

# Rate and spectrum of participation impairment in patients with chronic mental disorders: Comparison of self- and expert ratings

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## Abstract

Mental disorders are regularly associated with disability and work absenteeism. Self- and observer appraisal can be distorted when it comes to socio-medical expert reports, e.g. on workability.

In 307 patients with mental illness or psychological problems at general practitioners offices, disability was assessed with the IMET self-rating (Instrument to Measure Impairment in Participation - self-rating) and IMEP physician rating IMET (Instrument to Measure Impairment in Participation - observer-rating), and capacity limitations with the Mini-ICF-APP (Short rating of activities and participation in psychological disorders according to the International Classification of Functioning, Disability and Health). The IMET impairment score is  $M = 4.09$  (range ) and the IMEP score  $M = 3.57$  (range ), reflecting "mild to moderate" impairment; with lowest scores for activities of daily living and highest scores for coping with work and stress. Patients and physician see the same spectrum of disabilities, but patients see themselves as more impaired. Participation restrictions were correlated with capacity limitations. Patients with mental disorders show relevant rates of participation impairment across different areas in life, and especially in relation to work. Patients and physicians have similar but also divergent views and should be seen as complementary.

## Introduction

Mental disorders do not only express themselves in symptoms, but also in disability and especially impairment at work, i.e. "limitations in activities and capacities" and "restrictions in participation" according to the terminology of the International Classification of Functioning, Disability, and Health of the World Health Organization (ICF) [1-3]. Such participation restrictions are often more important for quality of life, stigmatization, or subjective suffering than symptoms per se [4-6]. Impairment in single domains of life can affect others, as it has been shown for the interaction between family and job performance [7-9]. Measurement of impairment must therefore take into account all major areas in life simultaneously. This can be done with the IMET (Instrument to Measure Impairment in Participation - self-rating), which asks for problems in ten areas of life [10-12].

In the assessment of disability a clinical and methodological problem are differences between self- and observer ratings. This is for example the case in patients with depression or anxiety disorders who tend to see more problems in life than there may be and tend to be more negativistic and hopeless towards what they possibly can achieve [13]. This is crucial in the context of evaluations of workability or social benefit claims where subjective judgements may be invalid and influenced by a variety of factors, so that aggravation, or in some contexts also dissimulation can be a problem [14-21]. Therefore, self- and observer ratings should both be taken into account.

In order to study the relation between self and observer ratings of participation impairment the IMEP observer rating scale (Instrument to Measure Impairment in Participation - observer-rating) was developed [22]. It is designed parallel to the IMET self-rating [10-12], in order to allow a comparison of self- and observer ratings.

This study was done in primary health care. This patient population is especially suited to compare subjective and expert ratings of participation impairment in mental disorders, as epidemiological studies have repeatedly shown that about one third of general practice patients is suffering from psychological problems of different types, severity and duration [23].

The question of research is to what degree patients and experts correlate in their ratings on participation impairments. The second question is how illness-related capacity limitations are associated to participation impairment in different domains of life.

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## Methods

### Patients

The study was done in the waiting rooms of 40 general practitioners. In an intake rating 559 out of 1451 patients (aged 18-60) said that they were suffering from chronic mental disorder associated with participation impairment [22]. From these patients, 307 agreed to participate in a comprehensive medical evaluation. There were no differences in regard to the screening measures (gender, age, symptom load) between the 307 patients who participated and the others who qualified for the comprehensive assessment. The assessment included a full medical history, a structured diagnostic interview for mental disorders (M.I.N.I., Mini-International Neuropsychiatric Interview) [26], an assessment of capacity limitations (Mini-ICF-APP, Short rating of activities and participation in psychological disorders according to the International Classification of Functioning, Disability and Health) [24-25], and of participation restrictions (IMET and IMEP, Instrument to Measure Impairment in Participation – self and observer-rating) [11-12]. IMET and IMEP were originally developed in German and the study was done in Germany.

Three hundred and seven patients could be included in the data analysis with full data. There were 70.4 % females. According to the diagnostic algorithms of the standardized MINI Neuropsychiatric Interview [26] 40.8% were suffering from depressive episodes or dysthymia, 30.4% from agoraphobia and/or panic disorders, 18% from adjustment disorders, 11.8% from alcohol or drug abuse, 8.5% from generalized anxiety disorders, and 6.5% from personality disorders. Thirty seven per cent of the patients were fulltime and 20.3 % part-time employed, 2.3% were housewives or –men, 3 % were self-employed, 3% were in vocational rehabilitation, 7.9% were in an apprenticeship, 1% currently off from work because of a baby. 16% were unemployed. 9.5 % got a time limited disability pension and 8.6% had applied for a disability pension. 38.5% were presently on sick leave, on average for 11.9 (SD = 53.13) weeks.

### Instruments

**Participation impairment in self rating, IMET:** The IMET [11-12] is a self-rating instrument for quantifying illness-related participation restrictions. The scale has been designed in analogy to the Pain Disability Index [27]. It presents ten areas of life: 1. Activities of daily living (washing, eating etc.), 2. Activities at home (housework, gardening etc.), 3. Activities outside the home (shopping, driving around etc.), 4. Duties (cleaning up, care of others etc.), 5. Recreational activities (sports, leisure time etc.), 6. Social activities (meeting friends, theater etc.), 7. Close relations (partner, family etc.), 8. Sexual life (quantity and quality), 9. Coping with stress, 10. Work and professional activities. In response to the statement: „In the following area of life I am impaired because of my present state of health“, the patient is asked to make a rating on a visual analogue scale, ranging from 0 = no impairment to 10 = no activity possible any more.

**Participation impairment in observer rating, IMEP:** The IMEP observer rating for participation impairment has been designed parallel to the IMET [22]. The rater (e.g. physician) is asked: „There is a participation restriction in respect to the following area of life due to the present state of health“. The answer is given on a visual analogue scale from 0 = no impairment to 10 = full impairment, i.e. no activity is possible in this area of life. In this study, the rating was done by a research physician. He based his judgment on all available information which he had gathered during the clinical and standardized examinations.

**Capacity impairment, Mini-ICF-APP:** The Mini-ICF-APP [24-25] is an observer rating instrument to measure limitations of capacity in the context of mental disorders in reference to the ICF, and building on definitions of the Groningen Social Disabilities Schedule [28]. There are 13 capacity dimensions: (1) adherence to regulations, (2) planning and structuring of tasks, (3) flexibility, (4) professional competency, (5) judgements, (6) endurance, (7) assertiveness, (8) contact with others, (9) group integration (10) intimate relationships, (11) spontaneous activities, (12) self-care, (13), mobility. Rating is made on a five-point Likert-scale: 0 = no impairment, 1 = mild impairment without problems in the environmental context, 2 = moderate impairment causing problems in the environment, 3 = severe impairment causing problems and the necessity for assistance by others, 4 = full impairment and exemption from all respective duties. Anchor definitions for each item are provided in a rating manual. The rating is based on all available information including self report, case record, and observation from the interview situation. The rating was done with reference to the present life context of the patient. The research physicians was well trained in the scale as he had to use this instrument also in his daily clinical routine.

**M.I.N.I.:** The „Mini International Neuropsychiatric Interview“ is an internationally evaluated and often used standardized instrument to make research diagnoses for the full range of mental disorders according to DSM-IV [24-29].

The study has been approved by the ethical committee of the Charité University Medicine Berlin (Ea4/097/09)

## Results

### Rank order and degree of participation impairment

The average global participation impairment was  $M = 4.09$  (SD = 2.05; Range = 0.2-9.5) in the self-rating IMET and  $M = 3.57$  (SD = 1.62; Range: 0.4-8.0) in the observer rating IMEP. This can be interpreted as „mild to moderate“ overall impairment. Cronbach's Alpha (IMET = 0.89; IMEP = 0.88) showed that the total scores can be interpreted as general measure of global participation restriction. Still, there were marked differences in the degree of participation impairment in different areas of life. According to the IMEP a score of five and above, which indicates severe impairment, was found work and professional activities in 56.6% of the patients, for coping with stress in 52.4%, for recreational activities in 43.3%, for sexual life in 34.1%, for social activities in 33.2%, daily duties in 32.9%, for close relations in 30.3%, activities at home in 16.6%, for outside home activities in 16.6%, and for activities of daily living in 8.5%.

Table 1 shows the rank order, the range, means and differences between means for all items of the participation impairments according to the self-rating (IMET) and observer rating (IMEP). The lowest scores, i.e. the lowest impairment was found in self and observer rating for activities of daily living (1.98 or 1.14, meaning „not at all“), activities at home (3.08 or 2.25), and outside the home activities (3.08 or 2.59, meaning „mild“) in both the self- and observer rating. The highest scores were seen for coping with stress (5.59 or 5.24) and for work (5.59 or 5.35, meaning „moderate to severe“).

The rank order of items is almost similar in the self and observer rating. Patient and observer ratings were significantly correlated across all dimensions of participation. But, there were significant differences between means. The patient self-ratings were throughout significantly higher than the observer-ratings of participation impairment. Patients used the full range of the visual analogue scale, while in the observer

**Table 1.** Participation impairment in self and observer rating in patients with chronic mental disorders ( $N = 306$ ). Mean (M), standard deviation (SD), range, rank, item-scale-correlation ( $r_s$ ) of IMET and IMEP

Item	Self-rating IMET M (SD) [Rank]	Observer rating IMEP M (SD) [Rank]	Difference between means of self and observer rating IMET and IMEP t-Test ( $p$ )	Correlation self and observer rating IMET / IMEP (*** $p < 0.001$ )
Activities of daily living	1.98 (2.45) [1]	1.14 (1.95) [1]	0.84 (0.000**)	0.290**
Activities at home	3.08 (2.65) [2]	2.25 (2.38) [2]	0.83 (0.000**)	0.440**
Outside the home activities	3.08 (2.72) [2]	2.59 (2.32) [3]	0.49 (0.002**)	0.426**
Duties	4.31 (2.65) [5]	3.62 (2.29) [6]	0.69 (0.000**)	0.266**
Recreational activities	4.45 (2.86) [7]	4.29 (2.15) [8]	0.16 (0.319)	0.317**
Social activities	4.42 (2.85) [6]	3.92 (2.17) [7]	0.50 (0.002**)	0.401**
Close relations	3.90 (3.00) [4]	3.52 (2.43) [4]	0.38 (0.023**)	0.436**
Sexual life	4.60 (3.53) [8]	3.74 (3.12) [5]	0.86 (0.000**)	0.467**
Stress	5.48 (2.58) [9]	5.242 (1.91) [9]	0.24 (0.123)	0.241**
Work and professional activities	5.59 (2.87) [10]	5.35 (2.32) [10]	0.24 (0.058**)	0.472**
Global score	4.09 (2.05) 0.2-9.5	3.57 (1.61) 0.4-8.0	0.52 (0.000**)	0.512***

rating this was only the case in two items (sexual life and work). The greatest differences in means between self and observer ratings were found for activities of daily living, activities at home, and sexual life. In these more intimate areas of life the patients themselves tended to see more pronounced impairment than the physician. The smallest differences can be seen in recreational activities, coping with stress, and work.

### Capacity disorders and participation impairment

Rates of moderate to severe or full capacity impairment according to the Mini-ICF-APP were lowest for self-care (1.3% of patients, Table 2) and competency (6.8%), and highest for endurance (35.8%), flexibility (35.8%), and spontaneous non-work activities (42.0%).

The sum score of the capacity impairment (Mini-ICF-APP) was significantly correlated with the sum score of the IMET ( $r = 0.401$ ,  $p < 0.001$ ) and IMEP ( $r = 0.703$ ,  $p < 0.001$ ). Table 2 shows the correlations between the single items of the IMEP (observer and self-rating) and the Mini-ICF-APP capacity dimensions which vary from  $r = 0.038$  (mobility correlated with impairment in sexual life) to  $r = 0.666^{**}$  (capacity for intimate relationship correlated with impairment in close relations). The capacity dimensions “assertiveness”, “competency”, and “self-care” showed on average the lowest correlations with any participation impairment, in both self- and observer-rating of participation. The capacity dimensions “endurance” and “capacity for carrying out non-work-activities” showed relatively higher correlations with participation impairment, in both self- and observer-ratings. There were other capacity dimensions that affected only participation in specific contexts, e.g. interactional capacities like “contact with others”, “group integration”, or “intimate relationships” which showed correlations with participation impairment in “social activities” and “close relations”, but not with “activities of daily living”.

### Discussion

Patients with persisting mental disorders in general health care are suffering to a considerable degree of participation impairment across

most domains of life. Disability is not only a problem in “severe” mental disorders like schizophrenia, but also in depression or anxiety disorders. Patients suffer from capacity impairment, which then lead to participation impairment in different domains of life. First of all this interferes with activities of work and coping with extraordinary stressors. These are areas of life with the highest demands and lowest tolerance towards impairment, failure or maladaptive behavior [12]. A conclusion is that participation problems at work are a sensitive indicator of disability in general. Our data suggest that it is worthwhile not only to look at work ability alone in vocational rehabilitation, and that persons who claim to be unable to work have also problems in other areas of life [30-31].

The rank order of participation impairments is almost identical in the observer and self rating. This finding indicates that there is a basic agreement between physician and patients concerning the relative severity of participation impairment across different areas in life.

There is a marked difference between patient and physician ratings in respect to the severity of impairment. Patients feel subjectively more impaired than this is perceived by the physician. This phenomenon is well known from studies on symptom perception and presentation, and comparisons of self and observer rating [32-38].

On the basis of our data we cannot decide who is right, whether patients aggravate or observers have a lack of empathy. Problems of other persons may sometimes look less severe than problems one has oneself. Physicians may also have a bias of retrievability and bias of imaginability [39, 40], as problems with activities of daily living, activities at home, and sexual life are not upfront on their agenda. For example, problems with sexual life may be less often openly presented and discussed than problems at work. Expert witnesses should in any case report the subjective view of patients additional to their own judgment, so that third parties may come to their own conclusion.

When dealing with participation impairments it is not enough to look at the global impairment score, but worthwhile to take notice also

**Table 2.** Pearson correlations between observer-ratings in capacity impairment (Mini-ICF-APP dimensions) and observer- (IMEP) or self-rating (IMET) of participation impairment in patients with chronic mental disorders ( $N = 306$ ). (In brackets correlations between IMET self-rating and Mini-ICF dimensions). Level of significance, 2-sided: \*\* $p < 0.05$ , \* $p < 0.01$ 

Participation impairment IMEP (IMET)	Capacity impairment MINI-ICF-APP												
	Adherence to regulations	Planning structuring tasks	Flexibility	(Professional) Competence	Judgment and decision making	Endurance	Assertiveness	Contact with others	Group integration	Intimate relationship	Spontaneous (non-work) activities	Self care	Mobility
Activities of daily living	0.314** (0.149**)	0.223** (0.146*)	0.212** (0.244**)	0.151** (0.089)	0.202** (0.145*)	0.334** (0.242**)	0.042 (0.168**)	0.098 (0.183**)	0.088 (0.124*)	0.130* (0.105)	0.284** (0.208**)	0.275** (0.054)	0.194** (0.233**)
Activities at home	0.355** (0.131*)	0.367** (0.217**)	0.269** (0.226**)	0.180** (0.121*)	0.237** (0.162**)	0.470** (0.293**)	0.040 (0.086)	0.177** (0.240**)	0.189** (0.119*)	0.174** (0.188**)	0.366** (0.230**)	0.238** (0.076)	0.165** (0.163**)
Outside the home activities	0.447** (0.216**)	0.335** (0.128*)	0.551** (0.308**)	0.256** (0.063)	0.387** (0.180**)	0.441** (0.254**)	0.120* (0.136*)	0.199** (0.217**)	0.221** (0.163**)	0.175** (0.125*)	0.396** (0.235**)	0.214** (0.038)	0.489** (0.355**)
Duties	0.384** (0.041)	0.377** (0.136*)	0.491** (0.207**)	0.298** (0.085)	0.403** (0.161**)	0.527** (0.258**)	0.237** (0.110)	0.233** (0.106)	0.284** (0.067)	0.186** (0.056)	0.357** (0.204**)	0.218** (0.033)	0.362** (0.177**)
Recreational activities	0.320** (0.168**)	0.419** (0.168**)	0.392** (0.173**)	0.199** (0.083)	0.414** (0.183**)	0.419** (0.237**)	0.192** (0.074)	0.194** (0.218**)	0.185** (0.091)	0.236** (0.159**)	0.602** (0.215**)	0.206** (0.088)	0.235** (0.113*)
Social activities	0.398** (0.245**)	0.429** (0.236**)	0.454** (0.284**)	0.202** (0.117*)	0.448** (0.230**)	0.387** (0.292**)	0.288** (0.129*)	0.407** (0.287**)	0.347** (0.201**)	0.365** (0.253**)	0.620** (0.310**)	0.220** (0.151**)	0.247** (0.134*)
Close relations	0.301** (0.170**)	0.375** (0.228**)	0.383** (0.184**)	0.175** (0.101)	0.404** (0.251**)	0.308** (0.242**)	0.336** (0.192**)	0.539** (0.330**)	0.473** (0.206**)	0.666** (0.387**)	0.499** (0.326**)	0.217** (0.125*)	0.124* (0.048)
Sexual life	0.229** (0.121*)	0.248** (0.181**)	0.212** (0.189**)	0.093 (0.113)	0.209** (0.220**)	0.336** (0.256**)	0.183** (0.147*)	0.223** (0.245**)	0.151** (0.103)	0.265** (0.234**)	0.346** (0.225**)	0.087 (0.037)	0.100 (0.038)
Stress	0.274** (0.113*)	0.347** (0.230**)	0.359** (0.188**)	0.249** (0.144*)	0.386** (0.272**)	0.314** (0.240**)	0.308** (0.105)	0.267** (0.168**)	0.271** (0.113*)	0.254** (0.149**)	0.322** (0.169**)	0.123* (0.054)	0.142* (0.130*)
Work	0.372** (0.183**)	0.374** (0.196**)	0.502** (0.303**)	0.377** (0.209**)	0.453** (0.273**)	0.554** (0.338**)	0.250** (0.130*)	0.215** (0.136*)	0.261** (0.089)	0.158** (0.130*)	0.351** (0.133*)	0.185** (0.080)	0.227** (0.193**)
Percentage of patients with moderate to severe or full capacity impairment (rating 2-4)	12.7 %	18.9 %	35.8 %	6.8 %	31.5 %	35.8 %	25.4 %	23.4 %	18.3 %	26.4 %	42.0 %	1.3 %	14.9 %

of differences between areas in life. This is especially true as the ranking by both patients and physicians shows that different areas of life are of different importance, as has also been found in earlier research [12].

Participation impairments are related to capacity limitations. Capacity limitations are the link between symptoms of illness on one hand and participation impairment on the other hand [21, 24]. As the assessment of capacity limitations is also an observer rating this can be one explanation that the correlations are higher with the IMEP observer rating than the IMET self rating of participation impairment. Different capacities differently affect different areas of life. This suggests that in the planning and the process of rehabilitation different capacities and areas of life need different diagnostic approaches and therapeutic actions.

## Conclusion

Physicians and other health care providers must be aware of disability beyond the primary symptoms of illness and must provide treatment which focusses on symptom alleviation, but also on reducing disability by training capacities, or finding ways for improving participation by changes in context, like workplace adjustment or social help [22,41-44].

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## Conflict of interest

All of the authors declare no conflicts of interest in this paper.

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