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Differences Between Users and Nonusers of Day Care Centers Among Frail Older Persons in Israel

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Abstract

Day care centers are one of the core community-based services for frail older persons. The purpose of the study is to examine differences in characteristics of users and nonusers of day care centers among frail older people and factors that explain service utilization. Personal interviews are conducted with 333 respondents, of whom 81 were users. Based on the behavioral model of Andersen, the results show that both groups significantly differed in most predisposing (age, marital status), enabling (having a homecare worker), and need (IADL [instrumental activities of daily living]) factors. The findings lend support to Andersen's behavioral model and suggest that further research is needed to assess underutilization of day care centers. Implications for research, policy, and practice are discussed.

Keywords

frail, day care centers, service utilization, behavioral model

Day care centers are one of the core community-based services for frail older adults (Krout, 1988, 1990; Ransom, 1994) in many Western countries, including Israel. Yet most of the research on this issue has been conducted in North

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American countries, and there is a dearth of research on the utilization of this type of community-based service elsewhere.

In Israel, there are 172 day care centers that serve about 15,480 people, representing only 2.2% of the population aged 65 and older, and the percentage of frail older people who are entitled to and can benefit from this type of service is estimated to be around 16.5% of the total older population (Brodsky, Shnoor, & Be'er, 2009). In fact, all those who are frail and functionally limited, either physically or mentally, and receive in-kind long-term care benefits under the Long-term Insurance Law can choose the use of day care centers from among a variety of services that are offered under the law and are publicly financed. The entitlement criteria to receive a long-term care benefit include the combination of a dependency test that examines the person's ability to perform activities of daily living (ADL), and an income test, suggesting that only those who are under a specific level of income, which is quite generous, are entitled to receive this benefit (those who live alone and whose current monthly income does not exceed 1.5 times the average wage in the market, and for couples if their combined monthly income does not exceed 2.25 times the average wage in the market). In addition, health care professionals and social workers in municipal social services departments can refer frail older people to this type of service; families and frail older persons themselves can apply and use this service even if they are frail but not entitled to receive a long-term benefit because their income is higher than the threshold to receive this benefit. In these cases, they have to co-pay for the service that can range from full price to a smaller copayment, depending on their economic status.

Most of the centers operate 5 days a week, 5 to 6 hours a day; a few operate 6 days a week and are open 6 or more hours a day. Most of them serve physically frail older adults, but there are several day care centers that serve only mentally frail older persons. An individual care plan is prepared for each participant and provided by a multidisciplinary team. The core services provided at the day care centers include personal care, social activities, health promotion, meals, physical activity, dental care, hairdressing, and laundry. Although the day care centers are similar in the core services that they provide to their participants, they are heterogeneous in terms of their physical size, number of participants, the characteristics of the participants, variety of additional services, auspices, and operators. Most of their expenditures are covered by benefits to which disabled older persons are entitled under the Long-term Care Insurance law. They are daytime programs designed to meet the needs of frail older adults who require supervised care during the day but can return to their homes in the afternoon or evening.

Day care centers play an important role in the community-based long-term care continuum: (a) from the perspective of the frail older person, they help in

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sustaining and preserving the functioning of older people, allowing them to age in place, and meet some of their long-term care needs (Anetzberger, 2002; Krout, 1995), including social and emotional needs that can help to alleviate feelings of loneliness, boredom, and solitude, and improve quality of life (Jacob, Abraham, Abraham, & Jacob, 2007); (b) from the perspective of the family caregiver, day care centers are a kind of respite service (Jarrott, Zarit, Berg, & Johansson, 1998) that reduces family's burden and distress (Gaugler et al., 2003). They enable family members to lead normal lives, and encourage them to assume this responsibility for a longer period; and (c) from the perspective of society, this service's function is to curtail national expenditures by delaying or preventing institutionalization, which is much more expensive (Gitlin, Reever, Dennis, Mathieu, & Hauck, 2006), and reducing absenteeism from work places of family caregivers.

Despite the important goals day care centers aim to achieve, a high proportion of frail older people who live in the community do not use them. This phenomenon has been reported in other countries as well. For example, in a study conducted among African American in older people with mental-health-related deficiencies in Washington State, it was found that respite services, including day care centers, were the least utilized among an array of supportive services (Li, Edwards, & Morrow-Howell, 2004). In most cases, the reasons for underutilization were related to the variety of services that were provided at the day care centers. Hong (2004) found that the most frequent unmet service need was adult day care.

Considering the many resources invested in establishing and operating day care centers, it is important to identify the factors that affect utilization of this type of service. To the best of our knowledge, no previous studies in Israel examined differences between users and nonusers of adult day care centers. Therefore, this study aims to identify the characteristics that differentiate between these two groups and explore the factors that explain utilization of day care centers among mentally intact but physically frail older adults.

Theoretical Approach

The utilization of health services is determined by a wide array of factors and the interactions between them. This study is guided by the behavioral model of Andersen and colleagues (Aday & Andersen, 1974; Andersen, 1968, 1995; Andersen & Newman, 1973), which has been applied to various services and populations, including older people (Kosloski & Montgomery, 1994; Soskolne, Bar-Shahar, & Auslander, 2006). The factors detailed in the following were found to affect utilization of social services even more than health services–related factors (Toseland, McCallion, Gerber, & Banks, 2002). According to this

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model, service utilization is a function of three groups of factors: (1) predisposing variables, which reflect the natural inclination of people to use services, including biological traits, sociodemographics such as gender and education (Bazargan, Bazargan, & Baker, 1998; Dunlop, Manheim, Song, & Chang, 2002; Koziol, Zuraw, & Christiansen, 2002); (2) enabling variables, which include social, community, and family resources that enable and facilitate the utilization of the existing services (Penning, 1995); and (3) need characteristics that include self-reported symptoms of discomfort, functional incapability, health problems, and perceived health status. Studies that include predisposing, enabling, and need variables found that need variables were the most significant for explaining utilization of various services among older adults (Bazargan et al., 1998; Walsh, Wu, Mitchell, & Berkmann, 2003). For example, in Canada those who assessed their health status as moderate to poor tended to be more frequently hospitalized compared to those who assessed their health as good to excellent (Menec & Chipperfield, 2001).

A recent version of the model (Andersen, 2008) stresses that understanding the use of health care services is best achieved by examining the interplay between contextual and individual determinants. Thus, individual determinants include predisposing, enabling, and need factors such as those mentioned previously and contextual factors that also include predisposing (e.g., size of older population), enabling (e.g., accessibility), and need (e.g., morbidity or disability rates) factors. For example, enabling factors that include factors inherent in the individual, such as limitations in outdoor mobility, and contextual factors that are dependent on the environment or the service provider, such as inconvenient transportation, can impede accessibility to services. Unavailability of certain services or specific entitlement criteria, which depend on the service supplier's policy, can hinder utilization of the needed services.

A study conducted in Jerusalem (Auslander, Soffer, & Auslander, 2003) on a new "supportive community" program, showed that predisposing characteristics (age, sex, family status, living arrangements, education, religiosity, and ethnicity) did not predict subscribing to the program. However, joining was predicted by a combination of individual and contextual enabling (social networks, family relationships and formal community services) and need characteristics. Members who were lonelier with more functional limitations, poorer perceived health status, and a negative attitude toward aging used significantly more services than those with lower levels of perceived need. Yet Lynch, Harrington, and Newcomer (1999) found that individual needs, such as activities of daily living (ADL and IADL), and predisposing variables, such as age and gender, were important predictors of service use. It can be concluded that current findings are inconsistent.

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Inconsistency was found also with regard to utilization of day care centers. Surveys conducted in the United States showed that typical day care users were disabled and aged 75 to 79 (Montgomery, Marquis, Schaefer, & Kosloski, 2002; Reifler, Henry, & Cox, 1995; Weissert, Wan, Livierators, & Katz, 1980). Most participants were non-Hispanic White women who lived with a spouse or other relatives. Other study findings indicated that utilization of day care centers was associated with income and marital status of the participants, so that unmarried women with lower income used day care centers more frequently compared to married men with higher income (Krout, 1983). Also, health condition, such as Alzheimer disease, stroke, heart disease, hypertension, diabetes, and functional status were connected with utilization of day care services (Cohen-Mansfield, Lipson, Brenneman, & Pawlson, 2001; Kirwin, 1988; Reifler et al., 1995; Weissert et al., 1980). However, a study that compared the characteristics of cognitively impaired participants of American and Swedish day care centers found that client characteristics were similar, suggesting that adult day care centers were a widespread solution to a common problem of supporting disabled older people, in particular those who were mentally frail (Jarrott et al., 1998).

Other studies (Gutman, Milstein, Killam, Lewis, & Hollander, 1993; Montgomery et al., 2002) reported that that Black clients used day care for a longer duration than any other group and that the majority of participants of day care centers were females who did not live alone, had more chronic diseases, and deteriorated functional and cognitive status. More of the users were married and lived with a spouse; fewer lived with their children. Some of the reasons for nonattendance focused on the clients' tendencies, including clients who did not enjoy group activities, those who considered the days too long and those too ill to attend. Other reasons for nonattendance focused on the system, including limited accessibility, activities, and transportation. These inconsistencies suggest that more research is necessary to learn about the factors that affect utilization of this service.

Day Care Functions, Awareness, and Participation

As noted, only a small proportion of the frail older adults use day care centers' services; one of the reasons for underutilization is lack of awareness of the service. In Japan, for example, the vast majority of older persons were aware of home help services, whereas significantly more older people were unaware of availability of the day care and respite services (Shibusawa, Ishikawa, & Maeda, 2001). Moon, Lubben, and Villa (1998) found that Native American Indian older adults were more likely to be aware of community-based long-term care programs compared to their White counterparts. They learned about the programs

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through health care referrals, whereas Whites most commonly learned about the programs through friends.

Some of the reasons for day care participation were found to be related primarily to social activities, to increase contact with friends or to make new friends and keep active (Krout, 1991; Tse & Howie, 2005). Other studies found participation related to maintaining a sense of self as well as adjusting to the norms of the group (Williams & Roberts, 1995), decreasing feelings of loneliness (Baumgarten, Lebel, Laprise, Leclerc, & Quinn, 2002), promoting the well-being of the participants by reducing levels of depression, buffering stress, and increasing levels of perceived control and life satisfaction and subjective well-being (Garcia-Martin, Gomez-Jacinto, & Martimportugues-Goyenechea, 2004; Gaugler & Zarit, 2001; Valadez, Lumadue, Gutierrez, & de Vries-Kell, 2006).

In Israel, the main purpose of day care centers is to provide group supportive services to frail older people who are homebound, lonely, and lack social activity and to enable disabled older persons to age in place. A study (Korazim & Tranjtenberg-Ovadia, 1994) that examined how participants and managers of day care centers perceived the functions of the day care centers in Israel found that both groups of respondents perceived it was a place for social meetings and a place that helped to decrease feelings of loneliness. A minority mentioned that the visits in the day care center also helped the families of the participants.

The purpose of this study was to identify individual predisposing, enabling, and need characteristics that differentiate between users and nonusers of this core community-based service for frail older persons. It was hypothesized that the characteristics of users of day care centers will differ significantly from nonusers in terms of their sociodemographic characteristics (e.g., age and marital status), enabling characteristics (e.g., education, size of family network, living arrangements), and need factors (e.g., health and functional status), suggesting that those who are younger and married, have larger social networks, and are in better health and functional status will need this type of service less compared to their counterparts. It was, therefore, expected that these variables would explain a significant proportion of the variance in day care use. In addition, it was hypothesized that the need factors would outweigh the other groups of variables in explaining use of day care centers.

Method

Sample

Data were drawn from a national stratified sample that included 1,255 respondents, with the aim to exploring gaps between needs and provision of health and

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welfare services to older people in Israel. From the total older population of Israel, a stratified sample of 3 age groups, 65 to 75, 76 to 89, and 90 and older, were selected and obtained through the national database registry of the Ministry of Interior. The sample included only Jewish older people who comprise 90.5% of the total population aged 65 or more (Brodsky et al., 2009). Altogether, the sample included 4,298 persons, of whom 1,255 were interviewed: 516 in the first age-group, 471 in the second, and 268 in the third, which is an approximately a 29% response rate. Of the 3,043 who were not interviewed, 1,582 could not be reached due to missing or incorrect addresses; 1,105 refused to participate; 296 had communication problems (spoken languages other than Hebrew or Russian), and 60 died.

Among the sample of 1,255 respondents, 263 were frail and functionally limited and, therefore, received long-term care benefits under the Long-Term Care Insurance Law. All of the respondents received homecare services, except 11 respondents who visited day care centers. Therefore, to recruit more respondents who visit day care centers a convenience sample was added, which included 70 users of day care centers who were also recipients of long-term care insurance benefits. These 70 users were selected from among users of 5 day care centers in different regions of the country. Those who participated during the specific days (on different days of the week) when the interviewer visited the day care center and volunteered to be interviewed were included in the sample. Thus, all those who were able and volunteered to be interviewed were included in the sample. Altogether the study included 333 frail older persons, of whom 81 were users of day care centers and 252 were nonusers. No significant differences were found between the two groups of daycare users (11 of the national sample and 70 of the convenience sample) in terms of gender, length of stay in Israel, living arrangements, marital status, and education, except for age; interviewees of the convenience sample were younger than those of the national sample (79.36 and 89.27, respectively, $t = –.5.23$, $p < .001$)

Data Collection

The study underwent an institutional review board review and was approved by the ethics committee of our institution. In the first stage, a letter was sent to the respondents explaining the goals of the study and asking them to agree to be interviewed. A week later, an interviewer contacted them by phone and an appointment was made. Data were collected during 2006 by face-to-face interviews either at the respondents' homes or at the day care centers, using a structured questionnaire that followed a consent form signed by the interviewees. Each interview lasted 1.5 to 2 hr. In some cases, two home visits were necessary due to the respondent's

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fatigue. Interviews were conducted either in Hebrew or Russian, taking into account that about a third of the respondents were immigrants from former Soviet Union countries who immigrated to Israel after the collapse of the Soviet regime in 1989. All interviewers were trained to interview older people and in use of the specific questionnaire. The first section of the questionnaire included a mini-mental test (Folstein, Folstein, & McHugh, 1975) to make sure that the respondents were mentally intact. Among the nonusers who were included in the larger stratified sample, 52 of the respondents were found to be mentally frail; therefore, the interviews were conducted with proxies who were their primary caregivers. The findings showed that those with proxies significantly differed from those without a proxy: They were older ($M = 90.49$, $SD = 6.66$ and $M = 78.10$, $SD = 8.70$; $t = 16.25$, $p < .001$), unmarried (72.1% and 39.5%, respectively, $\chi^2 = 34.95$, $p < .001$), lived with somebody (95.3% and 74%, respectively, $\chi^2 = 19.76$, $p < .001$), were frailer in terms of their functional status in both ADL ($M = 6.85$, $SD = 1.99$ and $M = 1.76$, $SD = 2.60$, respectively; $t = 22.36$, $p < .001$), and IADL ($M = 7.65$, $SD = 0.76$ and $M = 3.24$, SD = 2.89, respectively; $t = 16.25$, $p < .001$), and more of them had a homecare worker (82.6% and 24.1%, respectively, $\chi^2 = 135.31$, $p < .001$). However, both groups did not significantly differ in terms of gender, education, and length of stay in Israel.

Measures

The dependent and independent variables used in this study were classified according to the theoretical model of Andersen (2008):

Outcome Variable

Use of day care center. The participants that were included in the national sample were asked whether they were currently visiting a day care center, with a dichotomous response: 1 = *yes*, and 2 = *no*.

Independent Variables

Predisposing factors. This group of variables included sociodemographic characteristics such as age (year of birth), gender (1 = *female* and 0 = *male*), marital status (coded as 1 = *married/living with a partner* and 0 = *unmarried*), years of residence in Israel (year of immigration), and education (included 7 categories ranging from 1 = *no formal education* to 7 = *high education*).

Enabling Factors

Economic status. The respondents were presented with seven categories of income and asked to choose the category that was relevant to them. Thus, 1 indicated the

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lowest monthly income, which was the poverty line in Israel, and 7 indicated the *highest level of income*.

Size of family network. The respondents were asked whether they had a spouse, daughters, sons, brothers and sisters, and grandchildren, and how many. The number of all the family members was summed and the number of members in the family network was assigned to each respondent. Because there were 34 cases with missing data and there were respondents who did not answer one or more questions about how many children or other relatives they had, an average number of family members was calculated for each respondent.

Contacts with family members. The respondents were asked two questions: (1) How often they meet with at least one of their family members, with scores ranging from 1 (*don't meet at all*) to 8 (*every day*)? and (b) How often do they speak on the phone with at least one family member with scores ranging from 1 (*never*) to 8 (*every day*). The scores for these two items were summed, with higher scores indicating greater frequency of contacts.

Homecare worker. The respondents were asked whether they had a homecare worker who provided them with personal care and answers were 1 = *yes* and 2 = *no*.

Living arrangements. The respondents were asked with whom they live and answers were recoded into 1 = *lives alone* and 2 = *lives with somebody.*

Need Factors

Instrumental activities of daily living (IADL). To examine the ability to perform IADL, Fillenbaum's (1985) measure was used. The measure includes 8 items relating to home chores, laundry, cooking, and so on. Scores ranged from 1 (*no difficulty at all*) to 5 (*very much difficulty*). The final index was based on the sum of scores, ranging from 8 to 40.

Activities of daily living (ADL). To examine ADL we used Katz, Down, Cash, and Grotz's (1970) measure that includes 8 items, with scores for each item ranging from 1 (*no difficulty at all*) to 5 (*very much difficulty*). The sum of scores produced an index ranging from 8 to 40.

Self-rated health. The respondents were asked to rate their present health status with scores ranging from 1 (*excellent*) to 6 (*very poor*).

Analytical Procedure

A range of descriptive and comparative analyses were initially performed to present the characteristics of the respondents; *t* tests and chi-square tests, depending on types of variables, were carried out to examine differences between the two groups of users and nonusers of day care centers with regard to their sociodemographic

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characteristics, health and functional status, economic status, social support, and frequency of contacts with family members. The thrust of the analysis, however, involved a multiple logistic regression test to examine the extent to which disposing, enabling, and need factors explained utilization of day care centers. Variables entered the equation in three blocks (predisposing, enabling, and need factors). To control for respondent status (older person vs. proxy), this variable was included in the third block. Data storage and analysis were performed using SPSS version 11.5.

Results

The predisposing, enabling, and need factors of both users and nonusers of day care centers are presented in Table 1. The findings show that except for gender, both groups differed significantly, suggesting that those who visited day care centers were younger, more likely to be unmarried and live alone, had a lower level of education, and had lived longer in Israel. The groups also significantly differed in terms of functional status (IADL and ADL), self-rated health, size of family network, and frequency of contacts with family members, indicating that those who visited day care centers were in a better functional status, were healthier, and had larger family networks, but had sparser contacts with their family members. In addition, a lower percent of those who used day care centers had a homecare worker (71.6%) compared to those who did not use a day care center (97.2%). All the differences were significant, except for gender and economic status.

To examine the factors that best explain utilization of day care centers, a multiple logistic regression analysis that included three groups of variables, predisposing, enabling, and need factors was conducted. To control for confounding variables, the equation included all those variables that pointed at significant differences between users and nonusers of day care centers. It should be noted that to avoid multicolinearity, the correlation coefficients between the independent variables that were included in the equation were calculated and r values were less than .5 (e.g., the correlation coefficient between ADL and self-rated health was $r = .47$, and between family network and contact correlation coefficient was $r = .09$). The results are presented in Table 2 and show that among the predisposing variables age and marital status were found to be statistically significant in explaining the variance in the outcome variable. Younger respondents were more likely to attend an adult day center than were older respondents. The odds ratio (OR = 1.08, $p < .01$) indicates that younger age increased the odds of using adult day care centers by 8%. Unmarried respondents were more likely to attend an adult day care center than were respondents who were married, and the odds ratio (OR = 3.26, $p < .01$) indicates that being married decreased the odds of attending adult day care centers by more than 3 times. Among the enabling variables,

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Table 1. Predisposing, Enabling, and Need Variables—Users and Nonusers of Day Care Centers

	Users			Nonusers			
Variable	*N*	%	*M* (*SD*)	*N*	%	*M* (*SD*)	*p* Value
Predisposing factors							
Age	81	—	80.7 (6.4)	252	—	86.0 (8.3)	–5.73***
Gender (female)	54	66.7	—	154	61.1	—	0.69
Marital status (unmarried)	60	74.1	—	156	61.9	—	3.94*
Years of residence in Israel	81	—	45.6 (21.2)	249	—	40.1 (23.0)	1.97*
Enabling factors							
Education	—	—	—	—	—	—	9.45**
0-8 years of schooling	38	48.1	—	71	28.9	—	—
9-12	24	30.4	—	112	45.5	—	—
13+	17	21.5	—	63	25.6	—	—
Living arrangements: Live alone	41	50.60	—	64	25.10	—	18.44***
Economic status	78	—	3.9 (0.8)	223	—	3.8 (0.9)	0.70
Size of family network	81	—	15.5 (10.4)	251	—	10.9 (9.8)	3.41***
Frequency of contacts with family	81	—	12.5 (2.6)	251	—	13.4 (2.8)	–2.59*
Having homecare: Yes	58	71.6		245	97.2	—	47.96***
Need factors							
IADL (instrumental activities of daily living)	81	—	19.8 (5.2)	252	—	25.9 (6.2)	–8.75***
ADL (activities of daily living)	80	—	13.4 (4.3)	252	—	18.8 (7.2)	–8.04***
Self-rated health	81	—	3.8 (0.8)	248	—	4.2 (1.0)	–3.45***

*$p < .05$. **$p < .01$. ***$p < .001$.

having a larger family network and having a homecare worker was significant in explaining the outcome variable. Those with smaller family networks were less likely to visit a day care center and the odds ratio (OR = 0.76, $p < .05$) indicates

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Table 2. Logistic Regression Analysis of Variables Explaining Utilization of Day Care Centers

Variable	*B*	*SE*	Wald test statistic	Odds Ratio	*p* Value	95% Confidence Interval
Predisposing variables						
Age	.08	0.03	9.04	1.08	.003	1.03-1.14
Years of residence in Israel	–.00	0.01	0.20	1.00	.65	0.98-1.01
Marital status	1.18	0.46	6.53	3.26	.01	1.32-8.06
Enabling variables						
Education	.09	0.12	0.59	1.09	.44	0.87-1.37
Living arrangements	–.07	0.43	0.03	0.93	. 87	0.40-2.17
Size of family network	–.28	0.12	5.41	0.76	.02	0.60-0.96
Frequency of contacts with family	–.18	0.10	3.62	0.83	.06	0.69-1.01
Having a homecare worker	–2.97	0.62	23.13	0.05	.000	0.02-0.17
Need variables						
Self-rated health	–.16	0.24	0.52	0.85	.47	0.55-1.32
ADL (activities of daily living)	.05	0.05	1.02	1.05	.31	0.96-1.16
IADL (instrumental activities of daily living)	.13	0.04	9.08	1.14	.003	1.05-1.25
Respondent status[a]	–.07	0.89	0.01	0.93	.935	0.162- 5.347

a. Interview was conducted either with the older persons or by proxy.

that smaller family networks decreased the odds of using adult day care centers by 24%. Those with a homecare worker were less likely to visit a day care center and decreased the likelihood of day care use by 95%, which means that more of those who had a homecare worker made less use of day care centers. Among the need variables, only IADL was found significant in explaining the variance in day care use, suggesting that respondents who were more limited in IADL were less likely to attend an adult day care center than respondents who were less limited with IADL. The odds ratio (OR = 1.14, $p < .01$) indicates that fewer IADL limitations increased the odds of using adult day care centers by 14%.

Discussion

The bivariate analyses show that users of day care centers differed significantly from nonusers in age and marital status, in their perceived health and functional

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status, as well as in their social support system—both formal (having a homecare worker) and informal (family network size and frequency of contacts with family); that is, users of day care centers in comparison to nonusers were comprised more of respondents who were younger, unmarried, lived alone, with less education, and who lived longer in Israel were functionally less limited (in IADL and ADL) and appraised their health status as better; though these individuals had a larger family network, they seldom met with their family members and were less likely to have a homecare worker. This suggests that adult day care centers in Israel actually serve those older adults who are socially vulnerable in terms of their family support (e.g., unmarried, live alone, seldom meet with their families), but are younger, with larger families, and in better health and functional status in comparison to the nonusers. This is in spite the aim of this service to serve physically and mentally frail older people, especially those who are entitled to receive long-term care benefits. In reality, the users of daycare centers are moderately frail, and those who need more extensive health and personal care do not use this type of service.

The reasons for the underuse of this service by frailer older adults can be due to a combination of individual and contextual enabling factors that hinder use of this service by those who are physically frail and with severe mental-health-related deficiencies. For example, accessibility barriers such as living in apartments without elevators, inadequate health and personal care at the day care centers, as well as the centers being more oriented toward a social model of service, reduce the use of this service by those who are frailer and need a wider range of health and personal care services. Yet it should be mentioned that because contextual variables were not examined in this study, it is difficult to assess the extent to which accessibility obstacles and the types of services provided in them hinder the use of day care centers. Thus, the findings indicate that day care centers in Israel primarily serve younger and moderately frail older persons, whereas those who are severely ill and handicapped are more likely to have a homecare worker and receive help in their homes. These findings are consistent with previous studies conducted in Israel (Korazim & Tranjtenberg-Ovadia, 1994), showing that day care centers were perceived as a place for social meetings and a place that helped to decrease feelings of loneliness, rather than a place that meets the instrumental needs of the care recipients.

From a comparative perspective, day care centers in Israel are different from those in other countries like the United States, where the target population mainly consists of mentally frail older adults (Cohen-Mansfield et al., 2001) and serve more as a respite service for the users' caregivers. Yet it should be noted that in the United States most of the respondents were caregivers, whereas in this study the respondents were older people. In Israel many of the mentally frail either live in their homes and employ migrant live-in homecare workers who provide care around the clock (Iecovich, 2007) or are institutionalized.

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Pertaining to the behavioral model of Aday and Andersen (1974) and Andersen (2008), the findings of the multivariate analysis provide evidence that utilization of day care centers for older people is affected by a multiplicity of individual factors including predisposing (age, marital status), enabling (e.g., larger family networks, having a homecare worker), and need (e.g., functional status) variables that differentiate between users and nonusers of daycare centers. However, after controlling for confounding variables, the enabling factors (e.g., having a homecare worker) that are discretionary (Andersen, 1995) had the greatest impact on the outcome variable, which is also consistent with previous research findings (Fernandez-Mayoralas, Vicente Rodrõaguez, & Rojo, 2000; Wan & Gill-Odell, 1981). These studies revealed that with respect to utilization of social services, as opposed to health services, the enabling factors play a key role in explaining the utilization of social services of which daycare centers are one. This suggests that contextual enabling factors, such as the option to choose between different kinds of supportive services, can strongly affect use or underuse of a service and that one community service can offset another. Thus, though need variables are strongly associated with the use of nondiscretionary health services, enabling and predisposing variables are discretionary and are important in deciding whether people decide to use them. Therefore, those who are severely handicapped, either mentally or physically, and need more personal care and surveillance can actually choose between homecare and daycare centers, but they prefer to stay at home with their homecare worker, whereas those who are moderately frail, but can enjoy social activity, prefer to use daycare centers. This also suggests that people have a choice between using a group service (day care center) or an individual service (homecare worker) or a combination of both as reflected in the high rate of users who also had a homecare worker. However, without having asked the nonusers why they did not use day care centers, it is difficult to assess whether this is a problem, and if it is a problem, what are the exact factors that hinder the utilization of day care centers. These issues, however, were not addressed in this study and merit further investigation

It might also be that contextual factors, such as the current framework of operation of the day care centers in terms of accessibility, the limited variety of health services provided at the day care centers, as well as other factors that were not included in this study, do not meet the needs of those who are more ill, frailer, and more disabled. In addition, it might be that lack of information and unfamiliarity with day care centers influence their underuse. If this is one of the reasons, then information, exposure, and experience with this type of service may encourage many more to use it. For example, in Japan (Tsukada & Saito, 2006) older people who did not experience formal homecare and day care center services were reluctant to use them, but after experiencing these two types of services,

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they had a lower probability of feeling reluctant about using them. However, because the present study did not examine the reasons for nonuse of this type of service this issue merits further in-depth scrutiny.

The underuse of day care centers also raises the issue of inequity and inequality in the provision of day care center services to frail older persons. Whereas equality relates to the division of resources equally among a given population and opportunity of potential accessibility to use this service, equity relates to just distribution of services among those who need them but their actual use may be affected by factors such as predisposing factors (e.g., age) and enabling factors (e.g., ability to pay, economic status) and not inevitably by factors that are directly related to need factors (Kinman, 1999). Furthermore, according to Aday and Andersen's (1974) behavioral model various reasons can cause people to refrain from using a specific service in spite of their need, such as a negative experience with the service in the past, confidence, availability (Westen, Ahs, Persson, & Westerling, 2004). We don't know whether among the current nonusers there were past users and their reasons for ceasing using this service, and we don't know their reasons for refraining from using this type of service. This point too deserves more profound investigation to identify the individual as well as the contextual factors that affect utilization of this type of service.

The results of the present study should, however, be interpreted with caution due to a sampling procedure of day care users that was not random and because we lack information about the similarity or differences between respondents and nonrespondents among the nonusers of day care centers. Therefore, caution is warranted in generalizing these findings to the entire older population of Israel, and more research is needed to examine the issues raised in this study on nation-based random samples. Furthermore, the present study did not probe the reasons for underutilization of day care centers. Direct questions to nonusers will provide more reliable and explicit answers for underutilization of this type of service. In addition, greater samples will enable the inclusion of more variables, individual and contextual, to probe Andersen's (2008) behavioral model and identify barriers to utilization of this type of service. Despite its limitations, the present study contributes to our understanding of the differences between users and nonusers of day care centers and some of the factors that explain utilization of this type of community-based service.

Several conclusions and implications can be derived from this study. First, from the perspective of policy and practice, the fact that a relatively small proportion of frail older people use this type of service necessitates a reevaluation of the package of services they provide and the target populations whose needs they are aimed to meet. The constant increase in the number of frail older people on the one hand, and the high costs of institutionalization as well as health care services,

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especially of those who are severely frail and cognitively impaired, on the other, must urge policy makers as well as professionals to develop services that will be able to meet the various needs of these people in order to enable them to age in place, promote their well-being, and support their family caregivers. Furthermore, it might be that the current system of operation in terms of activity, hours, variety of services, and so on has to be modified to properly meet the changing needs of frailer older people. Also, awareness of this type of service has to be raised. Second, from the perspective of research, more research is necessary to learn about the attitudes and reasons for underuse of day care centers. To the best of our knowledge, no previous studies have examined the attitudes of nonusers and caregivers toward day care centers focusing on the reasons for their underuse. Larger samples of respondents are also necessary to identify the factors that promote and hinder utilization of day care centers.

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