  
 Predictors of the Average Monthly Volume of Service Use (N = 181)

	Volume of Service Use	
	<u>beta</u>	<u>p</u>
<u>Predisposing</u>		
Race (black)	-.09	.28
Spouse caregiver	-.04	.76
Patient female	.12	.15
<u>Enabling</u>		
Fee subsidized 80%+	.18	.01
Household size	.01	.88
# Formal helpers	-.13	.10
<u>Patient need</u>		
Age	.07	.43
SPMSQ errors	-.13	.11
PSM	.07	.40
<u>Caregiver need</u>		
Age	-.10	.39
Physical health decline	-.01	.91
Relationship strain	.16	.04
Activity restriction	-.03	.68
	<u>R</u>	<u>R<sup>2</sup></u>
	.43	.19
		<u>p</u>
		.001

### Multivariate analysis

Based on the descriptive and correlational analysis just presented, those predisposing, enabling, and need factors that were significantly associated with either service use/non-use, volume of service, or type of service were included in the multivariate analysis. The purpose of this analysis was to determine the net and relative impact of the predisposing, enabling, and need factors, as well as to determine the total impact of all of these factors in explaining the respective service use outcomes. As noted earlier, discriminant function analysis was used with the categorical outcomes (i.e., service use/non-use and in-home/day care) while regression was used with the interval outcome, service volume.

Looking first at Table 3, the results of discriminant function analysis point to the relative importance of caregiver activity restriction and household size in the decision to use service. Caregivers experiencing more activity restriction and those in larger households were more likely to use

**Table 5**  
**Discriminant Function Analysis of the Use of In-home/Day Care Service**

		<u>Standardized Canonical Discriminant Function Coefficients</u>	
<u>Predisposing</u>			
	Race (black)		-.18
	Spouse caregiver		.18
	Patient female		-.02
<u>Enabling</u>			
	Fee subsidized 80%+		-.63
	Household size		.13
	# Formal helpers		.24
<u>Patient need</u>			
	Age		.12
	SPMSQ Errors		.29
	PSM		-.47
<u>Caregiver need</u>			
	Age		.21
	Physical health decline		.18
	Relationship strain		-.15
	Activity restriction		.21
		Predicted Service Use	
	Actual Service Use	<u>No</u>	<u>Yes</u>
	In-Home	53	14
		79.1%	20.9%
	Day Care	24	49
		32.9%	67.1%

Overall percent classified correctly = 72.9%

respite after completing assessment. The discriminant function utilizing the same thirteen variables correctly classified nearly 80 percent of the cases in terms of actual service use.

The regression analysis in Table 4 shows that the best indicators of service volume were fee subsidy and relationship strain. Race and generation had much weaker and non-significant effects. While the net effects of the remaining indicators were similarly weak, together the equation explained nearly 20 percent of the total variance in service volume.

In Table 5, with regard to type of service used, the results of the discriminant function analysis show that fee subsidy had the greatest relative

impact, with those receiving a larger fee subsidy more likely to use day care. The second most powerful discriminating factor was the elder's physical functioning, with elders having the fewest self maintenance dependencies most likely to use day care. Similarly, cognitive impairment was an important discriminant, with the most mentally impaired least likely to use day care. Overall, the function correctly classified over 70 percent of the cases, being most accurate in predicting in-home service use.

## **Discussion and Summary**

The findings presented here have important implications for those planning respite services for caregivers. First, respite services are used quite differently by spouse and adult-child caregivers. As caregivers, their needs are very different. For adult children, typically daughters, trying to balance a career, the needs of their own children, and those of their parent(s), respite is not actually "respite" from caregiving, but rather an opportunity to meet other obligations. Since most of the adult-child caregivers are employed, respite hours need to be expanded to more closely match the 8-plus-hour work day. For employed caregivers to actually use respite as relief, it may need to be scheduled on weekends. Currently, most respite programs, including all of those in this study, do not have weekend hours.

The results of this research clearly show the preference of adult-child caregivers for day care, while spouse caregivers are more likely to utilize in-home services. The caregivers' ability to utilize day care requires them to prepare the patient for the trip to the day care center, provide transportation (when not provided by the program), and then make the same preparations for the return trip. Adult children are more likely to have the capacity to accomplish these related tasks, in contrast to spouse caregivers. Further, some expressed a reluctance to leave the older person and others indicated that the patient refused to leave the home to go to day care. Thus, in-home services are better able to accommodate these needs. Clearly, in the case of respite, "one size" does not fit all. Practitioners and planners need to recognize these very different needs of spouse and adult-child caregivers.

Racial differences were also noted in the findings. Black families were less likely than white families to go on to use services after assessment. From a practitioner's perspective, it is important to work with minority families during this critical period to ensure that there are no real or perceived



barriers to their use of the service. Our analysis shows that once black families began using service, they used it in similar volume compared to white families. However, black caregivers did show a modest preference for day care as a form of respite. This may be because black caregivers in this study were slightly more likely to be adult children and employed, both potential factors related to the choice of day care over in-home respite. In any event, practitioners and planners need to be aware of these potentially significant black/white differences in preference when formulating care plans and designing programs.

This research shows that there was considerable attrition between assessment and the use of service for all caregivers. This attrition was greatest, however, among minority families. The findings suggest that practitioners need to work with this group of caregivers to assist them in recognizing their own needs for respite and in making plans to use the respite service that is available to them.

While neither minority status nor generation were significant predictors of the volume of service used, fee subsidy and relationship strain between the caregiver and elder were important predictors of the amount of respite used by caregivers. With regard to fee subsidy, our finding that families who received a service in which the cost was partly or totally subsidized used a higher volume of services is hardly surprising. However, this does suggest that the need for respite far exceeds the capacity of most families to pay for the service. If affordable services are made available, they will be used. We can only speculate that a substantial number of minority families who inquired about respite and were assessed for service did not go on to use the service because they felt the need to conserve scarce financial resources.

The relationship between caregiver strain and volume of service use is also not surprising. It does emphasize the importance of collecting caregiver strain information at assessment so that the volume of service required to meet caregiver needs can be efficiently planned. Caregiver strain information may also be useful for practitioners in determining the need for ancillary services such as support groups, counseling, or educational programs. These types of ancillary services can have a multiplier effect on the impact of respite, as they can enhance the caregivers' effective use of the limited respite they do receive.

Our findings also show that day care users consumed more hours of service. This was due, in part, to the fact that day care typically offered only large blocks of time (six or more hours) while in-home respite was often only available in smaller units (typically four hours). It may also suggest,

however, that caregivers used day care as a form of respite when they needed larger blocks of time (e.g., so they could work). This suggests the question: if in-home respite was available in larger blocks of time, would adult-child caregivers be more likely to use it than day care?

In summary, this research serves as an example of the ways in which theoretical models such as the Andersen and Newman model and multivariate statistics can be used with data derived from an information system to examine important clinical questions in gerontology and community-based services for the elderly. The data presented here represent a first step in our attempt to understand the predictors of the types and volume of service use and attrition patterns among families caring for Alzheimer's patients.

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