

Observational Study

Health-care needs of remitted patients with bipolar disorder: A comparison with schizophrenia

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Abstract

AIM

To investigate health-care needs and their correlates among patients with remitted bipolar disorder (BD) compared to patients with remitted schizophrenia.

METHODS

Outpatients with BD ($n = 150$) and schizophrenia ($n = 75$) meeting clearly defined remission criteria were included in the study along with their relatives. Diagnostic ascertainment was carried out using the Mini International Neuropsychiatric Interview. Demographic and clinical details were recorded using structured formats. Residual symptoms were assessed using standardized scales. Health-care needs were assessed on two separate scales. The principal instrument employed to assess health-care needs was the Camberwell Assessment of Need-Research version (CAN-R). To further evaluate health-care needs we felt that an additional instrument, which was more relevant for Indian patients and treatment-settings and designed to cover those areas of needs not specifically covered by the CAN-R was required. This instrument with a structure and scoring pattern similar to the CAN-R was used for additional evaluation of needs. Patients' level of

functioning was assessed using the Global Assessment of Functioning Scale and their quality of life (QOL) using the World Health Organization Quality Of Life-BREF version in Hindi.

RESULTS

An average of 6-7 needs was reported by patients with BD as well as their relatives. Commonly reported needs were in the areas of economic and welfare needs, informational needs, social needs and the need for treatment. According to the CAN-R, both patients and relatives reported that more than 60% of the total needs were being met. However, over 90% of the needs covered by the additional evaluation were unmet according to patients and relatives. Needs in the areas of economic and welfare-benefits, information, company, daytime activities and physical health-care were largely unmet according to patients and relatives. Total, met and unmet needs were significantly higher for schizophrenia, but the most common types of needs were quite similar to BD. Relatives reported more needs than patients with certain differences in the types of needs reported. Level of patients' functioning was the principal correlate of greater total and unmet needs in both groups. Significant associations were also obtained with residual symptoms and QOL.

CONCLUSION

The presence of unmet needs in remitted patients with BD was an additional marker of the enduring psychosocial impairment characteristic of the remitted phase of BD.

Key words: Health-care needs; Bipolar disorder; Schizophrenia; Remission; Patients; Relatives

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Core tip: Health-care needs, functioning and quality of life (QOL) were assessed in 150 outpatients with remitted bipolar disorder (BD) and 75 with remitted schizophrenia. A high number of needs were found in BD; economic, welfare and information needs were mostly unmet. Total, met and unmet needs were significantly higher for schizophrenia, but the pattern of needs was similar to BD. Relatives reported more needs than patients with differences in the types of needs. Patient-functioning, residual symptoms and QOL were associated with higher needs. Unmet needs in remitted patients with BD were indicative of the enduring psychosocial impairment during remission.

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INTRODUCTION

The traditional view of bipolar disorder (BD) is that of a condition characterized by good outcome and complete recovery from acute episodes of the illness. However, research over the past few decades has clearly shown that a substantial proportion of remitted patients with BD continue to display subsyndromal symptoms, neurocognitive deficits and impairments in occupational and social functioning^[1-3]. The diverse nature of these disabilities in BD suggests that measures beyond mere clinical symptoms are required to truly estimate the psychosocial impact of the condition during remission. Measures such as quality of life (QOL) or level of functioning are useful, but they do not generally provide much information about how the illness-related dysfunction or lack of satisfaction with treatment can be alleviated. The concept of "health-care needs" appears to overcome this shortcoming being a measure of outcome, in which subjective perceptions of patients and caregivers are evaluated in order to determine ways of improving the outcome of the illness^[4].

The National Health Service and Community Care Act^[5] defines "need" as the "requirement of the individual to achieve, maintain and restore an acceptable level of social independence and QOL". A health-care need is considered to be present when because of symptoms, distress or disability, the patient's level of functioning is not optimal due to some potentially remediable or preventable cause^[4]. Accumulating evidence indicates that the extent to which needs of patients is met predicts their levels of disability, QOL, and satisfaction with treatment^[6,7]. Accordingly, examination of needs and their correlates not only serves as the basis for improved treatment and judicious resource allocation, but also as a comprehensive indicator of the psychosocial status of patients and their psychosocial outcome following treatment^[8]. Finally, in order for patients to become partners in their own treatment, it is important to understand and prioritize their personal wants and needs^[4].

Despite the obvious implications of examining health-care needs of patients, very few studies have chosen to focus exclusively on examining needs among patients with BD. This contrasts with the large amount of literature available on needs of patients with other mental illnesses, particularly schizophrenia. Accordingly, the current study aimed to assess health-care needs and their correlates among patients with BD in remission, compared to those with remitted schizophrenia. Given the paucity of literature in this area, the first objective was to document the number and types of needs found among patients with BD in remission. To provide a context for the findings in BD, comparisons were carried out with health-care needs among patients with remitted schizophrenia and the correlates of health-care needs were also examined. Schizophrenia was chosen as a comparison group because of the substantial

amount of research data on health-care needs available for this condition. Based on previous research it was hypothesized that the number and types of health-care needs in BD would be similar to schizophrenia and would be associated with patient-functioning, symptom-severity and QOL. Since some differences between patients' and caregivers' evaluation of needs has been reported earlier^[9,10], health-care needs were assessed both from the perspective of patients and their relatives. The eventual findings were expected to yield a better understanding of health-care needs among patients with BD in remission.

MATERIALS AND METHODS

Approval/consent

The protocol was approved by the ethics and research committees of the institute where it was conducted. Written informed consent was sought prior to induction and other ethical safeguards were maintained during the study.

Participants

Patients along with their relatives were recruited from those attending the outpatient psychiatric services of a tertiary-care hospital in north-India. Patients aged 18-60 years, with a diagnosis of BD or schizophrenia as per DSM-IV criteria^[11], determined using the Mini International Neuropsychiatric Interview (MINI)^[12] were included. Patients with BD had to be in remission, which was defined cross-sectionally as a score of < 8 on the 17-item Hamilton Depression Rating Scale^[13] and a score of < 6 on the Young Mania Rating Scale^[14]. Further, only those patients with BD without acute episodes in the 3-mo period prior to intake were included based on information from patients, relatives and case notes. Finally, patients had to be on a stable dose of psychotropics, *i.e.*, not more than 50% hikes or reductions in dosages in these 3 mo. Patients with schizophrenia were included if they met remission criteria of Andreasen *et al.*^[15] on the Positive and Negative Syndrome Scale for Schizophrenia (PANSS)^[16]. Similar to patients with BD, only patients with no exacerbations of positive or negative symptoms and on stable doses of psychotropics in the 3-mo period prior to intake were included. Additionally, both patient groups were matched on age, gender, residence (urban/rural) and duration of illness. Patients with comorbid psychiatric or physical illnesses, substance use disorders (except nicotine use) and organic brain syndromes were excluded. Over a period of about a year, 150 outpatients with BD and a matched group of 75 outpatients with schizophrenia who fulfilled the selection criteria were inducted along with their relatives.

Assessments

Apart from confirming diagnoses with the MINI and rating symptoms, demographic and clinical details were recorded using structured formats. The principal

instrument employed to assess health-care needs was the Camberwell Assessment of Need-Research version (CAN-R)^[17]. The CAN-R consists of clinical and social needs divided into 22 areas. In each of these areas there are four sections, which assess the severity of need, current help received from friends or relatives, help from social services and outpatient clinics, the adequacy of help and satisfaction with the help received on a four-point scale. Though the CAN-R is a valid and reliable instrument for assessing needs of people with severe mental illnesses, it appeared to leave out some of the needs commonly reported by Indian patients. To evaluate health-care needs felt to be more relevant for Indian patients and treatment-settings, an additional instrument which was designed to cover those areas of needs not specifically covered by the CAN-R was used. The structure and scoring pattern of this instrument was similar to the CAN-R, but it had 21 items/areas not covered by the CAN-R. This scale has been used in a multi-centric Indian study on needs of patients with severe mental illnesses^[18]. Finally, the level of functioning of patients was assessed using the Global Assessment of Functioning Scale (GAF)^[11] and their QOL using the World Health Organization Quality Of Life-BREF version in Hindi (WHOQOL-BREF)^[19].

Statistical analysis

Data were analyzed using the Statistical Package for Social Scientists, version 15.0. Continuous variables in the two groups were compared using "t" tests or Mann-Whitney tests, and ordinal and nominal variables using χ^2 tests. To examine the association between health-care needs and clinical and demographic correlates, Pearson's Product Moment Correlation coefficients (for normally distributed continuous data) and Spearman's Rank Correlation coefficients (for ordinal data with non-normal distributions) were estimated. Significance was set at 5%; *P* values were also adjusted for the multiple correlations carried out by using the Bonferroni correction. Separate stepwise multiple regression analyses with total and unmet needs on the CAN-R as dependent variables were carried out using patients' and relatives' reports to determine the correlates of health-care needs.

RESULTS

Profile of participants (Table 1)

Patients with BD were more likely to be married and in paid employment compared to those with schizophrenia. Relatives of patients with BD were more likely to be women and more likely to be their spouses, whereas parents outnumbered spouses in the schizophrenia group. All patients were on treatment. Clinical profiles of both groups were comparable.

Needs assessment on the CAN-R: Patients' reports (Table 2)

Though the total number of needs was relatively high

Table 1 Profile of the patients and their relatives

	Patients		Relatives	
	Bipolar disorder (<i>n</i> = 150)	Schizophrenia (<i>n</i> = 75)	Bipolar disorder (<i>n</i> = 150)	Schizophrenia (<i>n</i> = 75)
Age (yr)	36.1	33.4 (9.9)	42.3	43.7
mean (SD)	(10.1)		(12.8)	(11.7)
Gender <i>n</i> (%)				
Male	101 (67)	42 (56)	64	46 (61) ^a
Female	49	33	86 (57)	29
Marital status <i>n</i> (%)				
Not married	43	35	12	5
Married	107 (71)	40 (53) ^a	138 (92)	70 (93)
Years of schooling mean (SD)	11.4 (4.9)	11.5 (4.4)	11.1 (5.9)	11.6 (6.24)
Occupation <i>n</i> (%)				
Paid employment	103 (69)	27	72	44 (59)
Others	47	48 (64) ^b	78 (52)	31
Family type <i>n</i> (%)				
Nuclear	69	35		
Non-nuclear	81 (54)	40 (53)		
Residence <i>n</i> (%)				
Urban	86 (57)	39 (52)		
Rural	64	36		
Relationship with the patient <i>n</i> (%)				
Spouse			68 (45%)	17 (23) ^a
Parents			48 (32%)	30 (40)
Sibs			16 (11%)	14 (19)
Others			18 (12%)	14 (19)
Age of onset (in years) mean (SD)	26.7 (9.5)	26.1 (12.7)		
Duration of illness (mo) mean (SD)	110.3 (78.9)	93.7 (65.9)		
Duration of treatment (mo) mean (SD)	99.1 (69.5)	100 (94.3)		
Number of hospitalizations in the past mean (SD)	0.7 (1.0)	0.5 (0.9)		
PANSS positive score mean (SD)	-	10.6 (5.6)		
PANSS negative score mean (SD)	-	12.3 (7.2)		
PANSS general psychopathology score mean (SD)	-	27.4 (12.6)		
YMRS score mean (SD)	2.0 (3.1)	-		
HDRS score mean (SD)	1.0 (2.1)	-		
GAF score mean (SD)	70.07 (17.79)	66.63 (15.63)		
WHOQOL-BREF scores mean (SD)	93.87 (15.17)	88.77 (17.85)		

^a*P* < 0.01; ^b*P* < 0.001: Comparisons between BD and schizophrenia on marital status and occupation of patients, relatives' gender and relationship with patient. PANSS: Positive and Negative Syndrome Scale for Schizophrenia; YMRS: Young Mania Rating Scale; HDRS: Hamilton Depression Rating Scale; GAF: Global Assessment of Functioning; WHOQOL-BREF: World Health Organization Quality of Life Bref version; BD: Bipolar disorder.

among both patient groups, more than 60% of the total needs were perceived as being met. The mean number of total, met and unmet needs reported by patients was significantly higher for schizophrenia than BD. However, the pattern of individual needs was largely similar with the eight most common domains of needs in both groups being: Help with providing welfare-benefits, information about the condition and its treatment, help with household skills, help for allaying psychological distress, the need for company and social life, help regarding physical-health problems, help with daytime activities, help with self-care, and help for coping with psychotic symptoms. Among these domains, needs were perceived to be unmet in the areas of welfare-benefits, company, and information (mainly for schizophrenia) by a greater proportion of the patients. Patients with schizophrenia reported significantly greater needs in some additional domains including help with psychotic symptoms, the need for company, telephones and transport, and financial needs.

Needs assessment on the CAN-R: Relatives' reports (Table 3)

The overall pattern of needs and the eight most common needs reported by relatives was similar to that of patients. Like patients about 60% of the total needs were perceived to be met by relatives. Additionally, the mean number of total needs and met and unmet needs were significantly higher for those with schizophrenia than those with BD. Certain significant differences were, however, noted between patients and relatives. For the BD group, the mean number of total needs (*t* = 1.97; *P* < 0.05) and unmet needs (*t* = 2.01; *P* < 0.05) was significantly higher according to the relatives. Similar to patients' reports, the need for help with psychotic symptoms and for transport were greater among those with schizophrenia, but unlike patients, relatives reported significantly greater total needs in the domains of accommodation and help with the household skills. Finally, while in the BD group, the need for welfare benefits and company (among the eight most common needs) were perceived as being largely unmet, in the schizophrenia group unmet needs were greater in two additional areas of help with daytime activities and information about the condition and its treatment, where the proportion of relatives reporting unmet needs was significantly greater than those reporting information needs to be met ($\chi^2 = 13.79$; *P* < 0.01).

Help received and satisfaction with help: Patients' and relatives' reports

Patients' and relatives' reports about the help received from formal (health-care services) and informal sources (family), and their satisfaction with this help revealed certain common trends across both patient groups. Firstly, both patients and relatives reported that they had hardly received any help from either formal or informal sources and were largely dissatisfied with the help received in three of the eight areas where needs

Table 2 Health-care needs on the Camberwell Assessment of Need-Research version - as reported by patients

Bipolar disorder <i>n</i> = 150				Schizophrenia <i>n</i> = 75			<i>t</i> values
Total needs - mean (SD)	6.03 (2.87)			7.45 (2.80)			3.54 ^d
Met needs - mean (SD)	3.92 (2.21)			4.58 (2.32)			2.07 ^a
Unmet needs - mean (SD)	2.1 (1.70)			2.87 (1.88)			3.01 ^b
Domains	Total needs <i>n</i> (%)	Met needs <i>n</i> (%)	Unmet needs <i>n</i> (%)	Total needs <i>n</i> (%)	Met needs <i>n</i> (%)	Unmet needs <i>n</i> (%)	χ^2 values
Accommodation	11 (7)	11 (7)	0 (0)	9 (12)	7 (9)	2 (3)	1.34
Food	16 (11)	16 (11)	0 (0)	12 (16)	10 (13)	2 (3)	1.3
Household skills	92 (61)	86 (57)	6 (4)	55 (73)	52 (69)	3 (4)	3.17
Self care	28 (19)	25 (17)	3 (2)	18 (24)	15 (20)	3 (4)	0.87
Daytime activities	65 (43)	44 (29)	21 (14)	41 (55)	21 (28)	20 (27)	2.57
Physical health	68 (45)	47 (31)	21 (14)	32 (43)	27 (36)	5 (7)	0.14
Psychotic symptoms	44 (29)	38 (25)	6 (4)	67 (89)	60 (80)	7 (9)	72.01 ^d
Information about condition and treatment	106 (71)	61 (41)	45 (30)	60 (80)	24 (32)	36 (48)	2.25
Psychological distress	87 (58)	73 (49)	14 (9)	40 (53)	32 (43)	8 (11)	0.44
Safety to self	14 (9)	14 (9)	0 (0)	5 (7)	4 (5)	1 (1)	0.46
Safety to others	21 (14)	16 (11)	5 (3)	8 (11)	5 (7)	3 (4)	0.49
Alcohol	8 (5)	8 (5)	0 (0)	0 (0)	0 (0)	0 (0)	2.73
Drugs	13 (9)	8 (5)	5 (3)	4 (5)	1 (1)	3 (4)	0.39
Company	74 (47)	36 (24)	38 (25)	50 (67)	24 (32)	26 (35)	6.07 ^a
Intimate relationships	17 (11)	7 (5)	10 (7)	10 (13)	3 (4)	7 (9.3)	0.04
Sexual expression	14 (9)	9 (6)	5 (3)	3 (4)	0 (0)	3 (4)	1.34
Child care	21 (14)	18 (12)	3 (2)	10 (13)	6 (8)	4 (5)	0.019
Basic education	9 (6)	7 (5)	2 (1)	7 (9)	6 (8)	1 (1)	0.84
Telephone	33 (22)	28 (19)	5 (3)	27 (36)	23 (31)	4 (5)	5.01 ^a
Transport	19 (13)	14 (9)	5 (3)	18 (24)	12 (16)	6 (8)	4.67 ^a
Money	30 (20)	22 (15)	8 (5)	30 (40)	12 (16)	8 (11)	10.22 ^a
Welfare benefits	114 (76)	1 (1)	113 (75)	63 (84)	0 (0)	63 (84)	1.91

^a*P* < 0.05; ^b*P* < 0.01; ^d*P* < 0.001: Comparisons between BD and schizophrenia on total, met and unmet needs and different types of needs. BD: Bipolar disorder.

were commonly expressed including welfare-benefits (93%-98%), information about the condition and its treatment (59%-73%), and the need for company and social life (45%-56%). In the areas of help regarding physical-health problems and with daytime activities, some help was received from friends and family; still, about a-third to half of the respondents were dissatisfied with help received. In the areas of help with the household skills and for allaying psychological distress, majority of the respondents (73%-100%) reported receiving help from informal sources, and were satisfied with the help received. In the area of psychotic symptoms, a majority of the patients with schizophrenia and their relatives (85%-90%) acknowledged receiving help from health-care services and were satisfied with the help received; though respondents in the bipolar group did not receive much help from formal sources, the majority were still satisfied by the help received in this area (83%-90%).

Additional evaluation of health-care needs of patients (Table 4)

Results of the additional evaluation of needs showed that a larger proportion of the needs (over 90%) reported by patients or their relatives were unmet in contrast to the CAN-R evaluation. Similar to the CAN-R evaluation, total, met and unmet needs were significantly greater among those with schizophrenia. Common areas of

needs included those for free treatment, reimbursement of medical expenses, financial help, help with work or job reservations, travel concessions, and the need for psychoeducation. Patients expressed the need for travel concessions, disability certificates which would enable them to avail welfare-benefits, and the need for self-help groups, while relatives reported needs in the areas of rehabilitation and help with the stress of caregiving. Not unsurprisingly, the majority of the respondents (79%-100%) reported that they had received little help in these areas. Unlike the CAN-R evaluation, there were no differences between the patients' and relatives' reports.

Correlates of health-care needs (Table 5)

Univariate associations between health-care needs and demographic, clinical and psychosocial variables revealed that the GAF and the WHOQOL-BREF scores demonstrated significant inverse associations with total needs based on relatives' reports, and unmet needs based on reports of both patients and their relatives. Table 5 also includes the results of separate stepwise multiple regression analyses with total needs and unmet needs being the dependent variables in each analysis. The GAF scores, PANSS positive scores, and scores on the psychological-health domain of the WHOQOL-BREF explained about 25% variance in the total needs scores (GAF scores - 18%; PANSS positive scores - 5%;

Table 3 Health-care needs of patients on the Camberwell Assessment of Need-Research version - as reported by their relatives

	Bipolar disorder <i>n</i> = 150			Schizophrenia <i>n</i> = 75			<i>t</i> values
Total needs	6.72 (3.19)			8.36 (2.91)			3.37 ^f
Met needs	4.15 (2.34)			4.99 (2.18)			2.57 ^a
Unmet needs	2.57 (2.31)			3.37 (2.58)			2.37 ^a
Domains	Total needs	Met needs	Unmet needs	Total needs	Met needs	Unmet needs	χ^2 values
Accommodation	12 (8)	11 (7)	1 (1)	15 (20)	13 (17)	3 (4)	6.82 ^b
Food	32 (21)	30 (20)	2 (1)	23 (31)	20 (27)	3 (4)	2.35
Household skills	103 (69)	90 (60)	13 (9)	63 (84)	56 (75)	7 (9)	6.07 ^a
Self-care	36 (24)	31 (21)	5 (3)	25 (33)	19 (25)	6 (8)	2.20
Daytime activities	77 (51)	51 (34)	26 (17)	43 (57)	21 (28)	22 (29)	0.72
Physical health	79 (53)	62 (41)	17 (11)	39 (52)	31 (41)	8 (11)	0.01
Psychotic symptoms	47 (31)	37 (25)	10 (7)	69 (92)	59 (79)	10 (13)	73.68 ^f
Information about condition and treatment	106 (71)	62 (41)	44 (29)	60 (80)	17 (23)	43 (57)	2.25 ⁱ
Psychological distress	87 (58)	70 (47)	17 (11)	49 (65)	39 (52)	10 (13)	1.12
Safety to self	8 (5)	8 (5)	0 (0)	6 (8)	5 (7)	1 (1)	0.61
Safety to others	31 (21)	19 (13)	12 (8)	14 (19)	9 (12)	5 (7)	0.12
Alcohol	11 (7)	8 (5)	3 (2)	2 (3)	2 (3)	0 (0)	1.23
Drugs	18 (12)	5 (3)	13 (9)	4 (5)	2 (3)	2 (3)	1.82
Company	83 (55)	37 (25)	46 (31)	45 (60)	18 (24)	27 (36)	0.44
Intimate relationships	25 (17)	10 (7)	15 (10)	12 (16)	3 (4)	9 (6)	0.02
Sexual expression	13 (9)	5 (3)	8 (5)	2 (3)	0 (0)	2 (3)	2.01
Child care	25 (17)	20 (13)	5 (3)	12 (16)	8 (11)	4 (5)	0.02
Basic education	8 (5)	5 (3)	3 (2)	7 (9)	6 (8)	1 (1)	1.28
Telephone	34 (23)	28 (19)	6 (4)	25 (33)	21 (28)	4 (5)	2.94
Transport	26 (17)	13 (9)	13 (9)	24 (32)	14 (19)	10 (13)	6.22 ^a
Money	31 (21)	20 (13)	11 (7)	24 (32)	10 (13)	14 (19)	3.47
Welfare benefits	117 (78)	1 (1)	116 (77)	66 (88)	1 (1)	65 (87)	3.29

^a*P* < 0.05; ^b*P* < 0.01; ^f*P* < 0.001: Comparisons between BD and schizophrenia on total, met and unmet needs and different types of needs. ⁱBetween A significantly greater proportion of relatives than patients with schizophrenia reported that needs in the area of information about the condition and its treatment were unmet ($\chi^2 = 13.79$; *P* < 0.01). BD: Bipolar disorder.

WHOQOL-BREF psychological-health domain scores - 2%) according to relatives' reports. The same variables explained about 28% to 35% of the variance in unmet needs scores according to patients' or relatives' reports, with 22% to 29% of the variance being explained by the GAF scores alone.

DISCUSSION

There could be two possible reasons for carrying out assessments of health-care needs in any group of patients^[4,7,8]. Firstly, the needs elicited serve as a comprehensive index of the psychosocial outcome of the disorder. Secondly, such assessments provide a picture of needs from the perspective of patients and their relatives, indicating areas that could be targeted to improve the outcome of the disorder. The results of this study provide information particularly for remitted patients with BD on these two aspects.

Health-care needs among patients with BD according to patients

The average number of total needs reported by the patients themselves on the CAN-R was about six, which fell within the range of 4 to 10 needs reported by patients with severe mental illnesses on the CAN-R^[18,20-22]. Though comparison with other studies was difficult because of differences in patient-samples, methodology and assessment instruments, the mean

number of total needs among patients with BD of the present study was quite similar to previous reports of patients with either BD^[23-25], or severe mental illnesses including BD^[9,18,22,26-28]. Combining the findings of the CAN-R and the scale for additional evaluation of needs suggested that needs were most frequently expressed in three or four broad clusters. The commonest of these were economic and welfare needs including needs for welfare-benefits, free treatment, financial help, travel concessions or disability benefits and help with obtaining jobs. The second group consisted of the need for information about the condition and its treatment, and for psychoeducational programmes for meeting this need. The third group consisted of social needs such as the need for help with household skills and help with psychological distress, the need for company and help with daytime activities, and the need for self-help facilities to cater to these social needs. Finally, physical health needs and the need for treatment of psychotic symptoms were also commonly expressed. The pattern of needs reported by patients of the current study was broadly similar to the ones reported by other studies of BD, which have found that needs are most frequently expressed in social, treatment, informational, and economic or welfare domains^[9,23-25].

On the CAN-R a majority of the patients and relatives reported their needs to have been met. Nevertheless, needs in the areas of economic and welfare-benefits, information, company, daytime activities and physical

Table 4 Additional areas of needs: Patients' and relatives' reports¹

	Bipolar disorder-mean (SD) (n = 150)	Schizophrenia-mean (SD) (n = 75)		t values		
Needs of patients reported by patients						
Total needs	2.39 (1.87)	3.08 (2.08)		2.52 ^a		
Met needs	0.23 (0.61)	0.27 (0.64)		0.38		
Unmet needs	2.15 (1.73)	2.81 (1.9)		2.6 ^a		
Needs of patients reported by relatives						
Total needs	2.67 (2.26)	3.33 (2.13)		2.13 ^a		
Met needs	0.19 (0.49)	0.48 (1.37)		2.29 ^a		
Unmet needs	2.47 (2.09)	2.85 (1.82)		1.34		
		Patients		Relatives		
Seven common areas of additional needs-bipolar disorder (n = 150)	Total needs	Met needs	Unmet needs	Total needs	Met needs	Unmet needs
Free treatment	69	4	65	4	65	70
Medical reimbursement	56	3	53	3	53	67
Job reservations/occupational help	42	1	41	1	41	44
Financial help	35	4	31	4	31	44
Psychoeducation	30	10	20	10	20	29
Travel concessions	20	2	18	2	18	24
Patient groups, clubs, societies	17	0	17	0	17	22
Seven common areas of additional needs - schizophrenia (n = 75)						
Medical reimbursement	53	0	53	50	1	49
Free treatment	44	0	44	48	1	47
Job reservations/occupational help	35	1	34	32	4	28
Financial help	28	1	27	30	1	29
Psychoeducation	19	6	13	15	7	8
Travel concessions	12	0	12	15	2	13
Certification needs	11	1	10	11	4	7

^aP < 0.05: Comparisons between BD and schizophrenia on total, met and unmet needs and different types of needs. ¹This additional evaluation was carried out using an instrument designed to cover those areas of needs not specifically covered by the CAN-R; it had 21 areas with a format similar to the CAN-R; only results pertaining to the seven most common needs are depicted. CAN-R: Camberwell Assessment of Need-Research version; BD: Bipolar disorder.

health-care needs were largely perceived as being unmet, and participants were mostly dissatisfied with the help received from the health-care services. In other areas patients received help from friends and family; therefore, these needs were reported as being met, and patients were satisfied with the help received. The additional evaluation also confirmed that economic, welfare and information needs were the ones most likely to remain unmet. The proportion of met vs unmet needs and the types of unmet needs in this study were very similar to several Indian studies, which have assessed health-care needs among patients with severe mental illnesses including schizophrenia and BD^[18,22,25,29-31]. The pattern of primacy of economic and welfare needs in Indian studies is also quite unlike the pattern of needs reported in Western studies, where a greater amount of help and benefits are usually received from health-care services; therefore, social needs are more often unmet than economic, welfare or treatment needs^[7,24,32-35]. These differences clearly reflect the inadequate support that patients receive from formal health-care services in India, which forces them to turn to their family and friends to fulfil their needs^[18,22,26]. They also emphasize the fact that socio-cultural factors such as the pre-eminence of the family in providing care, and the limited reach of the local health-care services probably have a greater bearing on the pattern of needs, particularly

unmet ones, than other factors such as the type of psychiatric disorder^[20,36,37].

Comparison of health-care needs between patients with BD and schizophrenia

That the type of psychiatric disorder has minimal influence on expressed needs was endorsed by other results of this study, which indicated that there were very few differences between patients with BD or schizophrenia in most aspects of health-care needs assessed. Nevertheless, the total number of needs, the number of met and unmet needs, and needs in the domains of company, financial help, transport and telephones were all significantly higher for schizophrenia. This was a consistent finding on the CAN-R as well as the additional evaluation of needs and across reports of both patients and their relatives. This was probably because patients with schizophrenia had greater levels of residual psychopathology even in their remitted stage than patients with BD. The fact that patients with schizophrenia reported greater needs in the area of psychotic symptoms, and that the severity of positive psychotic symptoms was associated with the extent of total and unmet needs provided further support for the notion that residual positive symptoms contributed to the greater number of needs in schizophrenia^[30]. However, apart from these differences, the pattern of

Table 5 Correlates of health-care needs^{1,2}

Univariate associations	CAN-R scores as per patients' reports (<i>n</i> = 225)			CAN-R scores as per caregivers' reports (<i>n</i> = 225)		
	Met needs	Unmet needs	Total needs	Met needs	Unmet needs	Total needs
Duration of illness	-0.237					
GAF scores		-0.422			-0.553	-0.443
WHOQOL total scores		-0.294			-0.367	-0.306
WHOQOL general		-0.288			-0.276	-0.306
WHOQOL physical health					-0.300	
WHOQOL psychological		-0.267			-0.287	-0.295
WHOQOL social relationship		-0.287			-0.304	-0.249
WHOQOL environment					-0.337	-0.242
Multiple regression analyses						
	Unmet needs - patients' reports			Unmet needs - relatives' reports		
	R square	Adjusted R square		R square	Adjusted R square	
GAF	0.203	0.199		0.291	0.288	
GAF, PANSS positive	0.270	0.264		0.340	0.334	
GAF, PANSS positive, Psychological Health domain of WHOQOL- BREF	0.293	0.283		0.361	0.353	
				Total needs - relatives' reports		
GAF				0.182	0.178	
GAF, PANSS positive				0.236	0.229	
GAF, PANSS positive, Psychological Health domain of WHOQOL- BREF				0.258	0.248	

¹Pearson's Product Moment Correlation coefficients or Spearman's Rank Correlation coefficients; ²Only those significant associations that persisted after adjusting for multiple correlations using Bonferroni correction are depicted. Bonferroni value = 0.05/60 = 0.00083. CAN-R: Camberwell Assessment of Need-Research version; GAF: Global Assessment of Functioning; WHOQOL-BREF: World Health Organization Quality of Life Bref version; PANSS: Positive and Negative Syndrome Scale for Schizophrenia; BD: Bipolar disorder.

needs including the seven or eight areas where needs were commonly expressed, either on the CAN-R or on the additional evaluation were largely similar between the two groups. Other comparisons of health-care needs between schizophrenia and BD have generally reported a similar profile in both disorders^[18,25,27,28], though one study found that patients with affective disorders had higher levels of unmet needs in certain areas^[9].

Health-care needs: Patients vs relatives

Relatives' reports of needs on the CAN-R, including the most common needs, the overall pattern of needs, the proportion of needs met, and the differences between schizophrenia and BD were mostly similar to that of patients. However, for the BD group the number of total needs and unmet needs was significantly higher according to the relatives. Finally, there some differences between patients' and relatives' reports in individual domains of the CAN-R and the type of unmet needs, with relatives usually placing more emphasis on social and informational needs than the patients themselves. This was in line with most of the previous research on the subject, which has indicated that relatives generally report greater number of needs, and/or their perceptions regarding areas of need differ from those of patients^[9,36,38,39]. Differing views of needs among patients and relatives could be a consequence of the additional component of caregiver-burden that relatives have to face, since certain studies have found that a higher level of caregiver-burden is usually associated

with higher levels of expressed needs and differences in the types of needs reported by relatives^[9,40].

Correlates of health-care needs

The level of patient-functioning emerged as the single most important correlate of health-care needs, particularly unmet needs among both patient groups. This was similar to earlier reports of a positive association between greater number of needs and higher levels of dysfunction^[7,18,21,29,33]. Moreover, the associations between needs and functioning, between needs and residual symptoms and between needs and QOL also underlined the fact the extent and pattern of needs was a useful index of the overall psychosocial status of remitted patients with BD or schizophrenia^[6,7,33,34,41,42].

Limitations

The findings of this study need to be viewed in the context of its methodological limitations. Principal among these was that it was a hospital-based study of remitted patients from a single centre; this hinders the generalization of its results to other patient populations with differing clinical profiles. Moreover, though the CAN-R has been used among Indian patients it is yet to be properly validated in Indian settings, particularly among patients with BD. The fact that the additional evaluation carried out using a self-designed instrument yielded somewhat different findings suggests that the CAN-R might need some modifications before being used among Indian patients.

Conclusions

These methodological lacunae notwithstanding, several findings of this study may be of relatively novel significance. Firstly, patients with BD even when they were in remission had wide ranging health-care needs, many of which were unmet. Impaired functioning, residual symptoms and QOL emerged as the principal mediators of total and unmet needs. Thus, the presence of unmet health-care needs is an additional marker of the enduring psychosocial impairment characteristic of remitted BD. Accordingly, treatment of BD should place greater emphasis on addressing the unmet needs of patients with BD even after patients achieve remission. Secondly, relatives expressed a somewhat different pattern of needs than patients, which indicates that their input is vital for comprehensive assessment and management of needs in BD. Lastly, despite some differences the overall pattern in which economic and welfare needs superseded treatment and social needs was very similar across BD and schizophrenia. This suggests that socio-cultural and health-service related factors have a relatively greater impact on the pattern of needs than diagnostic categories. Though examination of health-care needs in BD remains a priority area for further research, it is equally important for future studies to incorporate the socio-cultural context while examining health-care needs of remitted BD, since this appears to be the appropriate way to improve the treatment and outcome of BD.

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COMMENTS

Background

Elicitation of health-care needs in any group of patients serves as a comprehensive index of the psychosocial outcome of the disorder. Such assessments also provide a picture of needs from the perspective of patients and their relatives indicating areas that could be targeted to improve the outcome of the disorder. Despite the obvious implications of examining health-care needs of patients, very few studies have chosen to focus exclusively on examining needs among patients with bipolar disorder (BD), particularly during phases of remission. This contrasts with the large amount of literature available on needs of patients with schizophrenia.

Research frontiers

The type of health-care needs is heavily dependent on the socio-cultural setting and the nature and quality of the local health-care services. However, very few studies from developing countries have undertaken comprehensive assessments of health-care needs among patients with mental illnesses. This information is necessary for judicious allocation of resources for treatment of mental illnesses in these countries.

Innovations and breakthroughs

Given the paucity of research in the area, this study attempted to assess health-care needs and their correlates in BD during remission, compared to remitted schizophrenia. The relatively novel findings of this study were: (1) patients with BD even when they were in remission had wide ranging health-care needs,

many of which were unmet; (2) impaired functioning, residual symptoms and quality of life (QOL) emerged as the principal mediators of total and unmet needs; (3) relatives reported more needs than patients and a somewhat different pattern of needs than patients; and (4) despite some differences the overall pattern in which economic and welfare needs superseded treatment and social needs was very similar across BD and schizophrenia indicating that socio-cultural and health-service related factors have a relatively greater impact on the pattern of needs than diagnostic categories.

Applications

The implications of these findings for the treatment of BD are that: (1) the presence of unmet health-care needs is an additional marker of the enduring psychosocial impairment characteristic of remitted BD; accordingly, treatment of BD should place greater emphasis on addressing the unmet needs of patients with BD even after patients achieve remission; (2) the input provided by relatives is vital for comprehensive assessment and management of needs in BD; and (3) it is important for future studies to incorporate the socio-cultural context while examining health-care needs in order to improve the treatment and outcome of BD.

Terminology

Health-care needs: The National Health Service and Community Care Act, 1990 defines "need" as the "requirement of the individual to achieve, maintain and restore an acceptable level of social independence and QOL". A health-care need is considered to be present when because of symptoms, distress or disability the subject's level of functioning falls below the optimum, and this is due to some potentially remediable or preventable cause.

Peer-review

The manuscript is relatively well-written and easy to follow.

REFERENCES

- 1 **Torres IJ**, Boudreau VG, Yatham LN. Neuropsychological functioning in euthymic bipolar disorder: a meta-analysis. *Acta Psychiatr Scand Suppl* 2007; **(434)**: 17-26 [PMID: 17688459 DOI: 10.1111/j.1600-0447.2007.01055.x]
- 2 **Sanchez-Moreno J**, Martinez-Aran A, Tabarés-Seisdedos R, Torrent C, Vieta E, Ayuso-Mateos JL. Functioning and disability in bipolar disorder: an extensive review. *Psychother Psychosom* 2009; **78**: 285-297 [PMID: 19602917 DOI: 10.1159/000228249]
- 3 **Judd LL**, Schettler PJ, Akiskal HS, Coryell W, Leon AC, Maser JD, Solomon DA. Residual symptom recovery from major affective episodes in bipolar disorders and rapid episode relapse/recurrence. *Arch Gen Psychiatry* 2008; **65**: 386-394 [PMID: 18391127 DOI: 10.1001/archpsyc.65.4.386]
- 4 **Brewin CR**. Measuring individual needs for care and services. In: Thornicroft G, Brewin, CR, Wing JK. Measuring mental health needs. London: Gaskell-The Royal College of Psychiatrists, 1992: 220-236
- 5 National Health Service and Community Care Act. 1990. Available from: URL: <http://www.legislation.gov.uk/ukpga/1990/19/contents>
- 6 **Slade M**, Leese M, Cahill S, Thornicroft G, Kuipers E. Patient-rated mental health needs and quality of life improvement. *Br J Psychiatry* 2005; **187**: 256-261 [PMID: 16135863 DOI: 10.1192/bjp.187.3.256]
- 7 **Grinshpoon A**, Ponizovsky AM. The relationships between need profiles, clinical symptoms, functioning and the well-being of inpatients with severe mental disorders. *J Eval Clin Pract* 2008; **14**: 218-225 [PMID: 18093104 DOI: 10.1111/j.1365-2753.2007.00836.x]
- 8 **Zúñiga A**, Navarro JB, Lago P, Olivas F, Muray E, Crespo M. Evaluation of needs among patients with severe mental illness. A community study. *Actas Esp Psiquiatr* 2013; **41**: 115-121 [PMID: 23592071]
- 9 **Cleary M**, Hunt GE, Walter G, Freeman A. The patient's view of need and caregiving consequences: a cross-sectional study of inpatients

- with severe mental illness. *J Psychiatr Ment Health Nurs* 2006; **13**: 506-514 [PMID: 16965468 DOI: 10.1111/j.1365-2850.2006.00972.x]
- 10 **Gunnmo P**, Bergman HF. What do individuals with schizophrenia need to increase their well-being. *Int J Qual Stud Health Well-being* 2011; **6** [PMID: 21562628 DOI: 10.3402/qhw.v6i1.5412]
 - 11 **American Psychiatric Association**. Diagnostic and Statistical Manual of Mental Disorders. 4th ed. Washington, DC: American Psychiatric Association, 1994
 - 12 **Sheehan DV**, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, Hergueta T, Baker R, Dunbar GC. The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J Clin Psychiatry* 1998; **59** Suppl 20: 22-33; quiz 34-37 [PMID: 9881538]
 - 13 **Hamilton M**. Development of a rating scale for primary depressive illness. *Br J Soc Clin Psychol* 1967; **6**: 278-296 [PMID: 6080235 DOI: 10.1111/j.2044-8260.1967.tb00530.x]
 - 14 **Young RC**, Biggs JT, Ziegler VE, Meyer DA. A rating scale for mania: reliability, validity and sensitivity. *Br J Psychiatry* 1978; **133**: 429-435 [PMID: 728692 DOI: 10.1192/bjp.133.5.429]
 - 15 **Andreasen NC**, Carpenter WT, Kane JM, Lasser RA, Marder SR, Weinberger DR. Remission in schizophrenia: proposed criteria and rationale for consensus. *Am J Psychiatry* 2005; **162**: 441-449 [PMID: 15741458 DOI: 10.1176/appi.ajp.162.3.441]
 - 16 **Kay SR**, Fiszbein A, Opler LA. The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophr Bull* 1987; **13**: 261-276 [PMID: 3616518 DOI: 10.1093/schbul/13.2.261]
 - 17 **Slade M**, Thornicroft G, Loftus L, Phelan M, Wykes T. CAN: The Camberwell Assessment of need. A comprehensive needs assessment tool for people with severe mental illness. London: Gaskell-The Royal College of Psychiatrists, 1999
 - 18 **Grover S**, Avasthi A, Shah S, Lakdawala B, Chakraborty K, Nebhinani N, Kallivayalil RA, Dalal PK, Sinha V, Khairkar P, Mukerjee DG, Thara R, Behere P, Chauhan N, Thirunavukarasu M, Malhotra S. Indian Psychiatric Society multicentric study on assessment of health-care needs of patients with severe mental illnesses. *Indian J Psychiatry* 2015; **57**: 43-50 [PMID: 25657456 DOI: 10.4103/0019-5545.148520]
 - 19 **Saxena S**, Chandiramani K, Bhargava R. WHOQOL-Hindi: a questionnaire for assessing quality of life in health care settings in India. World Health Organization Quality of Life. *Natl Med J India* 1998; **11**: 160-165 [PMID: 9808970]
 - 20 **Wiersma D**. Needs of people with severe mental illness. *Acta Psychiatr Scand Suppl* 2006; **(429)**: 115-119 [PMID: 16445493 DOI: 10.1111/j.16000447.2005.00728.x]
 - 21 **Guillen-Andres AI**, Munoz ML. Variables related to psychosocial needs among people with severe mental illness using community services and their informal caregivers. *Anuario de Psicología Clínica y de la Salud* 2011; **7**: 15-23
 - 22 **Grover S**, Avasthi A, Shah S, Lakdawala B, Chakraborty K, Nebhinani N, Kallivayalil RA, Dalal PK, Sinha V, Khairkar P, Mukerjee DG, Thara R, Behere P, Chauhan N, Thirunavukarasu M, Malhotra S. Indian Psychiatric Society multicentric study on assessment of health-care needs of patients with severe mental illnesses as perceived by their family caregivers and health-care providers. *Indian J Psychiatry* 2015; **57**: 181-189 [PMID: 26124525 DOI: 10.4103/0019-5545.158185]
 - 23 **Pollack LE**. Informational needs of patients hospitalized for bipolar disorder. *Psychiatr Serv* 1995; **46**: 1191-1194 [PMID: 8564512 DOI: 10.1176/ps.46.11.1191]
 - 24 **Goossens PJ**, Knoppert-van der Klein EA, Kroon H, van Achterberg T. Self-reported care needs of outpatients with a bipolar disorder in the Netherlands. *J Psychiatr Ment Health Nurs* 2007; **14**: 549-557 [PMID: 17718727 DOI: 10.1111/j.1365-2850.2007.01127.x]
 - 25 **Grover S**, Chakrabarti S, Ghormode D, Dutt A. A comparative study of caregivers' perceptions of health-care needs and burden of patients with bipolar affective disorder and schizophrenia. *Nord J Psychiatry* 2015; **69**: 629-636 [PMID: 25928091 DOI: 10.3109/08039488.2015.1033010]
 - 26 **Arvidsson H**. Needs assessed by patients and staff in a Swedish sample of severely mentally ill subjects. *Nord J Psychiatry* 2001; **55**: 311-317 [PMID: 11839121 DOI: 10.1080/080394801317080800]
 - 27 **Simons L**, Petch A. Needs assessment and discharge: a Scottish perspective. *J Psychiatr Ment Health Nurs* 2002; **9**: 435-445 [PMID: 12164906 DOI: 10.1046/j.1365-2850.2002.00506.x]
 - 28 **Najim H**, McCrone P. The Camberwell Assessment of Need: comparison of assessment by staff and patients in an inner-city and a semi-rural community area. *Psychiatric Bull* 2005; **29**: 13-17 [DOI: 10.1192/pb.29.1.13]
 - 29 **Kulhara P**, Avasthi A, Grover S, Sharan P, Sharma P, Malhotra S, Gill S. Needs of Indian schizophrenia patients: an exploratory study from India. *Soc Psychiatry Psychiatr Epidemiol* 2010; **45**: 809-818 [PMID: 19707701 DOI: 10.1007/s00127-009-0126-1]
 - 30 **Ernest S**, Nagarajan G, Jacob KS. Assessment of need of patients with schizophrenia: a study in Vellore, India. *Int J Soc Psychiatry* 2013; **59**: 752-756 [PMID: 22965297 DOI: 10.1177/0020764012456801]
 - 31 **Sahu KK**, Sophia CA, Dharitri R, Kalyanasundaram S. Met and unmet needs of persons with severe mental illness in a half way home. *IJPR* 2010; **15**: 13-22
 - 32 **Hansson L**, Björkman T, Svensson B. The assessment of needs in psychiatric patients. Interrater reliability of the Swedish version of the Camberwell Assessment of Needs instrument and results from a cross-sectional study. *Acta Psychiatr Scand* 1995; **92**: 285-293 [PMID: 8848954 DOI: 10.1111/j.1600-0447.1995.tb09584.x]
 - 33 **Middelboe T**, Mackeprang T, Hansson L, Werdelin G, Karlsson H, Bjarnason O, Bengtsson-Tops A, Dybbro J, Nilsson LL, Sandlund M, Sörgaard KW. The Nordic Study on schizophrenic patients living in the community. Subjective needs and perceived help. *Eur Psychiatry* 2001; **16**: 207-214 [PMID: 11418270 DOI: 10.1016/S0924-9338(01)00566-1]
 - 34 **Ochoa S**, Haro JM, Usall J, Autonell J, Vicens E, Asensio F. Needs and its relation to symptom dimensions in a sample of outpatients with schizophrenia. *Schizophr Res* 2005; **75**: 129-134 [PMID: 15820331 DOI: 10.1016/j.schres.2004.06.002]
 - 35 **Kovess-Masféty V**, Wiersma D, Xavier M, de Almeida JM, Carta MG, Dubuis J, Lacalmontie E, Pellet J, Roelandt JL, Torres-Gonzalez F, Moreno Kustner B, Walsh D. Needs for care among patients with schizophrenia in six European countries: a one-year follow-up study. *Clin Pract Epidemiol Ment Health* 2006; **2**: 22 [PMID: 16965621 DOI: 10.1186/1745-0179-2-22]
 - 36 **Hancock GA**, Reynolds T, Woods B, Thornicroft G, Orrell M. The needs of older people with mental health problems according to the user, the carer, and the staff. *Int J Geriatr Psychiatry* 2003; **18**: 803-811 [PMID: 12949848 DOI: 10.1002/gps.924]
 - 37 **Torres-González F**, Ibanez-Casas I, Saldívia S, Ballester D, Grandón P, Moreno-Küstner B, Xavier M, Gómez-Beneyto M. Unmet needs in the management of schizophrenia. *Neuropsychiatr Dis Treat* 2014; **10**: 97-110 [PMID: 24476630 DOI: 10.2147/NDT.S41063]
 - 38 **Foldemo A**, Bogren L. Need assessment and quality of life in outpatients with schizophrenia: a 5-year follow-up study. *Scand J Caring Sci* 2002; **16**: 393-398 [PMID: 12445109 DOI: 10.1046/j.1471-6712.2002.00107.x]
 - 39 **Foldemo A**, Ek AC, Bogren L. Needs in outpatients with schizophrenia, assessed by the patients themselves and their parents and staff. *Soc Psychiatry Psychiatr Epidemiol* 2004; **39**: 381-385 [PMID: 15133595 DOI: 10.1007/s00127-004-0750-8]
 - 40 **Meijer K**, Schene A, Koeter M, Knudsen HC, Becker T, Thornicroft G, Vázquez-Barquero JL, Tansella M. Needs for care of patients with schizophrenia and the consequences for their informal caregivers- results from the EPSILON multi centre study on schizophrenia. *Soc Psychiatry Psychiatr Epidemiol* 2004; **39**: 251-258 [PMID: 15085325 DOI: 10.1007/s00127-004-0737-5]
 - 41 **Nakanishi M**, Setoya Y, Kodaka M, Makino H, Nishimura A, Yamauchi K, Mimura M, Sato H, Arata H, Yukumi H, Amagasa T, Ueno H, Miyamoto Y, Sugie T, Anzai N. Symptom dimensions and needs of care among patients with schizophrenia in hospital and the community. *Psychiatry Clin Neurosci* 2007; **61**: 495-501 [PMID: 17875027 DOI: 10.1111/j.1440-1819.2007.01698.x]

- 42 **Ruggeri M**, Leese M, Slade M, Bonizzato P, Fontecedro L, Tansella M. Demographic, clinical, social and service variables associated with higher needs for care in community psychiatric service

patients. The South Verona Outcome Project 8. *Soc Psychiatry Psychiatr Epidemiol* 2004; **39**: 60-68 [PMID: 15022048 DOI: 10.1007/s00127-004-0705-0]

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