Independent Living Services Need and Satisfaction in Saipan and American Samoa: A Consumer Perspective

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The preservation and growth of support programs for people with disabilities has been largely focused on the mainland United States. This has consequently resulted in limited access of the consumers and their families to federally sponsored programs located in the U.S. territories. The situation can partly be attributed to a lack of knowledge of consumer needs for services and level of satisfaction derived as a measure of the quality of services provided. The purpose of this study was to ascertain the need for and satisfaction with IL services as expressed by CIL consumers in the CNMI and American Samoa. Recommendations for future research have also been listed.

Independent living (IL) is best defined based on one's perception of the meaning of living independently. In other words, the term cannot be defined from a universal perspective. Independent living is a philosophy that enables people with disabilities to have the same basic human rights as their peers without a disability and enjoy a desired quality of life (Ratzka, 2003). The concept of IL evolved secondary to an intense desire to integrate into the mainstream of American society and to be valued as worthy human beings. The issues of consumerism, self-determination, financial autonomy, and improved self reliance acted as catalysts to the IL movement (Nosek, Zhu, & Howland, 1992). However, as per the Walker (2004), the preservation and growth of support programs for people with disabilities has been largely focused on the mainland United States. Consequently, the limited development of an inclusive support system in the U.S. territories has resulted in differential access of the target population and their families to federally sponsored programs as compared to those within the 50 states.

Geo-demography of Saipan and American Samoa

The Commonwealth of the Northern Marianas Islands (CNMI), an American territory, is located in the Northwestern Pacific Ocean, approximately 3,700 miles west of Hawaii, 1,300 miles from Japan, and 125 miles north of Guam. It consists of 14 islands, out of which only Saipan, Tinian and Rota are inhabited. Saipan is considered the capital of CNMI and most services for people with disabilities are only available here. American Samoa, another American territory, is a group of six Polynesian islands in the South Pacific, including the main island of Tutuila (where the capital Pago Pago is located), Aunu'u Island, the Manu'a group, Swains Island, and Rose Island. It became an unorganized and the southern most U.S. territory in 1900. It is the heart of Polynesia and is located 2,599 miles south of Honolulu, HI (U.S. Bureau of Census, 2004).

The populations of CNMI and American Samoa are extensively diverse. The total population of the CNMI, approximately 78,252 (90% live in Saipan), is comprised of Chamorros, Carolinians, Micronesians, Japanese, Chinese, Filipinos, Koreans and Caucasians. About 90.2% identifies with a single race/ethnicity and they are 55.8% Asians, 31.8% Native Hawaiians or other Pacific Islanders, 1.8% Caucasians, 0.1% African Americans, and 0.7% other races. Approximately 9.8% identify as belonging to two or more races. Approximately 66.7% are females, 90% speak a language other than English at home, 14% does not speak English, and 30.6% of families live in poverty. The estimated growth rate of the population is 2.71%. The median age is 31.4 years for men, 28.2 years for women,

and that of the population as a whole is 29.2 years. Unemployment rate is about 3.9% (U.S. Bureau of Census, 2004).

In American Samoa, out of a population of 65,500, 95.7% belongs to one ethnicity/race, i.e., Native Hawaiian and other Pacific Islander including Samoan. Asians comprise at least 2.8%, Whites 1.1%, and African Americans 0.22% of the population. About 4.3% identifies as having two or more races/ethnicity. About 48.9% is female, 40% is below 15 years of age, 4% is above 65 years, and the average age is estimated at 21.3 years. Additionally, 97.1% of the population speaks a language other than English, 3% does not speak English at all, 50% resides in urban areas, and 58.3% of families live below the poverty level. Unemployment rate is about 10.5% (U.S. Bureau of Census, 2004).

In the CNMI and American Samoa, population-based disability data are limited. According to the U.S. Bureau of Census (2004), in Saipan the non-institutionalized population with disability consists of 5.6% aged 5-20 years, 16.3% between the working ages of 21-64 years, and 44.6% aged 65+. In American Samoa, approximately 4.9% of people aged 5 to 20 years, 22.7% of working population aged 21 to 64 years old and 47.6 % of individuals aged 65+ have a disability. The prevalence of hypertension, stroke, and cardiovascular diseases is higher than the general American population. At present, obesity and type 2 diabetes mellitus have risen to epidemic levels among South Pacific Islanders (Lacey & Kaiser, 2007). About 12.67% of those with disabilities in Saipan, CNMI and 22.5% of people with disabilities in American Samoa are employed (U.S. Bureau of Census, 2004).

Independent Living Services to Remote Populations

For minorities and people with disabilities, including those living in the Pacific Rim, the feeling of insecurity and inferiority can not be avoided when interacting with their non-minority counterparts. People with disabilities from minority background often feel discriminated against and hesitant to participate in the community and achieve personal goals due to various environmental and attitudinal barriers. Those with painful experiences of social disparities may not find the concepts of integration and empowerment very appealing. Therefore, the need for support felt by underserved populations transcends differences in race, gender, geographic location, and disability status (Fawcett, White, Balcazar, Suarez-Balcazar, Mathews, Paine, Seekins, & Smith, 1994). In order to address some of the above issues, Centers for Independent Living (CILs) have been strategically designed to educate and involve consumers in the process of planning, providing and evaluating personalized IL services.

These consumer-driven agencies or CILs are required to provide the core services of information and referral, independent living skills training, peer counseling and individual and systems advocacy. Most Centers are also actively involved in one or more of the following activities: community planning and decision making, school-based peer counseling, role modeling, skills training, working with local governments and employers to open and facilitate employment opportunities, interacting with local/state/federal legislators, and staging recreational events that integrate individuals with disabilities with their peers without disabilities (Stoddard & Premo, 2004). Other services provided by CILs are health and prevention education, IL skills training for performing activities of daily living (ADL), and training to use assistive technology (AT) devices. However, considerable disparities exist in services received by segments of the U. S. population as a function of their race/ethnicity, gender, age, type and significance of disability, socioeconomic status, geographic location (urban, rural, remote), and linguistic differences.

As per Stodden, Stodden, Kim-Rupnow, Thai, and Galloway (2003), people from racial and ethnic minorities especially those with disabilities may often experience poverty, high un-employment, substandard nutrition, lack of health insurance, poor education, and substance abuse. When the above factors are coupled with linguistic differences, cultural idiosyncrasies, and geographic remoteness, their effects on life with a disability may be quite overwhelming. Consequentially, they are often in dire need of professional and public assistance. Therefore the above group, with significantly higher rates of disability compared to the general American population, need to be specifically identified and services planned to address the inherent issues related to their divergence from the U.S. mainstream.

The limited amount of information available on certain race/ethnicity, e.g., Asian American and Pacific Islanders with disabilities, continues to be a major obstacle to ascertaining their service related needs and developing appropriate policies and practices that address those needs. The issue is compounded by the remoteness of a section of this population that resides in rural America or the Pacific Rim. Additionally, there is a severe lack of research focusing on the above issues pertaining of diverse populations residing in remote parts of the U.S., speaking English as a second language, and reporting significant cultural differences with the American mainstream (Kim-Rupnow, Park, & Starbuck, 2005).

Need for and Satisfaction with IL Services

Since IL is a part of this complex array of human service agencies strategically designed to assist people with disabilities, it is imperative that concerted ef-

forts be devoted to ascertaining the pattern of needs and satisfaction expressed by the consumers of such centers/programs. This will, in turn, play a key role in planning and delivering services, justifying allocation of sparse resources to a segment of disability population for whom competitive employment may not be an option, and evaluating the outcome of IL services for underserved populations in remote locations (Innes, Endes, Seekins, Merritt, Kirshenbaum, & Arnold, 2000).

As CILs are operated by and for people with disability highlighting a strong sense of consumerism, periodic consumer needs assessment becomes even more important. In the year 2003-2004, the California State Independent Living Council (SILC) Assessment and the Department of Rehabilitation (DOR) conducted a statewide IL needs assessment to report the following: (1) A need for health and medical care professionals to be more aware of disability-related issues, (2) Health insurance providers need to make personal assistance services available to them, (3) Housing and transportation must be made accessible, affordable, safe, available and reliable, (4) Consumer assistance must be provided for understanding disability and legal rights, (5) Emergency services and procedures are needed for this population, (6) There is a need for assistance in obtaining AT, (7) Consumers must have access to information and resources for successful community living and financial stability, (8) Employment services need to be provided on an individualized basis, (9) There is a need for individual empowerment and peer support, (10) CIL personnel must enforce current regulations appropriately, and (11) There is a need to provide services to new immigrant community members with disabilities. For individuals who are deaf, the need for interpreter services was also expressed. Disability accommodation was highlighted especially by individuals with visual impairments.

During 2003-2004, the Postdam Institute for Applied Research (2004) conducted a statewide consumer satisfaction survey in New York with a sample of 3,023 active cases. Seven satisfaction and four demographic questions were asked. Seven satisfaction questions were: (1) staff helped me understand my choices (91% were satisfied), (2) staff encouraged me to make my own decisions (92% were satisfied), (3) overall, I was satisfied with the Center's staff (90% were satisfied), (4) I benefited from the information I received (89% were satisfied), (5) I benefited from the services I used (89% were satisfied), (6) I would recommend the Center to others (91% were satisfied), and (7) overall, I was satisfied with the Center (90% were satisfied).

Traditionally, rehabilitation services, including IL, were delivered following the standards determined by legislation. However, this focus is gradually changing to incorporate client-based outcome evaluation in determining the efficacy of service delivery programs in rehabilitation (Kramer, Fuhrer, Keith, & Materson, 1997). Therefore, it is imperative that client input be requested in ascertaining the scope and quality of services provided and outcomes achieved by CILs. However, the ambiguity of the concepts of need and satisfaction and extensiveness of the task imposed upon practitioners has made the transition from legislation-directed to consumer-directed much harder (Parry-Jones & Soulsby, 2001).

In this regard, it is important to describe the concepts of need and satisfaction. There is no consensus on the meaning of need in health sciences, sociology, and political literature (Lightfoot, 1995). The situation is complicated by the fact that some specific needs often do not fall neatly into health services or social services domains that are correlated with the other. For example, those with devalued perception of health status have more social needs and accordingly addressing social needs may have a direct impact on general health status (this can be eventually categorized into the health domain, probably indicating the holistic nature of needs). Therefore, need (often described as a person's desire to received certain services and the capacity to benefit from those services) has a broad spectrum reflecting the full range of human experiences. Additionally, need may have a direct effect on satisfaction with services but the direction of the relationship is not clear. For example, a person may have a need for more information on certain services. If this need is unmet, it may result in dissatisfaction with services. Alternatively, a better informed individual may have higher expectations and so be dissatisfied with services (Asadi-Lari, Tamburini, & Gray, 2004).

Just like need, the construct of consumer satisfaction lacks a consensual definition. Most definitions emphasize the idea of a response to an evaluation process (Fornell, 1992). The types of response vary from a cognitive or an affective response (Bolton & Drew, 1991), to an overall evaluation (Fornell, 1992), to a psychological state (Howard & Seth, 1969), to a global evaluative judgment (Westbrook, 1987), and/or to a summary attribute phenomenon (Oliver, 1993). This response has a specific focus, e.g., expectation, product, etc. The intensity of response is the strength of satisfaction ranging from strong to weak. These responses occur at a particular time, i.e., after consumption, based on accumulated experience, etc (Giese & Cote, 2000).

Purpose

The purpose of this study was to ascertain the need for and satisfaction with IL services as expressed by CIL consumers in the CNMI and American Samoa. Efforts were devoted to identifying the structure of IL services received by consumers. Additionally, the reli-

ability of data collection instrument was calculated for the target population. Two hypotheses and one research question were tested/answered by the study: (1) There is no significant difference in the consumer need for IL services as a function of age, race, educational attainment, and employment status. (2) There is no significant difference in the expressed satisfaction with IL services received as a function of age, race, educational attainment, and employment status. (3) What is the pattern/structure of IL services need and satisfaction as expressed by consumers with disabilities in the Saipan and American Samoa?

Methodology and Instrumentation

The design of this survey research was exploratory and descriptive in nature. A two-part questionnaire, entitled *Need and Satisfaction with Independent Living Services: Consumer Response Form*, was used. Part 1 consisted of demographic information (measured by a nominal scale) in the form of 18 questions such as (1) gender (2 categories), (2) age (10 categories), (3) race (7 categories), (4) educational attainment (10 categories), (5) current employment status (3 categories), (6) monthly income (6 categories), (7) number of current/previous employment (4 categories), (8) employment plan (3 categories), (9) living arrangement (4 categories), (10) disability classification (11 categories), (11) assistive tech/device (8 categories), (12) driving ability (requires yes or no answer), (13) availability of public transportation (yes or no), (14) awareness of VR services (yes or no), (15) knowledge of VR services (9 categories), (16) referral to IL services (10 categories), (17) received VR services (yes or no) and (18) familiarity of ADA of 1990 (yes or no).

Part II, entitled *Independent Living Services Needs and Satisfaction*, contained five IL service domains: (1) Advocacy and Individual Services (6 services), (2) Training Services (5 services), (3) Information and Referrals (14 services), (4) Assistive Technology Services (9 services), and (5) Miscellaneous (8 services). This part of the questionnaire is designed to assess the need for and satisfaction with a total of 42 IL services measured on Likert scale (Likert, 1931). The format for the 5-point Likert scale is as follows: (1 = little need, 2 = average need, 3 = great need, 4 = extreme need, and 5 = emergency need). Satisfaction was measured on a 5-point Likert scale (1 = highly dissatisfied, 2 = dissatisfied, 3 = neutral, 4 = satisfied, and 5 = highly satisfied). The face and content validity of the entire questionnaire was established by receiving and incorporating feedback from repute IL researchers in the country.

Participants

Participants were consumers with disabilities from two CILs: (1) Saipan (N = 50) in the Commonwealth of Northern Mariana Islands and (2) the American Samoa (N = 80). These consumers were persons with active IL cases during fiscal year 2004-2005. For the purpose of this study, an active case is defined as one who received IL services at least twice during fiscal year 2004-2005. In order to carry out the research involving this population, approval from the respective ILC coordinator or director was obtained. A total of 64 completed questionnaires were returned resulting in a 49.23% response rate.

Data Collection

A total of 130 packets containing the following were mailed to the respective CIL Coordinators in Saipan and the American Samoa: (1) a cover letter, (2) a statement of informed consent, (3) the pre-coded two-part questionnaire, and (4) a self-addressed stamped envelop. The ILC Coordinators were asked to alphabetize the cases active during fiscal year 2004-2005 by their last names, assign each one a code number, attach consumer names and addressees to the envelops, and mail the stamped packets to the consumers. The completed questionnaires were returned to the respective CIL Coordinators in sealed envelops. Three weeks after the first mailing, the CIL Coordinators was informed of the codes of the non-respondents for mail reminders. Two weeks after the first follow-up, another list of non-respondent codes was provided to the CIL Coordinators in order to conduct a telephone follow-up.

Data Analysis

Descriptive statistics were utilized to summarize the data. Mode was used for all the variables in Part I and Part II. Mean was used to calculate the average need for and satisfaction with IL services as expressed by the respondents in the Part II of the questionnaire. The t-test was used to test Ho_1 and Ho_2 involving gender (Male and Female) and salary earned (High and Low). Analysis of variance (ANOVA) to test Ho1 and Ho2 involving the independent variables of age, race, educational attainment and employment status. Scheffe's multiple comparison statistical procedure was used to determine differences between groups of unequal means. Cronbach's alpha or coefficient alpha is a measure of internal consistency. As per Nunnally (1978), the value of the coefficient normally ranges from 0 to 1 however, there is no lower limit. A reliability coefficient of 0.70 or higher is considered acceptable in social sciences. Factor analysis was used to respond to Research Question #1.

Results

Forty (64.5%) of the 62 respondents were female. Of 61 reporting age, 15 (24.6%) were 66+, 12 (19.7%) were 46-55, 10 (16.4%) were 56-65, 8 (13.1%) each

aged 16-25, 26-35, and 36-45. There were 2 (3.2%) American Indians, 1 (1.6%), Caucasian, and 59 (95.2%) Pacific Islanders. (See Table 1).

Fifty (79.4%) out of 63 respondents reported awareness of VR services and 13 (20.6%) reported no awareness. Out of 58, 20 (34.5%) said that they were knowledgeable of the ADA 1990 and 38 (65.5%) were not aware of the legislation.

Summaries of Need for and Satisfaction with IL Services

Cronbach's alpha was used to calculate the reliability of the instrument. The reliability coefficient of 0.87 in the need section and 0.71 in the satisfaction section suggest moderately high to high internal consistency. (See Table 2). Upon testing on the first hypothesis with age as the independent variable, it was found that need for 19 services belonging to all 5 domains were significant. For this analysis, age was collapsed into three categories: 16-35, 36-55 and 56+. (See Table 3).

Scheffe's post hoc analysis with age as the independent variable: (1) Legal services - significant differences existed between the age ranges of 36-55 (M = 2.63, SD = 1.09) and 56-66+ (M = 1.45, SD = 0.80). (2) Self-care services - significant difference existed between ages 16-35 (M = 4.00, SD =1.00) and 36-55 (M = 2.88, SD = 1.13). (3) Peer counseling or peer support services - significant difference were in age ranges 16-35 (M = 2.67, SD = 1.23) and 56+ (M = 1.45, SD = 0.76). (4) Family support - significant difference were between age ranges 16-35 (M = 3.33, SD = 1.53) and 556+ (M = 1.89, SD = 0.90). (5) Independent living skills or life skills training services - significant difference existed among age ranges 16-35 (M = 4.00, SD = 1.00), 36-55 (M = 2.50, SD = 1.19) and 56+ (M = 1.39 SD = 0.70). (6) Mobility training - significant difference were there among age ranges 16-35 (M = 3.25, SD = 0.50), 36-55 (M = 1.80, SD = 1.13) and 56+ (M = 1.58, SD = 0.77). (7) Educational training services - significant difference existed in age ranges 16-35 (M = 3.25, SD = 1.49) and 56+ (M = 1.33, SD = 0.89). (8) Vocational or Job skills training services - significant difference existed between age range 16-35 (M = 3.50, SD = 1.22) and 56+ (M = 1.36, SD = 0.84). (9) Job interview or resume writing assistance - significant differences were there between ages 16-35 (M = 2.50, SD = 1.52) and 56+ (M = 1.21, SD = 0.43). (10) Vocational services - significant differences existed between age ranges 16-35 (M = 2.71, SD = 0.76) and 56+ (M = 1.43, SD = 0.51). (11) Transportation services - significant difference was there between age ranges 36-55 (M = 2.82, SD = 1.51) and 56+ (M = 1.81, SD = 0.87). (12) Assistive devices or equipment services - significant differences existed among those aged 16-35 (M = 3.60, SD = 1.17), 36-55 (M = 2.07, SD = 1.16) and 56+ (M = 1.94, SD = 1.24). (13) Hearing aid services - significant difference was between those aged 16-35 (M = 3.83, SD = 1.17) and 56+ (M = 2.18, SD = 1.42). (14) Personal resource management - significant difference existed among age ranges 16-35 (M = 2.80, SD = 1.30, 36-55 (M = 2.45, SD = 1.29 and 56+ (M = 1.31, SD = 0.63). (15) Public transportation/mobility accommodation - significant differences existed among the age ranges of 16-35 (M = 3.00, SD = 1.48), 36-45 (M = 2.69, SD = 1.25) and 55+ (M = 1.53, SD = 0.84).

Upon testing the first hypothesis with educational attainment as the independent variable, it was found that need for 8 services belonging to 4 domains were significant. For this purpose, educational attainment was collapsed into three categories: (1) Special education certificate and less than high school, (2) GED and high school and (3) Some college and associate degree. (See Table 4). Upon testing the first hypothesis with employment status as the independent variable, it was found that need for 26 services belonging to all 5 domains were significant. (See Table 5).

Scheffe's post hoc analysis with employment status as the independent variable: (1) Assistive devices or equipment services - significant differences existed between those who were employed and receiving SSI/SSDI (M = 4.00, SD = 0.81) and unemployed and not receiving SSI/SSDI (M = 1.88, SD = 1.14). (2) Mobility services - significant differences existed among those who were employed and receiving SSI/SSDI (M = 3.67, SD = 0.57), unemployed and not receiving SSI/SSDI (M = 1.71, SD = 0.77) and never been employed and receiving SSI/SSDI (M = 4.00, SD = 1.41).

Upon testing on the second hypothesis with age as the independent variable, it was found that satisfaction with 9 services belonging to 3 domains were significant. For this analysis, age was collapsed into three categories: 16-35, 36-55 and 56+. (See Table 6).

Scheffe's post hoc analysis with age as the independent variable: (1) Educational training services - significant difference existed between age range 16-35 (M = 2.00, SD = 0.93) and 56+ (M = 3.09, SD = 0.30). (2) Counseling and related services - significant differences existed among the age ranges of 16-35 (M = 4.43, SD = 0.53), 36-55 (M = 3.64, SD = 0.84) and 56+ (M = 3.30, SD = 0.56). (3) Group homes/nursing/shelter's services - significant differences existed between the age ranges of 16-35 (M = 4.33, SD = 0.58) and 56+ (M = 3.21, SD = 0.70). (4) Rehabilitation services - significant differences were among age ranges 16-35 (M = 4.22, SD = 0.67), 36-55 (M = 3.38, SD = 0.87) and 56+ (M = 3.44, SD = 0.70). (5) Transportation services - significant differences were between age range 16-35 (M = 4.23, SD = 0.60) and 56+ (M = 3.37, SD = 0.68). (6) Library accommodation - significant differences existed between the age ranges of 16-35 (M = 3.86, SD = 1.07) and 36-55 (M = 2.70, SD = 1.06).

Upon testing the second hypothesis with educational attainment as the independent variable, it was found

Table 1. ***Demographic Characteristics of the Participants***

Variable	F	%
Types of Disability (N=63; multiple responses)		
Spinal Cord Injury	6	9.5
Traumatic Brain Injury	4	6.3
Stroke	7	11.1
Cardiac Condition	9	14.3
Diabetes	16	25.4
Kidney Failure	10	15.9
Mobility Impairment	23	36.5
Alcohol Abuse	1	1.6
Developmental Disability	10	15.9
Learning Disability	6	9.5
Mental Illness	2	3.2
Hearing Impairment/Deaf	12	19.0
Visual Impairment	17	27.0
Other	48	76.2
Educational Attainment (N=61)		
Special Education Certificate	3	4.9
Less than High School	16	26.2
GED	6	9.9
High School	26	42.6
Some College	7	11.5
Associate Degree	3	4.9
Current Employment Status (N=61)		
Employed and Receiving SSI/SSDI	6	9.8
Unemployed and Receiving SSI/SSDI	24	39.3
Unemployed Not Receiving SSI/SSDI	25	41.0
Never Been Employed and Receiving SSI/SSDI	2	3.3
Never Been Employed Not Receiving SSI/SSDI	4	6.6
Monthly Income (N=16)		
$ 1- 250	5	31.3
$251- 500	4	25.0
$501- 750	3	18.8
$751- 1,000	3	18.8
$1,001+	1	6.1
Years of Employment (N=45)		
Less Than 1 Year	9	20.0
1-5 Years	12	26.7
6-10 Years	8	17.8
11+ Years	16	35.5
Seeking Employment? (N=54)		
Yes	11	20.4
No	40	74.0
Unsure	3	5.6
Driving Status (N=62)		
Yes	17	27.4
No	45	72.6
Use of Public Transportation (N=62)		
Yes	31	50.0
No	31	50.0
VR Service Awareness (N=63)		
Yes	50	79.4
No	13	20.6
Previously received or currently receiving services (N=47)		
Yes	26	55.3
No	21	44.7
Knowledge of the ADA 1990 (N=58)		
Yes	20	34.5
No	38	65.5

Table 2. ***Descriptive Statistics: Needs and Satisfaction***

Services	Need		Satisfaction	
	Mean	Mode	Mean	Mode
1. Advocacy and Individual Services				
a) Legal services	1.98	1	3.02	3
b) Self advocacy or self-empowerment	1.94	2	3.34	3
c) Self-care	2.03	1	3.38	3
d) Peer counseling or peer support services	2.19	2	3.51	3
e) Personal assistance services	2.24	1	3.02	3
f) Family support	2.16	2	3.32	3
2. Training Services				
a) IL skills or life skills training services	1.97	1	3.11	3
b) Mobility training services	1.85	1	3.48	4
c) Educational training services	2.26	1	2.50	3
d) Vocational or job skills training services	2.14	1	3.11	3
e) Job interview resume writing assistance	1.67	1	2.84	3
3. Information and Referrals				
a) Counseling and related services	1.96	1	3.63	4
b) Medical referral	2.29	2	3.22	3
c) Therapeutic t_x/physical restoration services	2.11	1	3.11	3
d) Mental restoration services	1.78	1	3.03	3
e) Housing and home modification	2.41	1	3.31	3
f) Group homes/nursing homes/shelters services	1.52	1	3.50	4
g) IL or supported living services	2.05	2	3.49	4
h) Rehabilitation services	2.02	1	3.61	4
i) Vocational services	2.03	1	3.20	3
j) Educational services	1.68	1	2.83	3
k) Recreational services	2.15	3	3.45	3
l) Transportation services	2.33	1	3.78	4
m) Job placement training	1.74	1	3.15	3
n) Employment services	1.90	1	3.07	3
4. Assistive Technology Services				
a) Assistive device or equipment services	2.38	1	3.63	4
b) Mobility aid	2.33	1	3.79	4
c) Orthosis	1.71	1	2.80	3
d) Prosthesis	1.95	1	3.06	3
e) Hearing aid	2.46	1	2.90	3
f) Visual aid	2.56	3	3.50	4
g) Vehicle modification	2.22	1	3.04	3
h) Communication devices	1.81	1	3.11	3
i) Information access or technology	2.00	1	3.13	3
5. Miscellaneous				
a) Children's services	1.53	1	2.79	3
b) Youth services	1.82	1	2.82	3
c) Personal resource management	2.00	1	3.07	3
d) Communication accommodation	1.79	1	3.08	3
e) Library accommodation	1.97	1	3.07	3
f) Pub. transportation/mobility accommodation	2.28	1	3.61	4
g) Community education	2.22	1	3.29	3
h) Community and social integration	2.28	1	3.35	3

Table 3. ***Analysis of Variance of Age and Needs***

IL Services	df	f	p
Advocacy individual services:			
Legal service	47	6.94	0.02
Self-care	30	15.42	0.00
Peer counseling or peer support	46	4.70	0.01
Family support	35	3.36	0.05
Training Services:			
IL skills or life skills training services	28	13.26	0.00
Mobility training services	32	6.04	0.01
Education training services	26	7.00	0.01
Vocational or job skills training services	28	9.90	0.00
Job interview or resume writing assistance	25	4.96	0.02
Information and Referral Services			
Counseling and related services **	43	3.70	0.03
Vocational services	30	3.33	0.02
Transportation services	49	3.95	0.03
Employment services **	29	4.18	0.03
Assistive Technology Services			
Assistive devices or equipment services	40	6.82	0.00
Prosthesis *	18	3.70	0.05
Hearing aid services	26	4.19	0.03
Visual aid services **	42	3.61	0.04
Miscellaneous			
Personal resource management	28	5.38	0.01
Public Transportation/mobility accommodation	45	7.08	0.00

** Post hoc could not be conducted due to small sample size.*
*** Scheffe's post hoc analysis revealed no significant difference.*

Table 4. ***Analysis of Variance of Educational Attainment and Needs***

IL Service	df	f	p
Advocacy and Individual Services			
Legal services *	47	4.30	0.02
Self advocacy or self-empowerment *	51	3.78	0.03
Peer counseling or peer support **	46	3.43	0.04
Information and Referrals			
Housing and home modification services *	41	4.52	0.02
Recreational services *	31	5.14	0.01
Assistive Technology			
Communication device *	25	5.13	0.01
Miscellaneous			
Children's services *	17	5.51	0.02
Communication accommodation *	22	5.87	0.01

** Post hoc could not be conducted due to small sample size.*
*** Scheffe's post hoc analysis revealed no significant difference.*

Table 5. ***Analysis of Variance of employment status and needs***

IL Services	df	f	p
Advocacy and Individual Services			
Self-care *	29	5.33	0.00
Peer counseling or peer support	45	7.26	0.00
Personal assistance **	43	3.47	0.02
Family support *	34	3.76	0.01
Training Services			
IL skills or life skills training services *	26	5.63	0.00
Mobility training services *	30	4.90	0.00
Educational training services *	24	3.18	0.04
Information and Referral Services			
Counseling related services *	43	8.33	0.00
Medical referral services *	35	4.11	0.01
Mental restoration services *	34	4.68	0.00
IL or supported living services **	34	3.96	0.01
Rehabilitation services **	40	2.76	0.04
Educational services *	22	9.59	0.00
Recreation services *	31	4.23	0.01
Assistive Technology			
Assistive devices or equipment services	39	4.17	0.01
Mobility aid	30	6.25	0.00
Orthosis services *	14	4.50	0.03
Vehicle modification *	20	4.72	0.01
Communication device services *	24	3.72	0.03
Information access or technology *	20	8.69	0.00
Miscellaneous			
Children's services *	16	3.75	0.04
Personal resource management *	26	3.31	0.03
Library accommodation services *	26	4.15	0.01
Public transportation/mobility accommodation *	44	3.62	0.01
Community education **	38	4.12	0.01
Community or social integration services *	37	2.83	0.04

* Post hoc could not be conducted due to small sample size.
** Scheffe's post hoc analysis revealed no significant difference.

that satisfaction with 2 services belonging to 1 domain were significant. For this analysis, educational attainment was collapsed into three categories such as, special education and less than high school, GED and high school, and some college and associate degree. (See Table 7).

Scheffe's post hoc analysis with educational attainment as the independent variable: (1) Therapeutic treatment or physical restoration - significant difference existed between those who had special education certificate and less than high school (M = 3.69, SD = 1.03) and those who had GED and high school education (M = 2.81, SD = 0.75). (2) Recreational services - significant difference existed in groups with special education certificate and less than high school (M = 3.70, SD = 0.48), GED and high school (M = 2.93, SD = 0.62 and some college and associate degree (M = 4.00, SD = 1.00). Upon testing the second hypothesis with employment status as the independent variable, it was found that satisfaction with 4 services belonging to 3 domains were significant. (See Table 8).

Exploratory Factor Analysis for Need (See Table 9)

Exploratory Factor Analysis for Satisfaction (See Table 10)

Table 6. ***Analysis of Variance of age and satisfaction***

IL Services	df	f	p
Training Services			
Educational training services	25	4.91	0.02
Vocational or job skills training services **	27	3.90	0.03
Information and Referral			
Counseling and related services	43	7.88	0.00
Group homes/nursing homes/shelters services	23	4.41	0.02
Rehabilitation services	39	3.97	0.03
Transportation services	48	4.06	0.02
Employment services **	28	3.60	0.04
Assistive Technology			
Communication device	27	3.69	0.04
Miscellaneous			
Library accommodation services	29	3.64	0.04

*** Scheffe's post hoc analysis revealed no significant difference.*

Table 7. ***Analysis of Variance of Educational Attainment and Satisfaction***

IL Services	df	f	p
Information and Referrals			
Therapeutic treatment or physical restoration	34	3.84	0.03
Recreational services	30	7.01	0.00

Discussion

Sixty three completed questionnaires were returned out of 130 mailed to CIL consumers in Saipan and American Samoa. Respondents to each variable varied in number. A majority of the respondents were women (N=40, 64.5%). The highest proportion of the respondents (N=15, 24.6%) was aged 66+ and the median age range was 46-55 years. Therefore, it can be stated that a large segment of the respondents was near retirement. Not surprisingly, a majority of the participants was Pacific Islander (N=59, 95.2%). There was no representation of African Americans, Asians, and Hispanics. Though a significant portion of the population of Saipan and American Samoa is comprised of Asians, this lack of representation may reflect less knowledge of and access to IL services due to socio-economic and cultural issues related to disabilities, existence of language barrier, and lack of trust in the traditional human services systems (Satel & Forster, 1996; Taylor & Brown, 1984).

A majority of the respondents possessed a high school diploma or had some college education (N=33, 54.1%), the Associate degree (N=3, 4.9%) was the highest reported academic attainment. About 80.3% (N=49) respondents were unemployed. Low education level may explain a high unemployment rate for the respondents and the situation may have been aggravated by the presence of a disabling condition (Loprest & Maag, 2003). Additionally, the fact that a large number of respondents were aged between 45 and 66+ years may explain low employment rate. More than one-third (N=16, 35.5%) reported that they either used to be employed or are currently employed for 11+ years. This can be explained by the fact that a large segment of the respondents were between 45 and 66+.

Respondents were asked to identify as many disabilities as applicable. Mobility impairment was the most frequently (N=23, 36.5%) occurring disability followed by diabetes (N=16, 25.4%). Three-fourth of the respondents reported being aware of VR services. However, it could be possible that access to adequate information on the scope and extent of VR was limited for some participants. A little more than half reported being previous or current VR consumers and the remaining never received VR services. Friends/relatives and other sources were the most effective way of spreading the news about VR services and referral

Table 8. ***Analysis of Variance of Employment Status and Satisfaction***

IL Services	df	f	p
Training Services			
Vocational or job skills training services *	25	3.79	0.02
Information and Referral			
Counseling and related services *	43	3.36	0.02
Miscellaneous			
Communication accommodation services *	22	3.65	0.03
Community or social integration services *	37	3.13	0.03

** Post hoc could not be conducted due to small sample size.*

methods. Surprisingly, VR counselors were the least mentioned referral source. Results revealed that (N= 38, 65.5%) were not aware of the ADA. Limited access to information or the Internet, low education level, and linguistic issues could be a reason for the above lack of information.

Discussion on Testing of Hypotheses

Literature on the provision of necessary and adequate IL services to consumers in remote locations is scarce at best and often does not fully include culturally and linguistically diverse groups. Therefore, the findings of this study may cast some light on the pattern of need for and satisfaction with service expressed by CIL consumers with disabilities.

There were significant differences in the need for disability related services as functions of age, educational attainment and employment status. Fifty-three One-way ANOVAs were significant: (1) 19 services were significant as a function of age, (2) 8 were significant as function of educational attainment and (3) 26 were significant as a function of employment status. Out of 53 significant ANOVA, 27 Scheffe's post hoc did not run due to low sample size, 8 revealed no significant difference and 18 revealed significant differences. Greater need for services was perceived by those aged 16-35 years in almost all significant services. A greater level of need was perceived for family and social support, services related to job placement, transportation services, and use of assistive technology by members of this group. Additionally, there were significant differences in satisfaction with IL services received by consumers as functions of age, educational attainment and employment status. Fifteen One-way ANOVAs were significant: (1) 9 services were significant as a function of age, (2) 2 were significant as function of educational attainment and (3) 4 were significant as a function of employment status. Out of 15 significant ANOVAs, 4 Scheffe's post hoc did not run due to low sample size, 2 revealed no significant difference and 9 revealed significant differences. For most of the significant services, consumers aged 16-35 years expressed the highest level of satisfaction. On the other hand, greater satisfaction was perceived for all except educational training services. This may be attributed to the fact that persons aged 16-35 are in the process of obtaining training on their way to entering/re-entering the labor force and a more stable life, have better knowledge of community resources, higher proficiency in English, and probably higher educational attainment in this group as compared to the older consumers. group (Bond & Castagnera, 2006; Laursen, 2005; Rhoades, 1986).

Limitations of the study are as follows: (1) Convenient sampling was conducted for the purpose of data collection. Therefore, the issue of selection bias could not be eliminated. (2) Since the Coordinators/Directors of CILs were asked to disseminate questionnaires and to facilitate the survey process, participants might have answered the questionnaire differently anticipating consequences for responses provided. (3) Low sample size did not allow several multiple comparisons to be conducted. (4) Linguistic and cultural differences could have resulted incorrect responses to the study instrument. Located in small islands with close knit society, it could have been difficult for the respondents to express their actual need for and satisfaction with IL service provided by a close acquaintance.

Implications for Future Research

The questionnaire used for this study can be validated for consumers to reflect all five recognized racial categories in the U.S. Such endeavor will assist in comparing the perception of consumers relative to their ethnicity, training service providers in areas found to be important for specific groups, and building community capacities for better integration of consumers in society. Additional research is required in this area.

A longitudinal trend analysis should be conducted in Saipan and American Samoa to examine the pattern

Table 9. ***Factor Analysis of IL Services Need***

Factor	Rotated Factor Loading
1. Advocacy and Individual Services	
Factor 1 – Independent living support needs	
Self-care	0.72
Family support	0.84
Factor 2 – Legal services	0.90
2. Training Services	
Factor 1 – Educational training services	0.94
Factor 2 – Job interview or resume writing assistance	0.92
3. Information and Referrals	
Factor 1 – Rehabilitation Services:	
Housing or home modification	0.71
Rehabilitation services	0.79
Vocational services	0.76
Recreational services	0.96
Factor 2 – Counseling and health services:	
Counseling related services	0.86
Medical referral	0.75
Group homes/nursing homes/shelters services	0.86
Factor 3 – Employment related services:	
Transportation services	0.79
Job placement training	0.82
4. Assistive Technology	
Factor 1 – Assistive tools and aids:	
Orthosis	0.98
Hearing aid	0.94
Visual	0.86
Factor 2 – Assistive device:	
Prosthesis	0.94
Communication devices services	0.94
Information access or technology	0.94
Factor 3 – Vehicle modification	0.83
5. Miscellaneous	
Factor 1 – Access and accommodation:	
Children's services	0.86
Public transportation/mobility accommodation	0.82
Factor 2 – Personal resource services:	
Personal resource management	0.90
Community or social integration	0.77

Table 10. ***Factor Analysis of IL Services Satisfaction***

Factor	Rotated Factor Loading
1. Advocacy and Individual Services	
Factor 1 – Individual empowerment:	
Legal services	0.78
Self-advocacy or self-empowerment	0.81
Factor 2 – Peer counseling or peer support	0.93
2. Training Services	
Factor 1 – Vocational or job skills training services	0.95
Factor 2 – Educational training	0.94
Factor 3 – IL skills or life skills training services	0.91
3. Information and Referrals	
Factor 1 – Employment related services:	
Vocational services	0.83
Job placement training	0.85
Employment services	0.87
Factor 2 – IL support services:	
Counseling related services	0.95
IL or supported living services	0.88
Factor 3 – Health and wellness:	
Medical referral	0.89
Recreational services	0.74
4. Assistive Technology	
Factor 1 – Assistive tools:	
Orthosis	0.93
Hearing aid	0.91
Visual aid	0.81
Factor 2 – Mobility services:	
Mobility aid	0.91
Prosthesis	0.73
Factor 3 – Access and communication:	
Communication device services	0.94
Information access or technology	0.79
5. Miscellaneous	
Factor 1 – Physical and information access:	
Children's services	0.72
Communication accommodation	0.88
Public transportation/mobility accommodation	0.74
Factor 2 - Youth services	0.92
Factor 3 - Library accommodation	0.93

and structure of IL needs and satisfaction of consumers. This will also help determine the temporal effects of the following on consumer access, retention, and use of IL skills post-closure: (1) changes in policy, (2) resource allocation, (3) scope of service delivery, and (4) provider proficiency in addressing the needs of target population in remote locations.

A qualitative study, involving states with high concentration of non-mainstreamed populations can be conducted to obtain an in-depth and a naturalistic picture of the meaning of IL (if any), status of IL service delivery, and recommendations for improvement. For the purpose of this research, non-mainstreamed population may be defined as those who speak English as a second language, have documented cultural differences with the White middle class American, and live in remote locations. Use of client observation and provider interviews could prove to be useful in collecting information from non-traditional population. In addition, cultural brokering and train-the-trainer technique could be used to build local capacity in the conduct of participatory action research.

Conclusion

The incidence of disabling conditions in Saipan and American Samoa is comparable to that of the U.S. in general. However, the presence of linguistic and cultural differences, low education, high unemployment, low income, and lack of knowledge and understanding of the concepts of IL and VR can be often overwhelming for people with disabilities. These factors could have greatly influenced the quality and quantity of responses to this study. In general, consumers expressed "little" to "more than average needs." Even though the level of expressed need was low, the consumers appeared satisfied on average. However, given the prevalence of disabilities and generalized lack of services in the islands, it can be stated that there is a need for reevaluation of the operations of CILs on a period basis. Additionally, in order to better serve non-mainstreamed Americans, it is essential that their culture specific needs be identified with care and providers be trained to address these naturally occurring as seamlessly as possible.

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