# The Social Functioning of Persons With Chronic Mental Illness: an Empirical Typology of Consumers and Correlates of Social Functioning1

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# THE SOCIAL FUNCTIONING OF PERSONS WITH CHRONIC MENTAL ILLNESS: AN EMPIRICAL TYPOLOGY OF CONSUMERS AND CORRELATES OF SOCIAL FUNCTIONING[1]

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**ABSTRACT**

This study examined the typology of consumers and correlates of their social functioning using the Social Functioning Scale (SFS). Data were obtained from 244 outpatients of two psychiatric hospitals and psychiatric ward inpatients in two general hospitals through a structured in-person interview. The typology was generated using Cluster Analysis, and the profile of each group was further examined. The results indicated that there were four distinct groups of consumers. Multiple regression analysis revealed that consumers' sex, age, education, diagnosis, behavioral problems, family caregivers' age, employment status, and overall social support were significantly associated with consumers' social functioning. The implications for previous research findings and psychiatric rehabilitation service are discussed.

Key words: Social Functioning, Chronic Mental Illness, Caregiver Burden, Depressive Symptomatology

Estimates suggest between 90,000–130,000 persons with mental illness in Taiwan (Hwu, Yeh & Chang, 1989). Approximately 60,000 of these individuals are chronic mentally ill, which is about 0.3% of the total population (20.6 million) (Department of Health, 1992). Hospital and community rehabilitation resources have been limited for this population. For both acute and chronic psychiatric care, it is estimated that 20,600 hospital beds (10 beds per ten thousand people) are needed in Taiwan; however, up to December, 1997, we had total 15,316 beds, which is about 74% of the target goal (Department of Health, 1998). Thus, most mentally ill individuals (hereinafter referred to as consumers) have stayed in the community, with 86.3% living with their families (Cheng, 1985). Community rehabilitation facilities in Taiwan are particularly limited. In fiscal 1996, these facilities could serve only 1304 consumers (Department of Health, 1997).

Due to the lack of formal services, relatives of consumers have carried the major responsibilities of caregiving to their mentally ill member. One study documented that consumers experienced a range of problems while living in the community including interpersonal problems, marital and family problems, and problems related to hospitalization

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and treatment (Hwang, 1987). Caregivers of consumers also experience problems. A study by Song (1998) revealed that 45% of the caregivers in the study sample might be at risk of clinical depression, and caregiver burden is a significant correlate of such depression. To date, the knowledge we have concerning the status of consumers' community living in Taiwan remains limited since the only two Taiwanese studies (Hwang, 1987; Lee, Yeh, Liu, Liu & Chang, 1984) used samples from a single institution.

One important goal of psychiatric rehabilitation is for persons with mental illness to function well within a community setting. Consumers' quality of life and social functioning within the community have been emphasized in the literature and are preeminent factors in the planning and delivery of services (Mechanics, 1989; Tyrer & Merson, 1993; Goldman, Gattozzi & Taube, 1981).

Existent studies from the western countries have revealed that mentally ill persons are not homogeneous; but, could be classified into distinct groups based on social functioning and symptoms (Hannah, 1993), as well as other variables (e.g. demographic characteristics, clinical treatment history, community adjustment, etc.) (Braucht & Kirby, 1986). Studies on correlates of various measures of social functioning or social adjustment have also been conducted; however, the results were based on univariate tests and failed to cover a full range of potential correlates (Baker, Jodrey, Intagliata, Straus, 1993; Dozier & Franklin, 1988; Dworkin, 1990; Hannah, 1993; McGovern, Melon, Kilgore & Golden, 1993; Tyrer, 1993b).

Social functioning can be defined as "the level at which an individual functions in his or her social context, such function ranging from self-preservation and basic living skills to the relationship with others in society" (Tyrer, 1993a, p.8). Many sociocultural and intrapsychic factors can impact social functioning including symptoms, life circumstances, intellect, culture and coping (Tyrer, 1993; Tyrer, 1993b; World Health Organization, 1993).

Studies have demonstrated that female consumers have greater social functioning than male consumers (Casey, 1993; Baker *et al.*, 1993; Dworkin, 1990). Studies have also found positive correlations between social functioning and less symptoms, service use, social support and education of consumers; however, associations between social functioning and age and diagnosis have not been consistent (Dozier & Franklin, 1988; Baker *et al.*, 1993; Hanna, 1993; McGovern *et al.* 1993). Additionally, reliable relationships have not been demonstrated between social functioning and employment, marital status and number of previous hospitalizations (Hanna, 1993; Baker *et al.* 1993).

To address the gaps in the existent literature, the present study has the following aims: 1) to examine the scope of consumers' social functioning using a multidimensional social functioning scale, 2) to explore the classification typology of consumers based on social functioning, 3) to develop the profile of each group of consumers, and 4) to identify the important correlates of social functioning. To increase our understanding of consumers' social functioning, both consumer and family caregiver variables were examined since family caregiver's status may correlate with the available supports for consumers.

## METHODS

### Subjects

Subjects for this study were caregivers of mentally ill patients living in the community. They

provided proxy information for consumers as well as information about themselves. Criteria for sample selection were as follows: 1). Consumers must have been at least 18 years old and hospitalized at least once since the onset of illness; 2). Consumers with a diagnosis of neurosis, substance abuse, or Alzheimer's disease were excluded from the study. 3). Caregivers must have lived with their ill family member for at least six months over the past year. Caregivers were given a written agreement that explained the purpose and the overall content of data collection of this study. They were assured of confidentiality and the protection of their right to treatment if they refused to participate. Informed consent to participate in this study was received from all subjects. Due to the unavailability of computerized consumer records, random sampling was not feasible. As a result, data were derived from a convenience sample of 244 outpatients of two psychiatric hospitals and the psychiatric wards in two general hospitals in Central Taiwan. Consumers in these four study sites came from both city and rural areas.

*Variables and instruments*

The potential correlates were categorized as consumers' characteristics and family caregivers' characteristics. Consumer variables (demographic variables and illness variables) were selected based on the above literature review. Family caregiver variables that might affect ability of caregiving performance and in turn influence consumers' social functioning were chosen based on the literature, including caregivers' demographic variables and contextual variables, such as employment status, social support and health status, etc. Although caregiving outcomes (burden and depressive symptomatology) were not included as potential correlates, the differences among clusters on these two variables were tested when the profile of each cluster was examined to get a fuller understanding of caregivers' situations.

Due to the lack of good measurement instruments in Taiwan for the variables under study, scales from the U.S. and Great Britain were adapted. These scales were first translated into Chinese by one of the authors (LS), and verified by another person who had lived in the U.S. for more than ten years and with excellent English ability. The translated scales were given to experts for examining the appropriateness and wording of items. Pilot tests on ten subjects were conducted for further revisions and to ensure the reliability and validity of the instruments.

*Demographic Variables*. Consumer and family caregiver demographic variables included age (actual age), gender, education (less than high school, high school, college and above), and marital status (married, single, divorced, widowed, separated).

*Consumer Illness Variables*. Diagnostic classification (schizophrenia vs. other), length of illness (yr), number of hospitalizations since onset, use of rehabilitation service (yes, no), and behavioral problems were collected as illness variables. Consumer Behavioral Problems was tapped by a 37-item Client Behavioral Problems Scale (Biegel, Milligan, Putnam & Song, 1994; Biegel, Song & Chakravarthy, 1994). Caregivers were asked to rate the frequency of a wide range of possible client behaviors in the last month. Items were measured on a five-point scale, ranging from never (0) to often (4). This scale has good internal consistency in the previous studies (Alpha = 0.92–0.93). For this study, exploratory factor analyses were performed to examine the internal construct validity. Three items[1] were excluded due to low correlations with other items, MSA ranging from .52 to .57 (Stewart, 1987). The internal consistency (.86) of the entire 34 items was satisfactory.

*Consumers' Social Functioning*. The Social Functioning Scale (SFS) (Birchwood, Smith, Cochrane, Wetton & Copestake, 1990) classifies consumers based on their level of social functioning. The scale contains seven dimensions of social functioning: Withdrawal/Social Engagement (5 items, SOCIAL), Interpersonal Communication (4 items, COMM), Independence-Performance (13 items, IP), Recreation (15 items, REC), Prosocial (22 items, PROSOC), Independence-Competence (13 items, IC), Employment/Occupation (5 items, OCC). Taking into account the number of items, these subscales have acceptable internal consistency and inter-rater (between parents) reliability, the former ranging from 0.69 to 0.87, the latter from 0.62 to 0.99. The scale also has good discriminant validity; it can differentiate consumers from their siblings, as well as consumers from a community population. Higher scores indicate better social functioning.

This scale was reviewed by four psychiatric social workers and the authors for cultural appropriateness. The seven dimensions in SFS were all deemed appropriate to the socio-cultural expectations in Taiwan. Some modifications were made, though, on seven items of the Prosocial subscales to fit into the patterns of social activities in Taiwan. The common activities in social gathering among Taiwanese are: eating out, visiting relatives and friends, going to movies, and religious activities. Few would do the following things together: go to see exhibitions, go to parties or clubs, or play sports. These activities are more common among people in upper social class or young adults. The modifications included: 1) substituting item content with more culturally appropriate contents (e.g. church activities–religious activities), 2) adding examples in the parenthesis for better understanding. For the present study sample, the internal consistency for each subscale was as follows: Total scale (0.86), SOCIAL (.48)[2], COMM (.62), IP (.84), REC (.70), PROSOC (.88), IC (.88).

*Caregiver Contextual Variables*. This group of variables included employment status (yes, no), relationship to consumers (parent, spouse, other), other caregiving responsibility (yes, no), social support, caregiving support, and health status. Social support was measured by the scale used in the study by Biegel and his colleagues (Biegel, Milligan *et al.* 1994; Biegel, Song *et al.* 1994). The 16-Item scale tapped appraisal, belonging, financial, and emotional support, with response categories ranging from definitely true (0) to definitely false (3). This scale achieved good reliability (Alpha = 0.84) in the previous studies. For the present study, item 14 was excluded from the scale because too many respondents (32.4%) answered non-applicable; the factor analyses resulted in five first-order factors[3] and one second-order factor (social support). The internal consistency was 0.83. The higher the score, the more social support.

Respondents were asked about the support they received for their caregiver role from family, friends, neighbors, and agency. Caregivers rated the amount of help and support they received compared to their needs on a five-point scale, ranging from ''much less than needed'' (1) to ''much too much'' (5). The three caregiver health measures included self-rated health, health status compared with six month ago and to others with same age. The response category was a four-point scale (see Table 4).

*Caregiver Burden*. The overall Caregiver Burden Scale (Biegel, Milligan *et al.* 1994; Biegel, Song *et al.* 1994) was used to measure this variable. This 29-item scale taps four dimensions of burden – family disruption, client dependency, stigma, and caregiver strain. Subjects responded to each item on a five-point scale (Never (0) to Almost Always (4)). Acceptable reliability was reached for the scale in the previous studies (0.87). For the present

study, 25 items[4] were subjected to confirmatory factor analysis; item 1 was further deleted due to insignificant factor loading. Family disruption and family strain were found highly correlated with each other (.99) and therefore combined. The three-factor structure fit the data based on the goodness of fit indices (>.90). Further, the three dimensions had significant pair correlations (.41–.77). The internal consistency for the 24 items was 0.93.

*Caregiver Depression.* The Center for Epidemiologic Depressive Mood Scale (CES-D; Radloff, 1977) was utilized to measure this variable. This 20-item scale has been widely utilized in Taiwan. Subjects were asked to indicate on a four-point scale (0 to 3) the level of their experience on each item during the past week. CES-D has very good internal consistency (0.90) (Cocoran & Fischer, 1994). For the present study, the Alpha level (0.92) was also satisfactory.

### Data Analyses

*Cluster Formation.* Two steps of cluster analyses were performed. First, initial cluster analysis using Ward's method was conducted on a random sample of 123 cases (50%) drawn from the entire sample to derive the initial cluster solutions. The classification was based on the Euclidean distances between consumers on the amount of services used. Cluster centers (means for each type of service) were examined for each cluster solution alternative. Also, discriminant function analyses were performed to help decide the best solution according to the following considerations: 1) if there are significant differences among clusters on each dimension of SFS, 2) number of consumers in each cluster, 3) rate of accurate classification (hit ratio). The cluster solution that maximized differences among clusters was considered the best solution.

Second, the cluster solution derived from the previous stage was internally validated on the entire sample using K-means cluster analysis. In this procedure, a priori cluster solutions and cluster centers were specified. This procedure involved two separate K-means cluster analyses, constrained solution (not allowing updating the cluster centers) and unconstrained solution (allowing updating the cluster centers). The coefficient of agreement, Kappa, was computed for the constrained and unconstrained solutions. High Kappa value indicated high validity of cluster solution derived from the previous step.

*Profile of Cluster Membership.* Chi-Square tests were conducted to examine if there were significant correlations with cluster membership and categorical variables. For continuous measures, One-way ANOVA tests were performed to determine if the differences reached significance. Scheffe's procedure was used to detect significant group differences. The profile for each cluster was further yielded by examining the differences among clusters on the significant variables.

*Correlates of Social Function.* Significant variables resulting from the $\chi^2$ tests and ANOVA tests on the previous stage were included in the multiple regression analysis to further examine the important variables while other correlates were taken into account.

## RESULTS

### Consumer characteristics

This study collected data on 244 subjects, with almost equal percentages of male (49.2%) and

female consumers (see the ''Total'' column on Table 3). Mean age was 37.18 years, with a range of 17 to 79 years. Almost 50% of consumers did not graduate high school. About two-thirds (63.9%) were not married, including single, divorced, widowed, or separated. Almost all the consumers (95.5%) were living with their caregivers. The predominant diagnosis of the consumers was schizophrenia (72.9%), followed by manic depression (21.7%), other diagnosis (3.9%) and depression (1.4%). The average length of illness was 12.84 years (SD = 9.79), with a range of 1 to 61 years. About 75% of consumers had a mental illness for at least five years. In average, the consumers had been admitted to a psychiatric hospital/unit three times (SD = 3.37).

## Caregiver characteristics

In this study caregivers comprised of more males (58.8%) than females (see Table 4). Over three-fourth (76%) were married. A predominate percentage (66.9%) of the caregivers had educational levels less than high school. The mean age of the caregivers was 54.2 years with a range of 18 to 86 years. It is noteworthy that 26.5% of the caregivers were over 65 years. The descriptive information for other variables can be seen in the ''Total'' column on Table 3 and 4.

## Social functioning status

The mean overall social functioning score for this sample was 90.40 (SD = 27.69) (see Table 1). Compared with the potential maximum score, consumers had better functioning on Independence–Competence than on Independence–Performance (see Table 1). Such results implied that from the caregivers' point of view consumers are capable of doing things by themselves, but did not do as much as expected. Consumers had worse functioning on Recreation and Prosocial activities when comparing its mean raw score with the potential maximum score.

## Patterns of social functioning[5]

The first step of cluster analysis based on a half of the sample yielded three potential cluster solutions – five-cluster, four-cluster, and three-cluster. Further examination using discriminant function analyses revealed that the 4-cluster solution was the best one while considering number of consumers in each cluster and rate of accurate classification. The four clusters were – 1). High Independence-Performance (IP) & Socially Active (n = 15), 2). High Independence & Employment/Occupation (OCC) (n = 33), 3). Average Social Functioning

**Table 1**
**The distribution of consumers' social functioning scores (%)**

| SFS T Scores | 0–54 | 55–65 | 66–75 | 76–85 | 86–95 | 96–105 | 106–115 | 116–125 | 126–135 | 135+ |
|---|---|---|---|---|---|---|---|---|---|---|
| % | 8.6 | 11.1 | 10.2 | 13.5 | 14.8 | 15.6 | 10.2 | 4.9 | 5.0 | 6.1 |

| Scales | | Total | Social[a] | COMM[b] | IP[c] | REC[d] | Prosoc[e] | IC[f] | OCC[g] |
|---|---|---|---|---|---|---|---|---|---|
| Raw Scores | M | 90.40 | 9.30 | 5.47 | 18.89 | 11.88 | 8.46 | 31.26 | 5.15 |
| | (SD) | (27.69) | (2.88) | (2.17) | (8.23) | (5.66) | (7.71) | (6.42) | (3.64) |
| Potential Max. Score | | 223 | 15 | 9 | 39 | 45 | 66 | 39 | 10 |

Note: a: Social Engagement/Withdrawal Scale; b: Interpersonal Community; c: Independence–Performance; d: Recreation; e: Prosocial; f: Independence–Competence; g: Occupation/Employment

Score (SFS) (n = 48), and 4). Low SFS (n = 27). The initial cluster solution was further verified using K-Means cluster analysis on the entire sample. Both the constrained and unconstrained solutions indicated that the four-cluster solution fit the data. In addition, there was high consistency between constrained and unconstrained solutions (Kappa= 0.994). The hit ratio was 97.54% based on the four-cluster solution. The number and percentage of consumers in each cluster can be seen in Table 2. Scheffe's tests indicated that consumers in the ''High IP & Socially Active'' cluster had significant higher functioning in all subscales than the ''Average SFS'' cluster (see Table 2). This cluster basically functioned well in all aspects, especially on Independence-Performance, Recreation and Prosocial subscales. The second cluster, ''High Independence & OCC,'' had worse functioning than group 1 on four aspects, but not on COMM, IC, and OCC. On the other hand, consumers in this cluster had significantly higher scores than the ''Average SFS'' cluster on the IP, IC and OCC subscales. The ''Low SFS'' consumers had significant lower scores than the ''Average SFS'' cluster in almost every subscale, except OCC.

## Profiles of clusters

The four clusters reached significant differences on consumers' age, sex and education (see Table 3). Regarding illness variables, the four clusters were significantly different in diagnosis, length of illness, and behavioral problems. In terms of caregivers' characteristics, significant differences were found among the four clusters in age, education, percent of being employed, social support, overall health status, and health compared to others with same age (see Table 4). Significant differences were also found among the clusters on caregiver burden and depressive symptomatology (see Table 4). The results yielded a specific profile for each cluster. Below we present the two extreme groups (1 & 4) first, then compare the other two groups with group 4 on similarities and differences.

### *Group 1: High IP & Socially Active Cluster*

*Consumer Characteristics.* On average, this group was the youngest among the four clusters. There were more females (65.8%) than males in this cluster. The percentage of consumers with high school or above education was the highest among the four clusters. This group had the lowest percentage (47.1%) of consumers with schizophrenia compared to other clusters (all more than 75%). This cluster also had the shortest length of illness (M = 9.38 yrs), and least extent of behavioral problems among the four clusters.

*Caregiver Characteristics.* Caregivers in average were younger (M = 47.92) than other clusters. This cluster had the highest percentage of caregivers with high school or above education. Only about a quarter of the caregivers were employed (28.9%). Caregiver's level of overall social support was the highest among all the clusters. The percentage (19.4%) of perceived poor health was the smallest compared to other clusters. Caregivers had the lowest level of burden and depressive symptomatology, and significantly lower than caregivers in the ''Low SFS'' cluster.

### *Group 4: Low SFS Cluster*

*Consumer Characteristics.* This cluster was composed of almost equal percentages of males and females. The percentage of consumers with education lower than high school was the highest (60.7%). About 80% of consumers had a diagnosis of schizophrenia, which was

**Table 2**
**Social functioning status by clusters**

| Clusters Mean SFS Scores (SD) | Group 1 High IP & Socially Active (n = 38) (15.6%) | Group 2 High Independence & OCC. Ability (n = 62) (25.4%) | Group 3 Average SFS (n = 88) (36.1%) | Group 4 Low SFS (n = 56) (22.9%) | Total (N = 244) | Post-hoc Comparison |
|---|---|---|---|---|---|---|
| Mean SFS T score | 116.17 (6.03) | 105.08 (4.90) | 98.28 (4.87) | 86.11 (5.84) | 100 (15.0) | 4 < 3,2,1<br>3 < 2,1 |
| 95% CI (T score) | 114.19–118.15 | 103.84–106.32 | 97.25–99.31 | 84.54–87.67 | 98.61–101.39 | 2 < 1 |
| Social[a] T score | 111.92 (10.69) | 104.35 (11.97) | 99.05 (13.29) | 88.58 (15.01) | 100 (15.0) | 4 < 3,2,1<br>3 < 1<br>2 < 1 |
| Comm[b] T score | 111.52 (12.06) | 105.48 (12.08) | 99.99 (11.97) | 86.13 (13.65) | 100 (15.0) | 4 < 3,2,1<br>3 < 1 |
| IP[c] T score | 118.31 (9.70) | 111.82 (7.25) | 94.80 (6.17) | 82.67 (8.59) | 100 (15.0) | 4 < 3,2,1<br>3 < 2,1<br>2 < 1 |
| REC[d] T score | 123.20 (11.17) | 98.63 (10.93) | 99.57 (9.44) | 86.45 (8.67) | 100 (15.0) | 4 < 3,2,1<br>3 < 1<br>2 < 1 |
| PROSOC[e] T score | 124.86 (15.27) | 95.54 (7.88) | 98.41 (10.03) | 90.55 (8.06) | 100 (15.0) | 4 < 3,1<br>3 < 1<br>2 < 1 |
| Ic[f] T score | 111.50 (8.43) | 109.30 (6.92) | 101.67 (7.80) | 79.27 (10.51) | 100 (15.0) | 4 < 3,2,1<br>3 < 2,1 |
| OCC[g] T score | 111.88 (9.85) | 110.35 (10.13) | 94.47 (13.19) | 89.08 (12.21) | 100 (15.0) | 4 < 2,1<br>3 < 2,1 |

Note: a: Social Engagement/Withdrawal Scale; b: Interpersonal Community; c: Independence–Performance; d: Recreation; e: Prosocial; f: Independence–Competence; g: Occupation/Employment

the highest among the clusters. These consumers had the longest length of illness (M = 14.71%), and the highest level of behavioral problems (M = 51.53).

*Caregiver Characteristics.* In average, caregivers were older (M = 56.71 yrs) than other clusters. Almost three quarters of the caregivers had education lower than high school, which was the highest compared to other clusters. About two-third (60.7%) of the caregivers in this cluster were employed. This figure was about two times higher than the other clusters. Caregivers had the lowest level of overall social support among the clusters. About 45% of the caregivers rated ''poor'' on their health. Also, 57.7% rated their health as ''worse'' or ''much worse'' compared to other people with same age. Caregivers had significantly higher burden than the other clusters. They also had significant higher levels of depressive symptomatology than caregivers in the ''High IP & Socially Active'' or ''High Independence & OCC'' cluster.

*Group 3: Average SFS Cluster*

*Consumer Characteristics.* The profile for this cluster was similar to the ''Low SFS'' cluster. However, different from the ''Low SFS'' cluster, this cluster had more males (67.0%) than females; a smaller percentage (47.1) of consumers had education lower than high school; consumers had shorter length of illness and less behavioral problems.

**Table 3**
**Statistic tests for consumer characteristics by cluster membership**

| Variables | Group 1 High IP & Socially Active (n = 38) | Group 2 High Independence & Occ. Ability (n = 62) | Group 3 Average SFS (n = 88) | Group 4 Low SFS (n = 56) | Total (N = 244) | Post-hoc comparison $\chi^2$ test (p value) |
|---|---|---|---|---|---|---|
| A. Demographic Variables | | | | | | |
| Consumer Age | 32.79 (7.18) | 41.05 (10.30) | 35.31 (11.19) | 38.77 (13.50) | 37.18 (11.37) | 1 < 2<br>3 < 2<br>(.0008) |
| Sex | | | | | | |
| Male | 13 (34.2) | 19 (30.6) | 59 (67.0) | 29 (51.8) | 120 (49.2) | 23.32<br>(.00003) |
| Female | 25 (65.8) | 43 (69.4) | 29 (33.0) | 27 (48.2) | 124 (50.8) | |
| Edu Less than | | | | | | |
| High | 8 (21.1) | 37 (59.7) | 41 (47.1) | 34 (60.7) | 120 (49.4) | 24.15<br>(.00049) |
| High School | 18 (47.4) | 19 (30.6) | 35 (40.2) | 19 (33.9) | 91 (37.4) | |
| College | 12 (31.6) | 6 (9.7) | 11 (12.6) | 3 (5.4) | 32 (13.2) | |
| Married | | | | | | |
| No | 23 (60.5) | 33 (53.2) | 62 (70.5) | 38 (67.9) | 156 (63.9) | 5.27<br>(.15300) |
| Yes | 15 (39.5) | 29 (46.8) | 26 (29.5) | 18 (32.1) | 88 (36.1) | |
| B. Illness Variables | | | | | | |
| Schizophrenia | | | | | | |
| No | 18 (52.9) | 13 (25.0) | 16 (21.3) | 9 (19.6) | 56 (27.1) | 14.21<br>(.00264) |
| Yes | 16 (47.1) | 39 (75.0) | 59 (78.7) | 37 (80.4) | 151 (72.9) | |
| Length of Illness (yr) | 9.38 (6.69) | 14.46 (9.95) | 11.99 (9.27) | 14.71 (11.45) | 12.84 (9.79) | (.0289) |
| N. of Hospitalization | 2.50 (1.66) | 3.64 (3.49) | 2.94 (3.34) | 3.15 (4.11) | 3.11 (3.37) | (.4664) |
| Behavioral Problems | 23.48 (23.14) | 25.60 (22.39) | 33.51 (23.47) | 51.53 (25.47) | 34.07 (25.63) | 1 < 4<br>2 < 4<br>3 < 4<br>(.0000) |
| Use of Rehab | | | | | | |
| No | 29 (76.3) | 42 (67.7) | 66 (75.0) | 41 (73.2) | 178 (73.0) | 1.26<br>(.73870) |
| Yes | 9 (23.7) | 20 (32.3) | 22 (25.0) | 15 (26.8) | 66 (27.0) | |

*Caregiver Characteristics*. Compared to the ''Low SFS'' cluster, this cluster had higher percentage of caregivers with college or higher level of education (15% vs. 7.4%). Unlike the ''Low SFS'' cluster, almost two-third of the caregivers were unemployed. Caregiver's health status was better. Caregivers' burden was significantly lower than the ''Low SFS'' cluster.

*Group 2: High Independence & OCC Cluster*

*Consumer Characteristics*. Consumers in this cluster were similar to the ''Low SFS''

**Table 4**
**Statistical tests for caregiver characteristics by cluster membership**

| Variables | Group 1 High IP & Socially Active (n = 38) | Group 2 High Independence & Occ. Ability (n = 62) | Group 3 Average SFS (n = 88) | Group 4 Low SFS (n = 56) | Total (N = 244) | Post-hoc comparison $\chi^2$ test (p value) |
|---|---|---|---|---|---|---|
| A. Demographic Variables | | | | | | |
| Age | 47.92 (14.96) | 54.68 (14.26) | 54.84 (15.67) | 56.71 (14.00) | 54.17 (15.00) | 1 < 4 (0.0395) |
| Sex Male | 24 (64.9) | 43 (69.4) | 48 (54.5) | 28 (50.0) | 143 (58.8) | 5.86 (.11850) |
| Female | 13 (35.1) | 19 (30.6) | 40 (45.5) | 28 (50.0) | 100 (41.2) | |
| Edu Less than High | 17 (44.7) | 42 (67.7) | 63 (71.6) | 40 (74.1) | 162 (66.9) | 13.71 (.03309) |
| High School | 13 (34.2) | 10 (16.1) | 11 (12.5) | 10 (18.5) | 44 (18.2) | |
| College | 8 (21.1) | 10 (16.1) | 14 (15.9) | 4 (7.4) | 36 (14.9) | |
| Married No | 8 (21.6) | 16 (25.8) | 22 (25.3) | 12 (21.4) | 58 (24.0) | 0.51 (.91712) |
| Yes | 29 (78.4) | 46 (74.2) | 65 (74.7) | 44 (78.6) | 184 (76.0) | |
| B. Contextual Variables | | | | | | |
| Employed No | 27 (71.1) | 38 (61.3) | 53 (60.2) | 22 (39.3) | 140 (57.4) | 11.08 (.01130) |
| Yes | 11 (28.9) | 24 (38.7) | 35 (39.8) | 34 (60.7) | 104 (42.6) | |
| Relation Parent | 18 (48.6) | 24 (38.7) | 53 (60.2) | 32 (57.1) | 127 (52.3) | 10.63 (.10035) |
| Spouse | 10 (27.0) | 24 (38.7) | 18 (20.5) | 10 (17.9) | 62 (25.5) | |
| Other | 9 (24.3) | 14 (22.6) | 17 (19.3) | 14 (25.0) | 54 (22.2) | |
| Length of Caregiving | 7.28 (6.22) | 11.09 (7.90) | 9.81 (8.19) | 10.82 (7.34) | 9.97 (7.70) | (.0899) |
| Other Care Resp. | | | | | | |
| Yes | 34 (89.5) | 46 (74.2) | 65 (73.9) | 40 (71.4) | 185 (75.8) | 4.73 (.19298) |
| No | 4 (10.5) | 16 (25.8) | 23 (26.1) | 16 (28.6) | 59 (24.2) | |
| Care Supp – Family | | | | | | |
| Much less | 4 (10.8) | 10 (17.5) | 19 (22.1) | 14 (25.0) | 47 (19.9) | 16.37 (.05947) |
| Less | 6 (16.2) | 19 (33.3) | 19 (22.1) | 18 (32.1) | 62 (26.3) | |
| Enough | 19 (51.4) | 24 (42.1) | 43 (50.0) | 19 (33.9) | 105 (44.5) | |
| More | 8 (21.6) | 8 (7.0) | 5 (5.8) | 5 (8.9) | 22 (9.3) | |
| Care Supp – Friend | | | | | | |
| Much less | 12 (34.3) | 15 (25.4) | 27 (31.8) | 22 (40.0) | 76 (32.5) | 7.35 (.60023) |
| Less | 14 (40.0) | 29 (49.2) | 31 (36.5) | 18 (32.7) | 92 (39.3) | |
| Enough | 6 (17.1) | 13 (22.0) | 24 (28.2) | 13 (23.6) | 56 (23.9) | |
| More | 3 (8.6) | 2 (3.4) | 3 (3.5) | 2 (3.6) | 10 (4.3) | |
| Care Supp – Neighbour | | | | | | |
| Much less | 15 (42.9) | 16 (27.6) | 31 (36.9) | 24 (43.6) | 86 (37.1) | 10.52 (.31018) |
| Less | 14 (40.0) | 33 (56.9) | 32 (38.1) | 19 (34.5) | 98 (42.2) | |
| Enough | 6 (17.5) | 9 (15.5) | 18 (21.4) | 10 (18.2) | 43 (18.5) | |
| More | 0 | 0 | 3 (3.6) | 2 (3.6) | 5 (2.2) | |

**Table 4**
**(Cont)**

| Variables | Group 1 High IP & Socially Active (n = 38) | Group 2 High Independence & Occ. Ability (n = 62) | Group 3 Average SFS (n = 88) | Group 4 Low SFS (n = 56) | Total (N = 244) | Post-hoc comparison $\chi^2$ test (p value) |
|---|---|---|---|---|---|---|
| Care Supp – Agency | | | | | | |
| Much less | 3 (7.9) | 5 (8.2) | 4 (4.5) | 6 (10.7) | 18 (7.4) | 13.73 (.13209) |
| Less | 3 (7.9) | 8 (13.1) | 18 (20.5) | 8 (14.3) | 37 (15.2) | |
| Enough | 26 (68.4) | 39 (63.9) | 50 (56.8) | 24 (42.9) | 139 (57.2) | |
| More | 6 (15.8) | 9 (14.8) | 16 (18.2) | 18 (32.1) | 49 (20.2) | |
| Social Support | 13.54 (3.25) | 11.85 (3.65) | 12.30 (3.74) | 11.15 (4.03) | 12.13 (3.80) | 4 < 1 (0.0311) |
| Health – Overall | 11 (30.6) | 5 (8.2) | 7 (8.0) | 1 (1.8) | 24 (10.0) | 29.53 (.00053) |
| Very Good | | | | | | |
| Good | 5 (13.9) | 8 (13.1) | 20 (22.7) | 6 (10.7) | 39 (16.2) | |
| Fair | 13 (36.1) | 30 (49.2) | 35 (39.8) | 24 (42.9) | 102 (42.3) | |
| Poor | 7 (19.4) | 18 (29.5) | 26 (29.5) | 25 (44.6) | 76 (31.5) | |
| Health – Compared to 6 months ago | | | | | | |
| Much worse | 2 (5.4) | 3 (4.8) | 6 (6.9) | 8 (14.5) | 19 (7.9) | 12.68 (.17707) |
| Worse | 10 (27.0) | 20 (32.3) | 32 (36.8) | 25 (45.5) | 87 (36.1) | |
| Same | 22 (59.5) | 33 (53.2) | 45 (51.7) | 21 (38.2) | 121 (50.2) | |
| Better | 3 (8.1) | 6 (9.7) | 4 (4.6) | 1 (1.8) | 14 (5.8) | |
| Health – Compared to others | | | | | | |
| Much worse | 3 (8.1) | 1 (1.8) | 7 (8.4) | 7 (13.5) | 18 (7.9) | 26.02 (.00203) |
| Worse | 10 (27.0) | 17 (30.4) | 16 (19.3) | 23 (44.2) | 66 (28.9) | |
| Same | 11 (29.7) | 27 (48.2) | 46 (55.4) | 18 (34.6) | 102 (44.7) | |
| Better | 13 (35.1) | 11 (19.6) | 14 (16.9) | 4 (7.7) | 42 (18.4) | |
| C. Caregiving Outcome Variables | | | | | | |
| Burden | 31.90 (20.65) | 38.78 (10.04) | 39.42 (17.44) | 49.72 (18.59) | 40.46 (19.34) | 1 < 4<br>2 < 4<br>3 < 4<br>(.0001) |
| Depression | 13.95 (13.32) | 14.82 (11.40) | 16.83 (11.15) | 22.12 (12.80) | 17.08 (12.24) | 1 < 4<br>2 < 4<br>(.0024) |

cluster in education and length of illness. However, this cluster was distinct in the following measures: 1). In average, consumers were the oldest among the clusters. The ratio of females to males was over 2:1. 2). Consumer's behavioral problems were significantly lower than the ''Low SFS'' cluster.

*Caregiver Characteristics.* This cluster and the ''Low SFS'' cluster were similar in caregivers' age and overall social support. However, caregivers in this cluster had a higher percentage of college or higher level of education than the ''Low SFS'' cluster. Almost two-third of the caregivers were unemployed. Caregivers' burden and depressive symptomatology were significantly lower than the ''Low SFS'' cluster.

## Correlates of social functioning

The twelve variables that achieved significance in the previous analyses were employed in a multiple regression analysis. The variable "health compared to others with same age" was not included in the analysis to avoid multicollinearity with another variable "overall health". Two dummy variables, Highsch and College, were created for the education variable.

Results indicated that the variables in the equation were significantly correlated with consumers' social functioning. These 11 variables explained 40% of variance in the overall social functioning scores ($F = 10.07$, $P < .001$) (see Table 5). Three variables were not significantly associated with the dependent variable while other variables were taken into account: Length of illness, caregivers' education, and overall health ($P > .05$). Based on the part correlations, Consumers' Behavioral Problems was the most important correlate, followed by caregivers' employment status, consumers' level of education, diagnosis, sex, age, caregivers' social support and age. Female and younger consumers had higher level of social functioning. Consumers with high school or college level of education had higher social functioning than consumers with education lower than high school. Consumers with a diagnosis of schizophrenia had lower social functioning. The more behavioral problems, the lower the social functioning scores. Caregivers' employment negatively correlated with

**Table 5**
**Multiple regression analysis for overall social functioning (N = 189)**

| Variables | B[a] | Beta[b] | Part Corr. | T Value | P Value |
|---|---|---|---|---|---|
| Consumer Characterists | | | | | |
| A. Demographic Variables | | | | | |
| Sex (1 = Male, 2 = Female) | 3.06 | .14 | .14 | 2.45 | .0153 |
| Age | −.15 | −.16 | −.12 | −2.07 | .0404 |
| Education | | | | | |
| Highsch (1) | 3.52 | .16 | .14 | 2.55 | .0115 |
| College (1) | 7.17 | .23 | .19 | 3.29 | .0012 |
| B. Illness Variables | | | | | |
| Schizophrenia (0 = No, 1 = Yes) | −3.54 | −.15 | −.14 | −2.48 | .0141 |
| Length of Illness | .13 | .12 | .09 | 1.58 | .1156 |
| Behavioral Problems | −.19 | −.41 | −.38 | −6.72 | .0000 |
| Caregiver Characteristics | | | | | |
| A. Demographic Variable | | | | | |
| Age | −.10 | −.13 | −.11 | −2.01 | .0461 |
| Education | | | | | |
| Highsch (1) | 1.16 | .04 | .04 | .66 | .5119 |
| College (1) | −1.11 | −.04 | −.03 | −.57 | .5672 |
| B. Contextual Variables | | | | | |
| Employed (0 = No, 1 = Yes) | −5.37 | −.24 | −.22 | −3.89 | .0001 |
| Social Support | .17 | .13 | .11 | 1.98 | .0491 |
| Health | | | | | |
| Good (1) | −2.10 | −.09 | −.06 | −1.11 | .2702 |
| Fair (1) | −.95 | −.04 | −.04 | −.62 | .5338 |
| Adjusted $R^2 = 40.3\%$; $F = 10.07$ (14, 174); $P = .0000$ | | | | | |

Note: a: Unstandardized Regression Coefficient; b: Standardized Regression Coefficient.

consumers' social functioning. Caregivers' overall social support had a positive correlation with consumers' status of social functioning.

## DISCUSSION

In other studies, caregivers of persons with mental illness usually are predominantly females (female to male= 6:4); while in this study caregivers comprised of more males (58.8%). An examination of the characteristics separately for male and female caregivers revealed that male caregivers had significantly higher tendency of being unemployed (69.2%), married (81.7%), the spouse of a consumer (31.5%) and having a higher educational level (39.4% high school and above) than females (41%, 68.0%, 17.0%, and 24.2%, respectively). Although there is no direct proof, the combination of these characteristics, especially being unemployed and a spouse, might explain the higher percentage of male caregivers in the sample given the fact that the samples were contacted during outpatient visits. However, this study was based on an availability sample, thus no generalization will be made relating to the general caregivers. Most studies on this topic share the same drawback as this study, which makes comparisons difficult in Taiwan.

The average overall social functioning of the consumers was 90.4, which is low compared with the potential range of scores (0–223). Female consumers had better overall functioning than males, which confirms the previous findings of Dworkin (1990), Casey (1993), Baker *et al.* (1993), but is different from Hannah (1993). Given such tendency, however, there was almost equal representation of males and females in the "Low SFS" cluster. While some previous studies found no significant relationship between consumers' age and social functioning (Baker *et al.* 1993; Dozier & Franklin, 1988; Hannah, 1990), the present study found that younger consumers had better social functioning. Nevertheless, the consumers in the "High Independence & OCC" cluster were much older than two of the other clusters, which indicated that some older consumers could function well on independence and occupation, especially females with less behavioral problems. In addition, Casey's review (1993) suggested that social functioning improves with increased age. Thus, when the correlation between age and social functioning is examined, the direction of the correlation might depend on the particular dimension of social functioning addressed.

Consumers with education lower than high school were worse in social functioning, a finding consistent with Hannah's study (1990). In the present study, the consumers with a diagnosis of schizophrenia had worse social functioning than their counterparts. This tendency is further demonstrated by the over-representation (80.4%) of consumers with schizophrenia in the "Low SFS" cluster. However, Hannah (1993) and Baker *et al.* (1993) found no significant correlation between diagnosis and social functioning. Such discrepancy in findings could be due to a lack of reliability across and within studies or sampling differences. The analyses also support the importance of behavioral problems in correlation with social functioning as documented in the literature.

Consistent with previous findings, consumers' marital status and previous number of hospitalizations were not significantly correlated with social functioning. Hospitalization was not dependent on patients' functioning, but could be due to lack of housing or social support and dependent on the availability of hospital beds. Previous research has found a positive

correlation between service use and social functioning (Baker *et al.* 1993; Hannah, 1993); however, we found no association between use of rehabilitation services and social functioning. Since the purpose of rehabilitation services is to maintain and increase the social functioning of consumers who are stable in symptoms, the possible explanations for such finding are: 1) The service itself was not effective; 2) the consumers who were stable enough to use the rehabilitation services might not have had the chance to use it due to low availability and accessibility of these services.

To better understand the correlates of consumers' social functioning, the present study also included caregiver characteristics and found that older age, being employed and insufficient social support each had a negative correlation with consumers' social functioning. For caregivers with such characteristics, their needs for community services, e.g. day care, respite care etc., need to be carefully assessed. Due to limited resources, to date only few professional services are available for caregivers. The usual short-term educational program cannot meet all the needs of caregivers in Taiwan. To continue their caregiving responsibilities, caregivers need both professional and informal support, especially for those who are older and unemployed. More resources and efforts need to be allocated to this population.

**Implications for psychiatric rehabilitation service**

The cluster analyses revealed four distinct groups of consumers based on the seven subdimensions of social functioning. This finding indicates the heterogeneous nature of consumers. Service design ought to be tailored based on the assessment of consumers' strength and weakness, and social functioning is a critical area of assessment. There are consumers with relatively higher potential of being successful in community living, such as the ''High IP & Socially Active'' (15.6%) or the ''High Independence & OCC Ability'' groups (25.4%). Rehabilitation services might be helpful to maintain or increase their work ability and social participation. Vocational training and job replacement services could also be emphasized for these consumers. The effectiveness of Vocational rehabilitation services has been demonstrated in the United States (Bond, Dincin, Setze & Witheridge, 1984; Russert & Frey, 1991).

Although the ''Average SFS'' group of consumers did not have good social functioning, they may still maintain community living based on their caregivers' situation. The profile of the ''Low SFS'' group (23%) revealed that they were the consumers with the highest need for services to prevent hospitalization and institutionalization. It is important to identify such consumers and caregivers as well as to assess caregivers' level of social support, burden and depression. Professionals should work more intensively with caregivers of this group to help them manage their ill member's behavioral problems. As revealed in this study, ''consumers behavioral problems'' was the most important correlate of social functioning; and the literature also documented its influence on caregiver burden and depression (Biegel, Milligan *et al.* 1994; Biegel, Song *et al.* 1994). A battery of behavioral problem management skills needs to be developed in psychoeducational programs to help caregivers. Caregivers' burden and depressive symptomatology should be given immediate attention through professional help and informal support (e.g. support groups).

Given very limited psychiatric rehabilitation facilities in Taiwan, individuals with chronic mental illness pose great challenges for their family members. Taiwan needs more psychiatric rehabilitation facilities to help these families, but such endeavors have faced tremendous

obstacles. A major obstacle is community stigma toward consumers. The general population still considers psychiatric patients dangerous and harmful; therefore, the establishment of any psychiatric service facility would encounter objections and protests in nearby neighborhoods. Additionally, insurance coverage and payment for community psychiatric services is not comparable to inpatient services; therefore, community-based facilities cannot provide enough incentive for potential service providers. Long-term commitment among professionals to educate the general public and to advocate for changing the payment design of Taiwan's National Health Insurance Bureau for psychiatric services is necessary.

### Strengths and limitations

This study used a sample of matched caregivers and consumers from both rural and urban settings; however, the sample was not random and therefore the findings may not be representative of all Taiwanese caregivers and consumers. Nevertheless, the findings provide meaningful information about a substantial number of consumers of outpatient mental health services in Taiwan. During the in-person interview with caregivers, consumers were present, potentially influencing caregivers' responses. It is also important to note that the findings of this study are correlational and not causal.

A major contribution of this study was the adaptation of instrumentation previously used in other countries to the Taiwanese setting. Careful translation, piloting and statistical testing established the efficacy of this instrumentation, thus facilitating other similar studies in Taiwan, and advancing cross-cultural comparisons of social functioning and consumer typologies.

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[1] The three items are: item 21 (self-destructive behavior), item 22 (suicidal behavior), and item 25 (use of alcohol or drugs). The low correlation might be partly due to restricted variability; over 90% of respondents had never experienced these three problems.

[2] The reliability for the SOCIAL subscale seemed low, however it was due to small number of items (5). Based on Nunnally's formula (1978), to each .80 on Chronbach's Alpha it needs to increase the number of items for 4.3 times on this subscale.

[3] Item 14: Someone would lend me their car for a few hours. The five first-order factors: self-esteem, crisis support, belonging and information support, instrumental support, and emotional support.

[4] Item 3 & 9 were not included since they measure positive effects of caregiving on caregivers. Item 23 & 24 were not included based on factor analysis in the previous studies (Biegel *et al.* 1994).

[5] The results on the "patterns of social functioning" and "Profiles of Clusters" have been used in another paper "Community Care for Persons with Chronic Mental Illness – A Choice or A Dilemma?" published by the Chinese Journal of Mental Health, Taiwan.