Washoe County Senior Services 2013 Survey Data: Service User Profile

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Overall Summary:

Income was the single best predictor of utilization, with individuals making less than $30,000 a year the most likely to utilize services (see Table 1 and Figure 1). The number of people living in the home was the next best predictor, with individuals living with another (regardless of relationship status) utilizing services *less than* individuals who lived alone. Social isolation also predicted utilization of services, with individuals who were socially isolated being less likely to utilize services (see Table 1 and Figure 2). The frailty index was the next best predictor, with the data suggesting that as individuals develop physical disabilities they are more likely to utilize services. However, this trend reverses when an individual reaches a high level of disability (see Table 1 and Figure 3). Although overrepresented in the data, overall utilization of services by drivers was low while overall utilization of services by non-drivers was comparatively higher (see Table 1 and Figure 4). Finally, women were more likely to utilize services than men (see Table 1 and Figure 5).

Logistic Regression

Logistic regressions predict the odds that an event will occur given a specific predictor holding all other predictors constant. In the current data set the outcome of interest was the odds of reporting utilizing at least one service and predictors were reported income level, limited resource aggregate (not income), number of people living in the home, gender, overall frailty index, overall social isolation index, categorized frailty index, categorized social isolation index, driving status, and relationship status. Odds higher than 1 indicate an increased chance of the outcome occurring, odds less than 1 indicate a reduced chance of the outcome of interest occurring, and an odds ratio equal to one indicates that there is no influence of the predictor on the outcome.

A logistic regression model was used to predict group membership (user vs. non-user). Six cases were excluded due to model violations. There was no statistically significant differences between the cases excluded and the remainder of the sample for any of the categorical (e.g., income, gender) or continuous variables (e.g., overall frailty index) in the model (all p's < .10). The final model correctly predicted 79.5% of individuals (91.5% non-users, 51.9% users). It was found that individuals who utilized services made less than $30,000 a year, were more likely to live alone (compared to having another person in the home), to be connected to the community in some way (i.e., not socially isolated), more likely to be women (as compared to men), and were more likely to report having physical problems (indexed as frailty).

Income (Yearly)

The best predictor of whether or not an individual utilized services was their reported income. Compared to participants that made over $50,000 a year, participants who made less than $10,000 (OR = 15.65, $p < .001$), between $10,000 and $19,000 (OR = 7.35, $p < .001$) or between $20,000 and $29,000 (OR = 4.27, $p < .01$) were more likely to report using services. There was no significant difference in service utilization between participants who reported making over $50,000 and users who reported making between $30,000 and $49,000 ($p = .57$).

Overall participants who reported using services made between $10,000 and $29,000 (51.8%). Approximately 21% of participants who reported using services made less than $10,000 (see Figure 1).

Follow up analysis indicated that the majority (70%) of individuals who made less than $10,000 utilized at least one service whereas 13% of individuals who made more than $50,000 reported using at least one service. See Table 1 for complete income breakdown.

Number of People Living in the Home

The number of people reported living in the home significantly predicted utilization of services. For every 1 additional person living in the home, chances of utilization of services *decreased* by approximately 45% (OR = .56, $p < .001$).

Follow up analysis indicated that individuals who did not utilize services ($M_{\#inHome} = 2.0$) were more likely to report living with someone else than individuals utilized services ($M_{\#inHome} = 1.6$; $t(306.98) = -4.01$; $p < .001$).

Social Isolation

Overall there was no significant trend for the social isolation index ($p = .21$). However, there were significant differences in utilization between the categories of social isolation. Compared to participants who reported severe social isolation, users who reported no social isolation were approximately 9 times more likely to utilize services (OR = 9.35, $p = .006$). Participants who reported minimal levels of social isolation were approximately 6 times more likely to utilize services than those who reported severe social isolation. There was no significant difference between participants who reported moderate social isolation and high levels of social isolation. These results suggest that as social isolation increases, overall utilization of services decreases (see Table 1 and Figure 2).

Follow up analysis indicated that the majority of users felt at least somewhat socially isolated (43.1%) with approximately equal percentages of users not feeling isolated at all (23.3%) or feeling moderately socially isolated (24.5%). Only a small percentage of users (9.4%) reported feeling severely socially isolated (see Figure 2).

Frailty

Based on the overall frailty index, participants who reported physical problems were 1.56 times more likely to report utilizing services (OR = 1.51, p = .01). Compared to the most frail group, individuals who reported no frailty were significantly more likely to report using the services (OR = 43.14, $p < .05$) and individuals who reported a slight level of frailty were approximately 15 times more likely to report using the services although these results were only moderately significant (OR = 15.36, $p < .04$). There was only a nominal difference between individuals who reported a moderate level of frailty and those who reported high levels of frailty (OR = 4.38, p = .09). These results may be due to the low number of individuals reporting significant frailty (n = 27) as compared to the other groups (see Table 1) or due to an inverse U distribution of the variable (i.e., as individuals begin to develop physical disabilities they begin to utilize more services until those disabilities become too severe).

Follow up analysis indicated that individuals who reported at least some physical problems ('somewhat frail') comprised the majority of users (36.3%) along with individuals who reported 'moderate' levels of frailty (35.6%; see Figure 3).

Similar to the gender variable, overall utilization by individuals who were classified as 'somewhat frail' was low (23.9%), however, overall utilization by individuals who were classified as 'moderately frail' was higher (43.8%) with the overall utilization by individuals classified as 'severely frail' the highest (51.9%; even though a minority of participants received this classification). See Table 1 for complete information.

Taken together with the results from the logistic regression, these results suggest that utilization of services increase as individuals begin to develop physical disabilities but then decrease once the individual has progressed to a more highly disabled state, possibly entering assistive living facilities or skilled nursing homes. The majority of respondents (99%) to the survey reported that they lived within the community at large making it difficult to support this assertion with the current data set.

Driving

Compared to participants who reported they could drive themselves, participants who *could not* drive themselves were approximately 4 times more likely to utilize services (OR = 3.68, $p < .01$).

Although the majority (73.8%) of users reported that they could drive themselves, overall utilization of services by individuals who could drive was low (24.5%). It is important to note however that utilization by users who could not drive themselves was higher, with 53.8% of non-drivers reporting that they utilized services (compared to 46.2% that did not; see Figure 4).

Gender

Gender moderately predicted service utilization, with women being more likely to utilize services than men (OR = 1.62, p = .08).

Follow up analysis indicated that the majority participants who reported utilizing services were women (70%) although overall utilization of services by women was low (33.9%; see Table 1 and Figure 5).

Other Variables Not in Model

Ethnicity and caregiver status were not utilized in the current model as they were non-significant in the initial chi-square analysis. The limited resource variable utilized in the original chi-square model included income. Once income was separated out, the resulting limited resource variable was non-significant. Marital status was also non-significant once the number of individuals living in the house with the respondent was controlled for. Removal of these variables did not significantly alter the model.

Summary

The single best predictor of service utilization in the current sample was income, followed by the number of people living in the home, social isolation status, and frailty status. According to the current model, geographic information on income distribution should give the best picture of where services are most needed within the community, followed by information on housing density (i.e., number of individuals in a household), social isolation status, and frailty status (with moderate levels of frailty being more predictive of need), driving status, and finally gender.

Table 1

Senior Service Utilization Survey

	Number of Users (Total N)	% of Users	% Within Variable That Use at Least One Service
Income (Yearly)			
< $10,000	28 (40)	20.9	70.0
$10,000 – 19,000	43 (78)	32.1	55.1
$20,000 – 29,000	26 (64)	19.4	40.6
$30,000 – 49,000	14 (94)	11.2	14.9
$50,000+	21 (162)	16.4	13.0
Total	134 (438)		
Social Isolation			
No Social Isolation	37 (160)	23.1	23.1
Some/Minimal Social Isolation	69 (256)	43.1	27.0
Moderate Social Isolation	39 (114)	24.4	34.2
High Social Isolation	15 (29)	9.4	51.7
Total	160 (559)		
Frailty Classification			
No Frailty	31 (159)	19.5	19.5
Some Frailty (1—3)	57 (242)	35.8	23.6
Moderate Frailty (4 – 8)	57 (130)	35.8	43.8
High Frailty (9 – 14)	14 (27)	8.8	51.9
Total	161 (558)		
Driving Status			
Yes	117 (480)	73.8	24.5
No	42 (78)	26.3	53.8
Total	161 (558)		
Gender			
Women	112 (330)	70.0	33.9
Men	47 (228)	30.0	21.0
Total	161 (558)		

Note. Total number of users varies due to missing data. All numbers reflect removal of 6 cases. Percent of users may not add to 100 due to rounding errors.
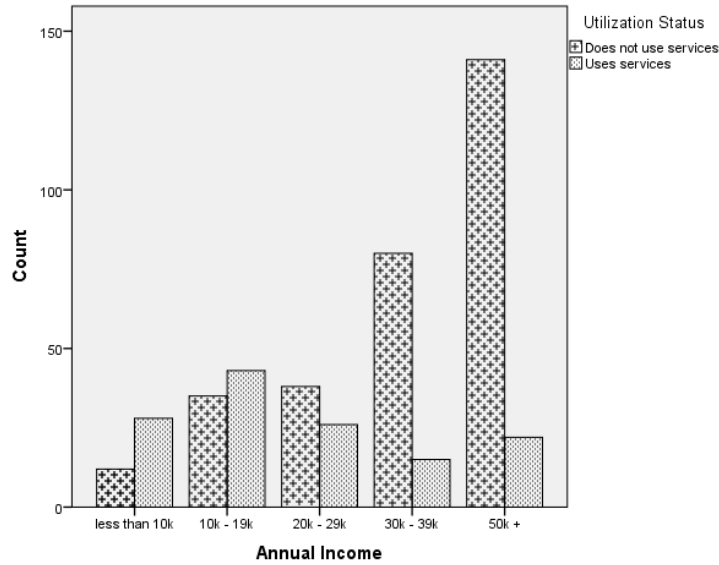
Figure 1. Number of Users by Annual Income

Figure 2. Number of Users – Social Isolation Breakdown

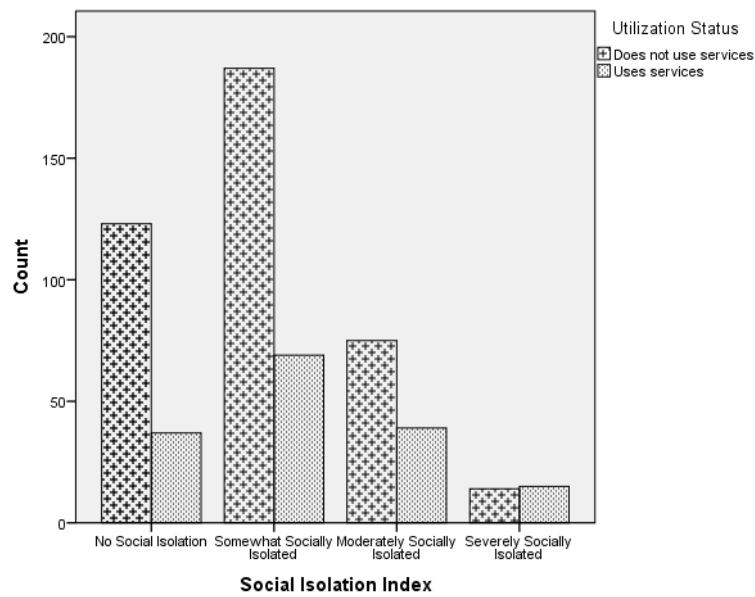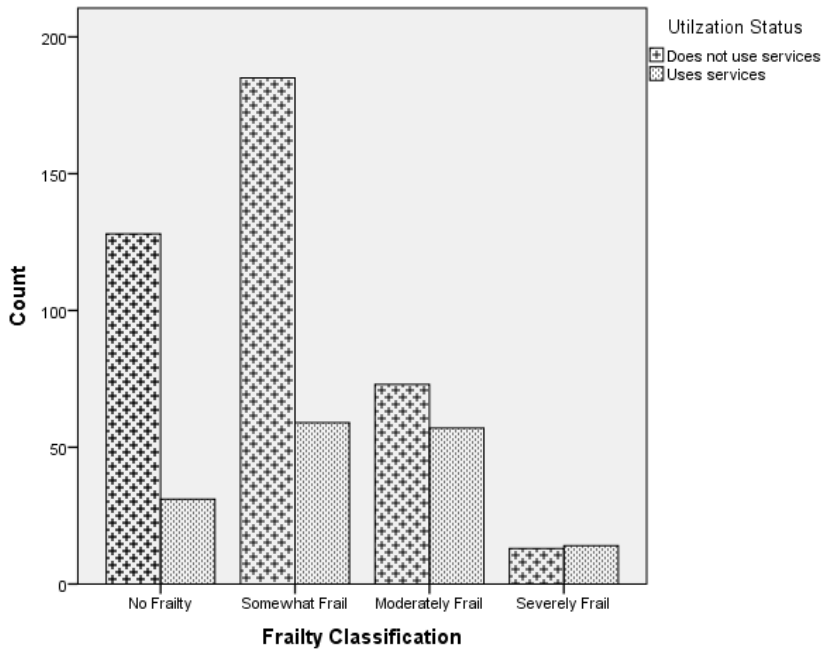*Figure 3.* Number of Users – Categorized by Frailty Classification
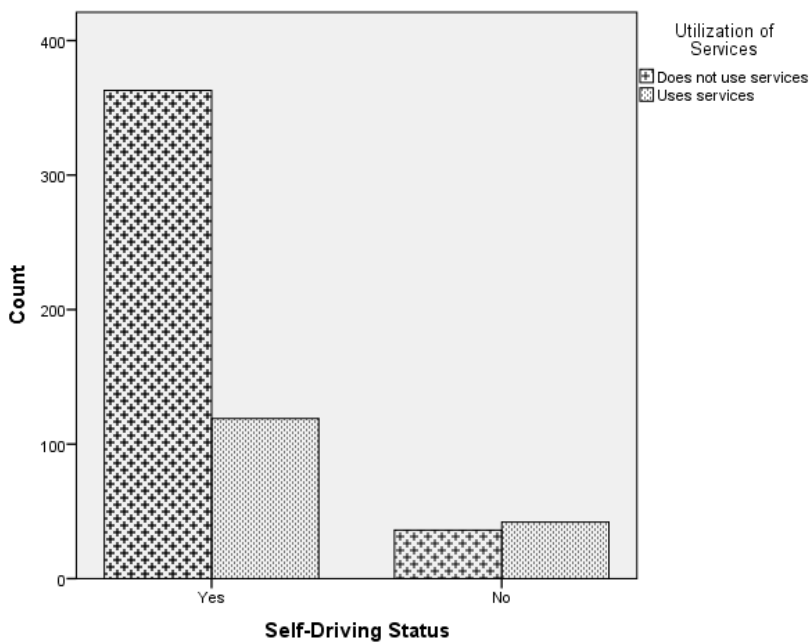

Figure 4. Number of Users – Driving Status

Figure 5. Number of Users – Gender Breakdown