

## **A Longitudinal Study of Mental Health Services and Consumer Outcomes in a Changing System: Time 5 Results**

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The Longitudinal Study of Mental Health Services and Consumer Outcomes in a Changing System (LCO) is a continuation and expansion of the Services in Systems (SIS) study, which was implemented to examine the effects of the Mental Health Act of 1988 (Roth, Lauber et al., 1996). This longitudinal study includes two parts. The first part focuses on the effects of system changes on the yearly service patterns of individuals with severe mental illness (SMD). The second part focuses on consumers' individual experiences within the mental health system and includes five waves of measurement (1991, 1992, 1993, 1995, 1997/8). The current report is based on results of the most recent wave of measurement and will include a description of changes over time in the longitudinal data. (For more information about previous waves of measurement, see Roth, Crane-Ross, Hannon, Cusick, & Doklovic, 1998; Roth, Lauber et al., 1996; Roth, Crane-Ross et al., 1996).

### **System Focus: Patterns of Community Services Over Nine Years**

A major component of both the SIS and the LCO research has been the examination of changes in patterns of services being received by consumers in Ohio's community mental health system. It was predicted that the Mental Health Act of 1988 would, because of increased funding to community mental health centers, affect community services such that larger amounts of service and more diverse patterns of services would be observed over time.

In order to examine service patterns, a random sample of community service records of 508 certified adults was drawn from the Department's Mental Health Information System (MHIS) database in each year following the Mental Health Act. Each sample included approximately 10 percent of Ohio's open records for adult consumers with SMD. K-Means Cluster Analysis was used to identify patterns of services that consumers were receiving (Roth, Lauber, Crane-Ross, & Clark, 1997). The cluster analyses revealed a similar configuration of service patterns in every year; however, significant changes were

observed in the size and composition of each cluster over time (see Table 1).

Table 1. Percentages of Adults with SMD in Service Clusters by Year.

Fiscal Year	1989	1990	1991	1992	1993	1994	1995	1996	1997
<u>N</u>	4226	4292	4278	4279	4335	4463	4544	4766	4781
Few Services Cluster	47.7	47.8	52.8	53.1	46.0	46.7	47.0	54.8	53.9
Medical Clusters	22.9	22.9	12.9	9.9	9.5	12.9	17.0	10.2	11.1
Other Clusters	19.8	20.0	24.3	27.1	33.3	31.3	27.5	28.5	26.4
Custom Care Group	9.6	9.2	10.1	9.9	11.1	9.2	8.5	6.5	8.6

Note. Table values for each year represent the percentage of the sample in each cluster type. “Other Clusters” included single and multiple service clusters.

The largest cluster identified in every year, the “Few Services Cluster,” was composed of persons receiving very few services of any kind--an average of 13 units per year, compared to 70 units for the overall sample. (For this analysis, a unit was considered one day of any day-measured service, one hour of any hour-measured service, or 15 minutes of Medical/Somatic.) The results revealed, that despite the changes produced by the Mental Health Act, the size of the “Few Services Cluster” has been increasing in the past two years. However, the amount of service received by members of this cluster also increased from approximately eight units in 1989 to 13 units in 1997. Another grouping, the “Custom Care Group”, included approximately 10 percent or less of the population in each year. This category was composed of many small clusters of individuals receiving large amounts of highly individualized services. The proportion of individuals in this cluster did not change substantially over time.

A third type of cluster identified in each year, the “Medical Cluster”, included individuals who received monthly medication check-ups and little else. The proportion of individuals in this cluster dropped significantly following the Mental Health Act, increased in 1995, then dropped back to a relatively low level in 1996 and 1997. There was also an increase in the diversity of services received by

individuals in this cluster over time, indicating that consumers were receiving medical service in combination with some other services, rather than medical service alone. Thus, service providers seemed to be moving away from medication management alone as a service modality.

Corresponding to the decrease in the “Medical Cluster,” there was an increase in a set of moderately-sized clusters designated as the “Other Clusters.” This category included individuals receiving greater than average amounts of one or more services. The proportions of individuals in this category increased following the Mental Health Act and remained at a relatively high level. The composition of the clusters that characterized this grouping also changed. In 1989, four out of the five clusters in this grouping were characterized by one single service (e.g., case management or day service). In 1997, six of the eight clusters in this category were characterized by multiple services. Thus, this category of clusters increased in both size and diversity.

Overall, changes in service patterns suggest that the greatest impact of the Mental Health Act of 1988 occurred between 1989 and 1993. During that time, service patterns appeared to become more complex and individualized. Since 1993, there have been few significant changes, and in 1996 and 1997 there was a downward shift -- a drop in the proportion of people in the most intense and diverse clusters (the “Other Clusters and the Custom Care Group”) -- and an increase in the proportion of people in the “Few Services Cluster”. This erosion in service delivery patterns is of concern, given the high levels of need of individuals with SMD, as well as the increasing financial resources provided to local community mental health systems during this period of time.

### **Individual Consumer Focus: Results of Survey Research**

Consumers’ individual experiences within the mental health system were examined through consumer interviews and case manager surveys. The original sample at Time 1 (1991) included 457 consumers. At Time 5 (1997/8), the sample included 369 consumers, 268 consumers from the original cohort who were interviewed in all years of the study, and a new cohort of 101 consumers who were

newly 508 certified in 1996 and interviewed for the first time in 1997/8. At each time point, trained field interviewers administered a one-and-one-half hour scripted survey asking consumers about their needs, services, symptoms, and quality of life. Consumers were also asked about their daily activities, interpersonal relationships, and experiences living in the community, including their housing, employment, and income. The case managers of these consumers responded to self-administered surveys requesting information about consumers' medications, diagnoses, symptomatology, functioning, and needs.

Over the course of the SIS/LCO study, the consumer and case manager survey instruments have undergone many changes in response to new findings and feedback from various constituent groups about issues important to consumers. In 1995, questions were added to obtain more information about medication, service empowerment, and relationships, particularly relationships between consumers and case managers. In 1997/8, the new cohort of consumers was added to examine the needs and characteristics of individuals who were relatively new to the mental health system. In addition, questions were added to address issues pertaining to private mental health insurance, criminal justice system involvement, and recovery.

**Service Empowerment:**

Results of the SIS study suggested that issues related to service empowerment had considerable influence on consumers' outcomes (Roth, Lauber et al., 1996). Therefore, additional questions related to service empowerment were included in the Time 4 and Time 5 data collection instruments. LCO respondents were asked about their involvement and control in decisions about their services, treatments, and medications. Consumer ratings of their degree of service empowerment have, for the most part, remained unchanged over time. Overall, less than half of the LCO participants indicated that they were "quite a bit" or "completely" involved in decision-making regarding their medications or treatment and only slightly more than one half reported this level of involvement in developing their treatment plan (see

Table 2). In contrast, the vast majority of the LCO consumers indicated that it was “quite a bit” or “extremely” important to have control or be involved in decisions regarding their services and treatment. Thus, many consumers wished to be more involved than they were in service-related decisions. (See Roth, Crane-Ross, Hannon, & Carstens, 2000a for more information on consumers’ perceptions of their service empowerment.)

Table 2. Consumer Ratings of Their Service Empowerment.

	old cohort	new cohort	both cohorts
Amount of say in services <sup>a</sup>	80 (37.4%)	54 (56.8%)	134 (43.4%)
Importance of having a say in services <sup>b</sup>	158 (72.8%)	81 (86.2%)	239 (76.8%)
Control over types of treatment or services <sup>c</sup>	91 (42.1%)	54 (58.1%)	145 (46.9%)
Involvement in treatment plan <sup>c</sup>	103 (51.5%)	60 (67.4%)	163 (56.4%)
Treatment plan fits with what you want <sup>c</sup>	110 (58.8%)	63 (68.5%)	173 (62.0%)
Involvement in resolving crises <sup>c</sup>	110 (56.4%)	60 (65.2%)	170 (59.2%)
Involvement in medication decisions <sup>c</sup>	84 (37.7%)	51 (54.3%)	135 (42.6%)
Importance of being involved in medication decisions <sup>b</sup>	157 (70.7%)	82 (88.2%)	239 (75.9%)

Note. Percentages calculated based on the number of valid responses.

<sup>a</sup> Number (and percentage) of consumers reporting “a lot of say.”

<sup>b</sup> Number (and percentage) of consumers reporting that involvement or say is “quite a bit” or “extremely” important.

<sup>c</sup> Number (and percentage) of consumer reporting reported “quite a bit” or “complete” control, involvement, or fit.

**Consumers’ Needs:**

Each measurement point of the SIS/LCO study included an assessment of consumers' needs. Consumers and their case managers rated the amount of help needed and the amount of help received in 18 separate areas related to community support, mental health care, and daily living skills. Ratings ranged from 0 (no help needed/received) to 4 (complete help needed/received). Ratings of help received were subtracted from ratings of help needed in order to identify the extent to which consumers' needs were met or unmet. Findings at Time 5 were similar to those reported following previous times of measurement (Roth et al., 1998; Crane-Ross, Roth, and Lauber, 2000). Agreement between consumers' and case managers' ratings was low overall, Spearman  $r = -.094$  to  $.222$  (See Table 3). Consumers generally viewed more needs as unmet than did their case managers. In particular, consumers' were more likely to identify unmet needs for assistance navigating the complexities of the mental health system. For example, the second greatest unmet need identified by consumers, Finding Out About Available Services, was considered overly met by case managers. Similarly, consumers were more likely than case managers to identify unmet needs for assistance Obtaining Benefits and Income Support and Complaining About Services.

Table 3. Consumers' and Case Managers' Ratings of Met Need.

Type of Need	Consumer	Case Manager	Spearman r (r <sub>s</sub> )	Wilcoxon Z
Vocational services	.46 (1.07)	.23 (.92)	.064	*
Finding available services	.33 (1.30)	-.15 (.78)	-.073	***
Making Friends	.27 (1.09)	.41 (.95)	.086	
Medical and dental care	.20 (1.06)	.00 (.72)	-.018	*
Talking about problems	.18 (1.18)	-.11 (.78)	.073	***
Legal issues	.17 (.83)	.06 (.68)	.222 ***	
Obtaining benefits & income support	.15 (.98)	-.06 (.71)	.082	*
Complaining about Services	.14 (.99)	-.09 (.73)	-.094	**
Interpersonal issues	.06 (.79)	.18 (.78)	.134*	*
Finding and keeping housing	.03 (.70)	-.11 (.79)	.002	*
Transportation	.00 (.87)	-.03 (.69)	.061	
Dealing with upsets and crises	-.03 (.97)	-.02 (.71)	.098	
Managing money	-.08 (1.12)	.13 (.82)	.125*	*
Managing medications	-.17 (.78)	.04 (.77)	.068	***
Getting medications	-.20 (.87)	-.13 (.74)	-.027	
Daily living skills	-.28 (1.19)	.02 (.94)	.092	**

Note. Table values represent means (and standard deviations), correlations, and related sample comparisons of consumers' and case managers' rating of met need. Met need scores were calculated by subtracting ratings of help received from ratings of help needed. Possible score ranged from -4 (no help need, complete help received) to 4 (complete help received, no help needed).

\*  $p < .05$ ; \*\*  $p < .01$ , \*\*\*  $p < .001$

### Outcomes:

Mental health outcomes measured by the LCO study included symptomatology, quality of life, and functioning. Consumers completed ratings of their symptomatology using the anxiety (alpha = .85) and depression (alpha = .85) subscales of the Brief Symptom Inventory (Derogatis & Melisaratos, 1983) and the psychoticism (alpha = .88) subscale of the SCL-90 (Derogatis, 1977). Case managers also

provided ratings of consumers' symptomatology based on definitions of depression, anxiety, and psychoticism provided by Derogatis (1977). Consumers rated their quality of life using six sub-scales of the Lehman Quality of Life Inventory (Lehman, 1983): housing (alpha = .83), leisure (alpha = .82), family (alpha = .85), social relationships (alpha = .87), finances (alpha = .87), and general (alpha = .80). Level of functioning was assessed using Ohio's 508 Functioning Scales (Bean, Townsend, Champney, and Garrett, 1988), which measure functioning using an adapted form of the Uniform Client Data Instrument (National Institute of Mental Health, 1978; Widlak, McKee, Greenberg, & Greenley, 1992). This instrument includes three functioning subscales: behavioral problems (alpha = .83), basic living skills (alpha = .87), and social skills (alpha = .67). In addition, case managers rated their clients' overall level of functioning using the Global Assessment of Functioning Scale (American Psychiatric Association, 1994). (For more information about the psychometric properties of these outcome measures, see Roth, Crane-Ross, et al., 1996).

In order to identify and examine factors most closely related to positive mental health outcomes, a theoretical model was tested using data from Time 5 (see Figures 1, 2, & 3). This model is unique in that it accounts for the observed differences in consumers' and case managers' perceptions of consumers' needs. Three adaptations of this model were tested in order to examine variables affecting outcomes in each outcome domain (symptomatology, quality of life, and functioning).

The model stipulates that mental health outcomes are affected by consumers' and case managers' perceptions of service empowerment and met needs. Met needs are thought to mediate the relationship between service empowerment and outcomes. In other words, individuals who are empowered are expected to be better able to obtain services that meet their needs. In addition, consumers' and case managers' perceptions of needs are expected to be independent and unrelated to one another. That is, no relationship is specified between consumers' and case managers' ratings of needs.

The model was tested using the structural equation modeling software, RAMONA (Browne &

Mels, 1997). The overall model fit indexes suggested that this model provided a close fit to the data for each outcome domain (Symptomatology: RMSEA = .050 (90% CI=.032-.067),  $\chi^2$  (85)=210, *p* value for close fit=.37; Quality of Life: RMSEA = .058 (90% CI=.042-.074),  $\chi^2$  (85)=149, *p* value for close fit=.18; Level of Functioning: RMSEA = .050 (90% CI=.035-.068),  $\chi^2$  (85)=218, *p* value for close fit=.39).

Examination of the regression weights between factors in the model suggested that symptomatology and quality of life outcomes are influenced substantially, and functioning outcomes were influenced to a lesser extent, by consumers' perceptions of met needs. In addition, consumers' perceptions of the extent to which they were empowered with regard to their services affected outcomes indirectly by increasing the likelihood that needs are met. (An alternative model specifying direct effects of service empowerment on outcomes was not supported.) Case managers' perceptions of met needs and service empowerment had no significant effects on symptomatology or quality of life outcomes. Case managers' perceptions of met needs predict outcomes in only one domain: Level of Functioning. In this domain, case managers' perceptions of service empowerment and outcomes account for a larger proportion of the variance in outcomes than do consumers' self-perceptions.

The relationship between consumers' and case managers' perceptions of service empowerment were relatively low, accounting for less than 4% of the variance in these measures. Additional analyses also revealed no relationship between consumers' and case managers' ratings of met needs.

Overall, the findings suggest that consumers' perceptions of service empowerment and met needs play a prominent role in predicting mental health outcomes, particularly with regard to symptomatology and quality of life. In only one area, Level of Functioning, were case managers' perceptions about the degree to which consumers' needs were met a better predictor of outcomes than were consumers' own perceptions. Perhaps these findings suggest that case managers are better able to recognize needs related to functioning, while consumers are better able to recognize needs that influence symptomatology and quality of life. It is likely that regression weights are influenced somewhat by method of assessment

(Level of Functioning was assessed by case managers, Symptomatology and Quality of Life were assessed by consumers' self ratings). Nonetheless, the results suggest that both consumers' and case managers' perceptions of service empowerment and needs should play an integral role in decisions regarding treatment.

Figure 1. Structural Equation Model of Symptomatology Outcomes

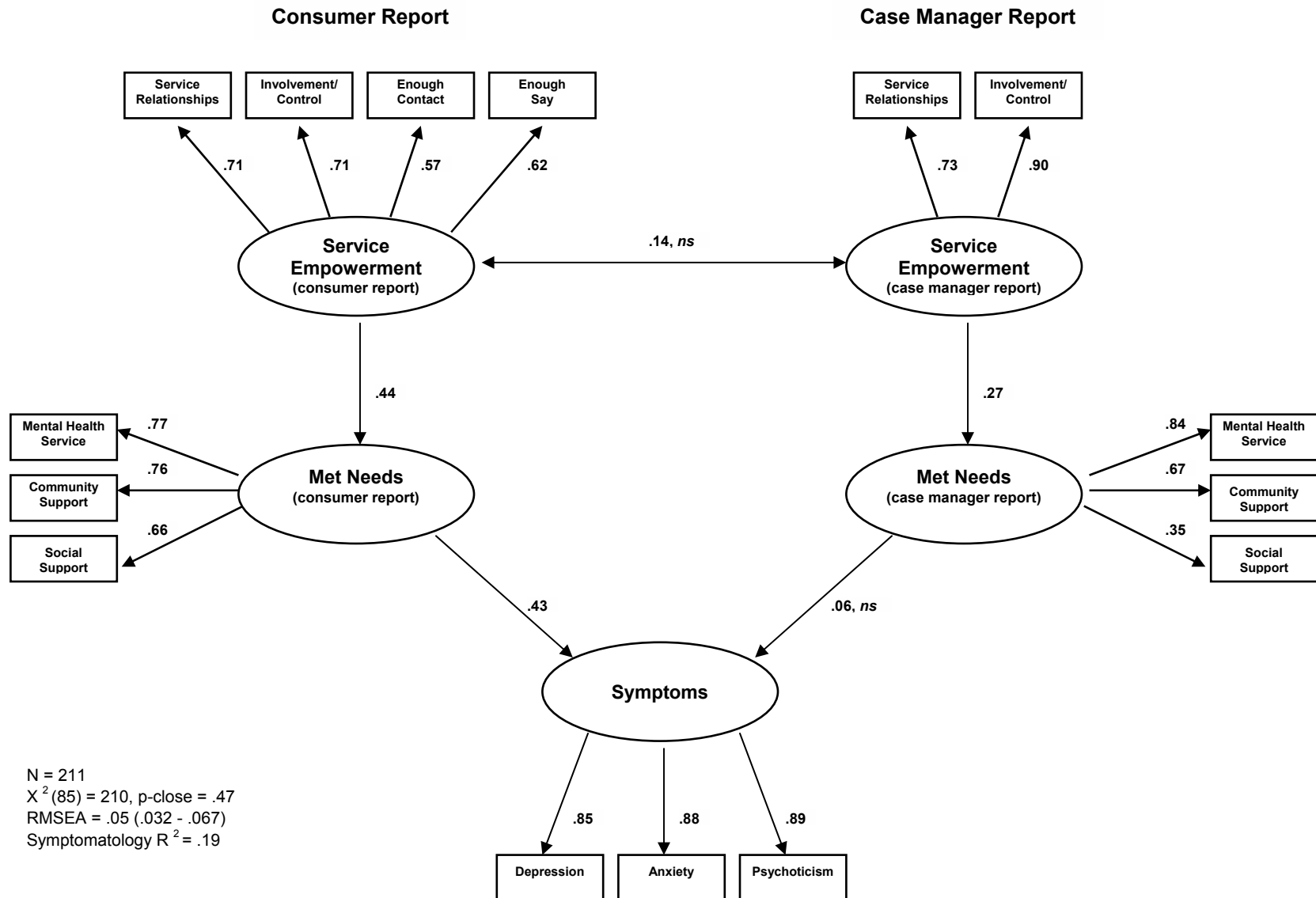


Figure 2. Structural Equation Model of Quality of Life Outcomes

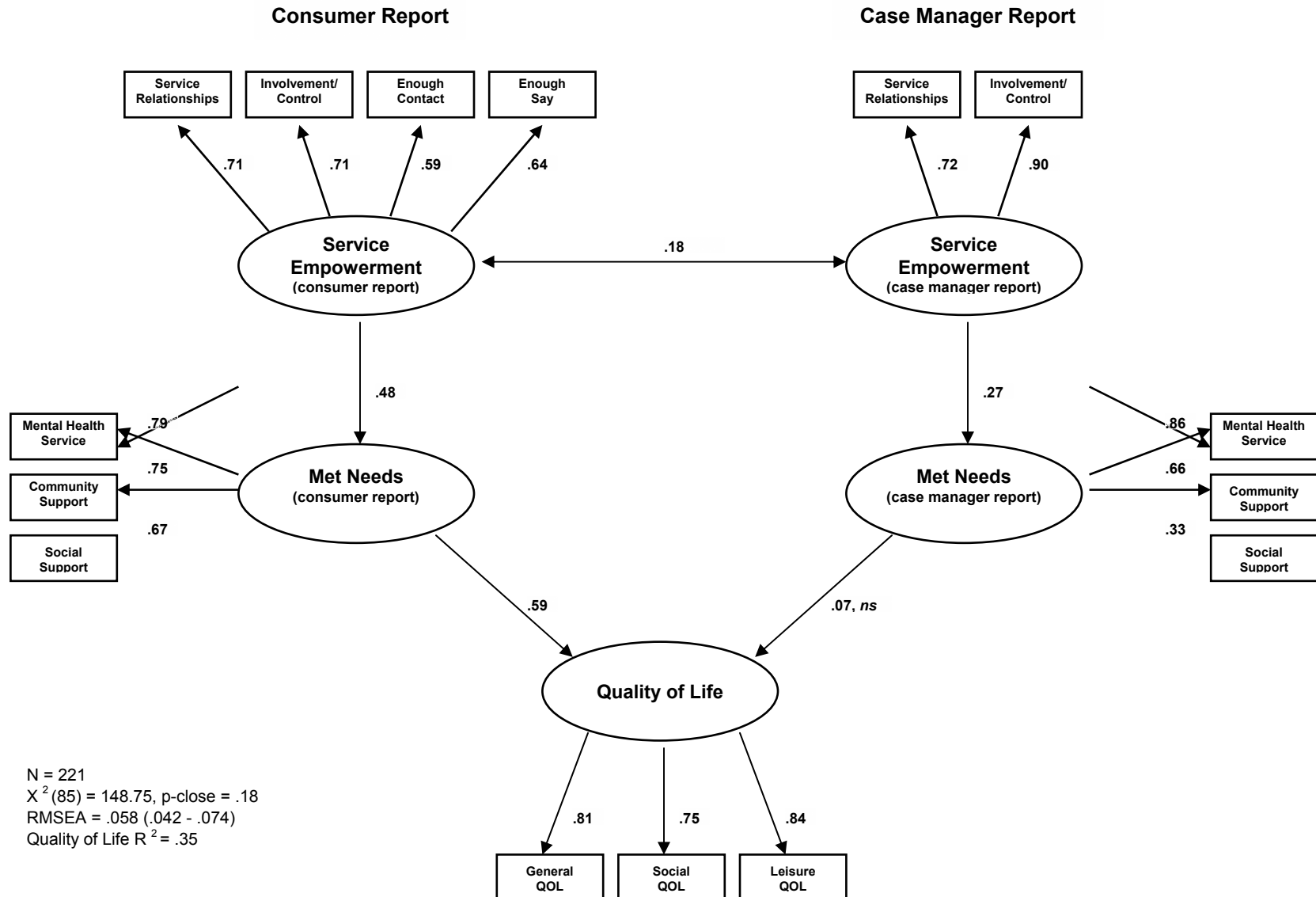
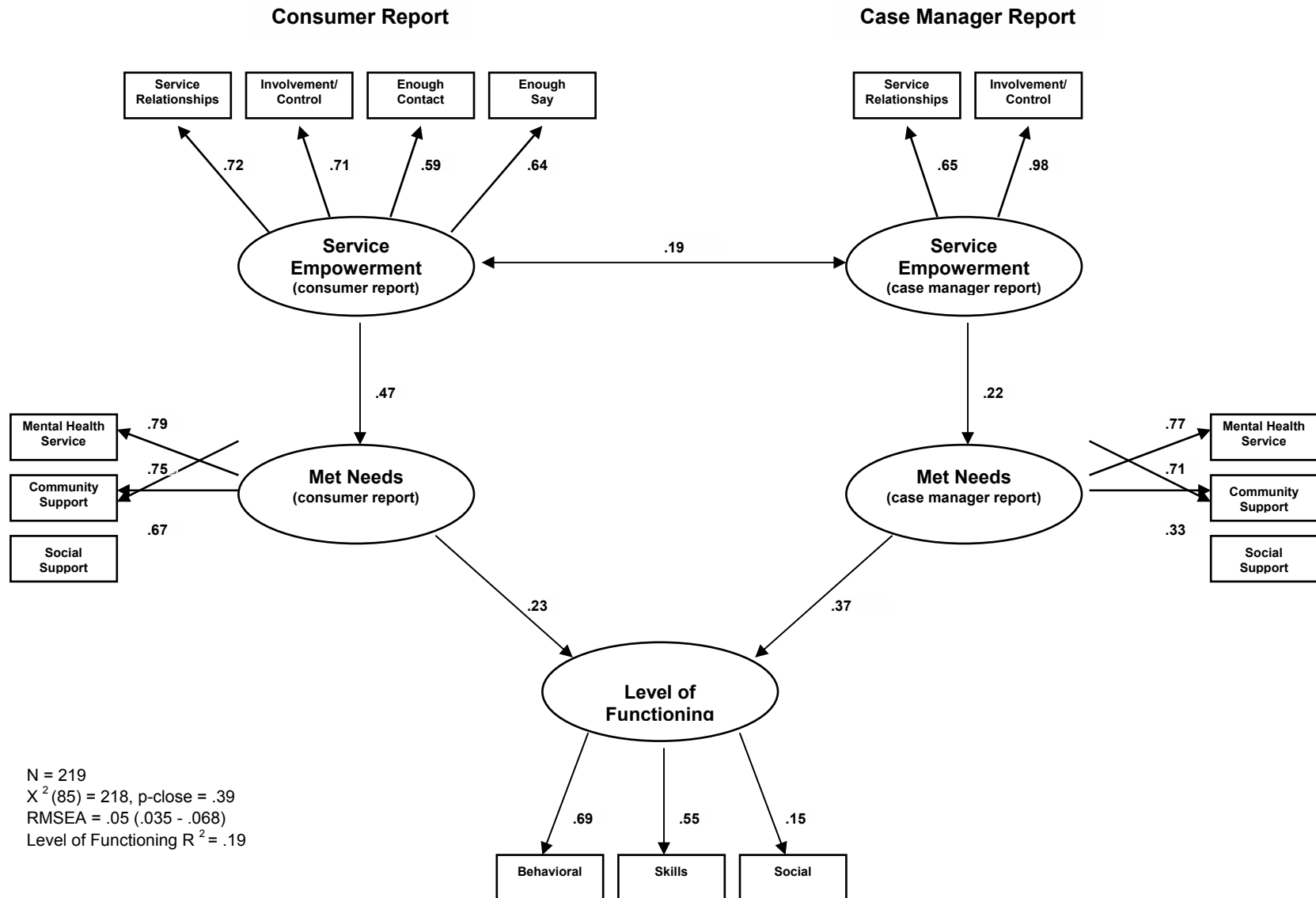


Figure 3. Structural Equation Model of Level of Functioning Outcomes



## New Areas of Interest

### Cohort differences:

The inclusion of a new cohort of consumers in the fifth wave of the SIS/LCO study made possible the identification of characteristics, needs, and perceptions of individuals who were relatively new to the public mental health system. The new cohort included 101 consumers who were 508 certified for the first time in 1996. In comparison, the longitudinal cohort included 269 consumers who were 508 certified prior to 1991. Comparisons of these two groups revealed meaningful differences with regard to demographic characteristics, clinical status, physical health, and perceptions of service empowerment.

Demographic Characteristics. Differences were observed in the racial characteristics of individuals in each cohort. In particular, the proportion of consumers who were African American was higher in the new cohort in comparison to the old cohort (new cohort: 25.7%; old cohort: 20.1%). Additional analyses of statewide service records indicated that this pattern of change occurred throughout Ohio.

Differences were also observed in the ages of consumers in each cohort (new cohort:  $M=42.4$ ,  $SD=9.8$ ,  $Mdn=42.5$ ; old cohort:  $M=50.1$ ,  $SD=12.1$ ,  $Mdn=48.7$ ,  $t [357] = 5.714$ ,  $p < .001$ ); however, these differences were related to the timing of entry into the study. Individuals in the new cohort were approximately the same age that individuals in the old cohort were when they entered the study in 1991. Similarly, the higher proportion of women in the new cohort (66.3% compared to 57.5% for the old cohort) can be attributed to gender differences in patterns of 508 certification. Women tend to be 508 certified at a much higher rate than men, but they are less likely than men to remain 508 certified. Over time the proportion of women in the entire 508 population has remained unchanged.

Clinical Status and Physical Health. Of particular interest were differences observed in the clinical characteristics of individuals in the old and new cohorts (see Table 4). The rate of schizophrenia was substantially lower among individuals in the new cohort, while the rate of affective disorders was

much higher ( $\chi^2 [3,312] = 40.597, p < .001$ ). Analysis of statewide service records suggest that this change is reflective of changes observed in the population of consumers with SMD in Ohio. A similar pattern was observed in consumers' and case managers' symptomatology ratings (see Table 4). Case managers reported that consumers in the new cohort experienced fewer symptoms of psychoticism ( $U [285] = 6965.0, p < .005$ ), but more symptoms of depression ( $U [289] = -7483.5, p < .01$ ) and anxiety ( $U [292] = 7957.0, p < .05$ ). Furthermore, consumers in the new cohort reported being more bothered by symptoms of depression ( $t [352] = -2.459, p < .05$ ) than consumers in the old cohort.

Due to their younger age, individuals in the new cohort were expected to have better physical health; however, the results suggest that they were more likely than individuals in the old cohort to experience physical ailments that interfered with their functioning. Specifically, 27.5% (n = 72) of consumers in the old cohort compared to 43.4% (n = 43) in the new cohort reported that their physical health interfered with their everyday functioning “quite a bit” or “extremely” ( $U [360] = 10505.0, p < .01$ ). Case managers indicated that 17.3% (n = 34) of consumers in the old cohort had physical ailments that were “very” or “extremely” problematic for every day functioning, compared to 24.4% (n = 21) of consumers in the new cohort. (For more information about physical health, see Roth, Crane-Ross, Hannon, & Carstens, 2000b.) Consumers in the new cohort also reported lower quality of life, particularly with regard to physical health ( $t [364] = 3.063, p < .005$ ), leisure activities ( $t [364] = 4.146, p < .001$ ), finances ( $t [361] = 2.422, p < .05$ ), and their life as a whole ( $t [363] = 2.223, p < .05$ ).

Table 4. Diagnosis and Symptoms.

Characteristic	Old Cohort (N = 228)		New Cohort (N=101)	
	N	(%)	N	(%)
Diagnosis (Case Manager Report)				
Schizophrenia	104	(38.8%)	13	(12.9%)
Other Psychoses	32	(11.9%)	13	(12.9%)

Characteristic	Old Cohort (N = 228)		New Cohort (N=101)	
	N	(%)	N	(%)
Affective	54	(20.1%)	54	(53.5%)
Other	28	(10.4%)	14	(13.9%)
Missing	50	(18.7%)	7	(6.9%)
Symptomatology (Consumer Report) <sup>a</sup>	Mean	Std Dev	Mean	Std Dev
Depression	1.32	.92	1.60	1.01
Anxiety	1.37	1.00	1.58	1.08
Psychoticism	1.01	.86	1.14	.81
Symptomatology (Case Manager Report) <sup>b</sup>				
Depression	1.42	.90	1.75	1.00
Anxiety	1.47	.89	1.73	1.03
Psychoticism	1.17	1.08	.78	1.06

<sup>a</sup> On a scale from 0 “not at all bothered by this symptom” to 4 “extremely bothered.”

<sup>b</sup> On a scale from 0 “symptom not present” to 4 “extremely present.”

Service Empowerment. Consumers in the new cohort reported higher levels of service empowerment and attached more importance to being empowered than consumers in the old cohort (see Table 2). Compared to consumers in the old cohort, individuals in the new cohort reported having more say in the services they received ( $U [309] = 8216.0, p < .005$ ), attributed more importance to having a say in the services they received ( $U [311] = 7496.0, p < .001$ ), and reported more control over their services and treatments ( $U [309] = 7713.5496, p < .005$ ). Consumers in the new cohort also reported having more involvement in the development of their treatment plan ( $U [289] = 6644.0, p < .001$ ) and in resolving the crises they experienced ( $U [287] = 7699.0, p < .05$ ). Furthermore, consumers in the new cohort were more likely to indicate that their treatment plan fit with what they wanted ( $U [279] = 7250.5, p < .05$ ). With regard to medication, consumers in the new cohort reported more involvement with their medication decisions ( $U [317] = 7756.5, p < .001$ ) and attached more importance to being involved in their

medication decisions ( $U [315] = 7290.5, p < .001$ ) than consumers in the old cohort.

Employment. It was anticipated that the level of employment would be higher among the participants in the new cohort due to their younger age, but only 25.5% ( $n = 68$ ) of consumers in the old cohort and 26.7% ( $n = 27$ ) of consumers in the new cohort reported working or volunteering. Thus, the rate of employment was low for individuals in both cohorts. In contrast, cohort differences were observed in attitudes regarding employment. Consumers in the new cohort attributed more importance to having a job ( $U [364] = 11184.5, p < .05$ ). Only 40.1% ( $n = 108$ ) of consumers in the old cohort versus 52.5% ( $n = 51$ ) of individuals in the new cohort said that it was “quite a bit” or “extremely” important to work or volunteer.

Overall, the observed cohort differences suggest that individuals who are currently entering the mental health system have different characteristics and needs than those who entered the mental health system in the past. In particular, the new consumers are more likely to be affected by symptoms of depression and by physical health problems. It is likely that these two variables are related: individuals experiencing physical health problems are more likely to suffer from depression. One encouraging change is that consumers who are relatively new to the mental health system are more empowered with regard to their services and place more importance on service empowerment than consumers who entered the mental health system in the past. Unfortunately, employment is lower than one might expect for consumers in the new cohort, suggesting that vocational services continue to be an unmet need.

**Medication:**

Between 1993 and 1998, there has been a dramatic increase in proportion of consumers using atypical antipsychotic medications as over 40% of consumers prescribed antipsychotic medications switched from the older, typical antipsychotics to atypical antipsychotic medications. In order to examine the effects of switching from typical to atypical antipsychotic medications, we examined changes in the outcomes of 46 consumers prescribed typical antipsychotics at one wave of data collection and switched

to either olanzapine or risperidone by the next wave. Compared to individuals who remained on typical medications, those who later switched were consumers experiencing higher levels of symptomatology and more difficulties with their medications. In particular, these individuals reported higher levels of anxiety ( $t [87] = -2.149, p < .05$ ), depression ( $t [88] = -2.229, p < .05$ ), and psychoticism, ( $t [86] = -2.448, p = .016$ ) than those who remained on typical medications. Those switched to atypical antipsychotics also had a lower quality of life ( $t [90] = 3.219, p < .005$ ), lower rates of compliance according to their case managers ( $U [86] = 740.0, p < .05$ ), and were more fearful of taking their medications ( $\chi^2 [1, 90] = 8.709, p < .005$ ).

After switching, improvements were observed in consumers' self-reports of their quality of life, symptomatology, and needs to the point that they did not differ from the consumers who remained on the typical antipsychotic medications. However, there was no improvement in medication compliance, reported side effects, or fear of taking medications. It is unclear why the expected reductions in side effects were not found. It may be that some consumers were concerned about side effects other than the extrapyramidal and parkinsonian symptoms that the typical medications are noted for causing, that switching medications brings renewed attention to side effects, or that consumers switched to atypical antipsychotics were referring to of the side effects of previous medications or other, non-antipsychotic medications. (For more information on this topic, see Hannon, Crane-Ross, Roth, & Lutz, in review.)

### **Insurance:**

To learn about the resources available to consumers in the public mental health system and about the paths people follow into the public mental health system, questions about current and past insurance coverage were added in the fifth wave of data collection. We found that the vast majority of LCO participants (86.2%,  $n = 318$ ) received Medicaid or Medicare. Few consumers (15.6%,  $n = 56$ ) were currently covered by health insurance other than Medicaid or Medicare and even fewer (11.7%,  $n = 42$ )

had mental health coverage through this other insurance. The most frequent sources of mental health insurance other than Medicaid or Medicare included a spouse's coverage (n = 14) or the respondent's employment (n = 10).

Some consumers (17.7% of those without current coverage, n = 58) reported that they had mental health coverage in the past and lost it. In most cases the loss was due to a job loss (n = 24), divorce (n = 12), or aging out of parents' policy (10%, n=6). Divorce was mentioned more frequently by women than men as a reason for losing mental health coverage. Our analysis of insurance coverage suggests that the people entering the public mental health system are predominantly those who never had private mental health coverage. The majority of respondents are largely untouched by the parity debate due to their past and continuing lack of any private insurance coverage. (For more information about insurance coverage, see Hannon, Roth, & Hogan, in review).

### **Criminal justice involvement:**

At Time 5, new questions were added to examine consumers' involvement with the criminal justice system in the past year and victimization by crime over their lifetime (see Table 5). The rate of criminal perpetration in the two cohorts was equivalent and relatively low overall. The rate of lifetime criminal victimization was relatively high, affecting 52.3% (n = 193) of all consumers. Furthermore, rates of criminal victimization were substantially higher among individuals in the new cohort than the old cohort. In particular, individuals in the new cohort were more likely to report that they had been physically attacked at some point during their lives ( $\chi^2[1,363] = 4.891, p < .05$ ). (For more information about criminal justice involvement, see Roth, Crane-Ross, Hannon, & Carstens, 2000c.)

Table 5. Past year criminal justice involvement and lifetime victimization by crime.

	Old cohort	New Cohort
In the past year, have you been:		
Involved with the police?	33 (12.5%)	18 (18.0%)
Arrested?	14 (5.3%)	8 (8.0%)
Jailed?	13 (4.9%)	8 (8.0%)
Has anyone ever:		
Threatened you with physical harm?	98 (37.4%)	46 (45.5%)
Physically attacked you?	88 (33.5%)	46 (46.0%)
Pressured/forced you into unwanted sexual activity?	63 (23.9%)	30 (29.7%)

Note. number of “yes” responses and (percentage of valid responses).

**Recovery:**

In a question new to the T5 survey instrument, consumers were asked “For you, what things have been the most helpful in your progress toward recovery?” For these purposes, recovery was defined as “the way people have learned to adapt and live with their illness and then go on with their lives.” The consumers’ responses were coded into eleven categories. Medication was the category mentioned most frequently by respondents (31%, n = 115). In particular, consumers indicated that the ability to discuss their medications with their healthcare providers was helpful. Approximately 26% (n=97) of participants indicated that being involved in “self-initiated activities” (i.e., activities that they could do independently) had a major impact on their recovery. Social support was important to many consumers. Twenty-two

percent (n = 81) of participants indicated that they relied on their family, and 14% (n = 51) indicated that friends provided crucial support. Service providers were also considered an important source of assistance in recovery by many consumers. Fifteen percent (n = 54) indicated that medical personnel provided assistance in recovery, 9% (n = 32) mentioned case managers, 8% (n = 30) mentioned counselors or therapists, and 14% (n = 51) indicated that agency services and staff played a prominent role. Eleven percent (n = 42) of consumers indicated that having someone to talk to who would listen to their concerns was important. Finally, 14% (n=50) of consumers indicated that spirituality made an important contribution to their recovery. Overall, the factors identified by participants in this study were consistent with much of the current literature on recovery (Davidson & Strauss, 1992; Topor, Svensson, Borg, Bjerke, & Kufas, 1998) (For more information in this area, please see Roth, Crane-Ross, Hannon, Carstens, & Cusick, 2000.)

### **Conclusions and Implications**

1. Changes in service patterns suggest that services became more complex and individualized during the years following the Mental Health Act of 1988. These positive changes reached a peak in 1993. However, a downward shift in both the intensity and diversity of service patterns has been observed during the most recent years of data collection, 1996 and 1997. This downward shift is of concern, given the high levels of need experienced by individuals with SMD.
2. Consumers' perceptions of service empowerment (e.g., the level of involvement in treatment planning and decisions about their services) and met needs play a prominent role in predicting mental health outcomes, particularly with regard to symptomatology and quality of life. It is critical that consumers feel a genuine sense of empowerment in their

relationships with service providers and that consumers' perceptions of their individual needs are included in decisions regarding services and treatment.

3. Consumers do not perceive themselves to be as empowered as they would like to be with regard to their services and treatment. In addition, consumers and case managers have different perceptions of consumers' needs. Consumers may benefit if providers re-examined how or the extent to which they engage in active listening to consumers around their needs and work toward incorporated consumers' perspectives in treatment planning.
4. Consumers who are newer to the mental health system have different characteristics and needs. Compared to consumers who were 508 certified in the past, consumers who are currently entering 508 status have higher rates of affective disorders, lower rates of schizophrenia, a lower quality of life and more physical health problems. It is important that available services are responsive to the different diagnostic profiles and greater need for physical health care among newly certified consumers.
5. Vocational services are still among the top one unmet need identified by both consumers and case managers. In addition, the rate of employment is very low, even among consumers who are relatively new to the mental health system. More emphasis on employment is needed for the severely mentally disabled adult population.
6. In the current study, switching to atypical antipsychotic medications was associated with consumers' reports of improvements in symptomatology and quality of life; however, no improvements were observed in medication compliance or side effects. Consumers who switch to atypical antipsychotic medications may continue to require high levels of medication monitoring to control side effects and increase medication compliance.

7. Consumers identified a variety of factors that contributed to their recovery. In particular, use of appropriate medications, involvement in self-initiated activities, social support, and support from service providers were viewed as helpful to the recovery process. It is important that treatment plans address and incorporate these areas.

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