

EssenCES, a short questionnaire for assessing the social climate of forensic psychiatric wards

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ABSTRACT

Background A supportive ward atmosphere is considered by many to be a precondition for successful treatment in forensic psychiatry, but there is a clear need for a valid and economic climate evaluation instrument.

Aims To validate a short questionnaire, designed for assessing forensic psychiatric wards. Climate dimensions measured with the 'Essen Climate Evaluation Schema' (EssenCES) are 'Therapeutic Hold', 'Patients' Cohesion and Mutual Support' and 'Safety' (versus threat of aggression and violence).

Method In 17 forensic mental hospitals in Germany, patients and staff completed the EssenCES and other questionnaires. Problematic events were recorded over a period of 3 weeks on each ward.

Results The anticipated three factor structure of the instrument was confirmed. The pattern of correlations also provided support for the validity of the subscales.

Conclusions The climate questionnaire is an economic and valid instrument for assessing the ward atmosphere in forensic psychiatry. Findings from a pilot study in England give confidence to the structural validity of the English version too. Copyright © 2008 John Wiley & Sons, Ltd.

Introduction

The social climate of psychiatric wards and other treatment settings has frequently been discussed as an important factor influencing patients' or clients' wellbeing and treatment outcome (Moos, 1974; Middelboe et al., 2001). Rudolf

H. Moos has widely contributed to this field of research. The latter author's social climate scales are well known and have been used in a number of major studies (e.g. Moos and Houts, 1968; Moos, 1973, 1975). The Ward Atmosphere Scale (WAS) (Moos and Houts, 1968) has been considered the standard instrument for assessing the climate of psychiatric wards in the past. Moos' scales have stimulated empirical investigation of social climates and helped to operationalize important theoretical constructs in the field.

There have also, however, been critiques of the measure, mainly in relation to its statistical properties. The WAS comprises 100 items, meant to assess 10 features or aspects of the social climate. These features group into three higher order dimensions, titled 'relationship dimensions', 'personal growth dimensions' and 'system maintenance dimensions'. Rossberg and Friis (2003a) point out that the phraseology of WAS items was established in the late 1960s and that, because conditions in psychiatric institutions have changed considerably since then, some of the items seem outdated (e.g. 'One may interrupt the doctor'). Another point of criticism is that a 100 item questionnaire is not economic in terms of the time required to complete items. This can cause drop-out and missing data, particularly among acutely disturbed patients (Middelboe et al., 2001) or people with low motivation, and render repeated use for measures of change too arduous.

The main criticism bears on the trait structure of the WAS. Factor analysis was not used to develop the instrument's subscales. It has not been possible to confirm a 10 trait structure of the construct 'ward atmosphere' by statistical means. WAS subscale scores show considerable inter-correlation, and several subscales do not achieve a satisfactory internal consistency (e.g. Moos, 1974, p. 42). Hence, Rossberg and Friis (2003a, 2003b) suggested a revision of the WAS by removing 23 items, but they retained the original complex 10 trait structure. Psychometric properties are somewhat better for their revised version, but the subscales' mean internal consistency (average coefficient Cronbach's α) remains as low as 0.63, and one fifth of the scale's inter-correlations exceeds 0.60. Other authors have suggested that a social environment can be adequately described on three to four dimensions. A theoretically based model postulating a much more complicated trait structure may not be necessary (Engel et al., 1983; Rey, 1985).

Developing a screening instrument

In previous studies of patients' motivation for treatment and of employees' job stress in forensic psychiatric services in Germany, it was clear that ward climate was an indispensable construct (Schalast, 1997, 2000, in press). The German version of the WAS could be thought to be the instrument of choice to capture the construct, but it also appeared uneconomic and failed to assess one essential aspect of climate in forensic settings adequately: perceived safety, that is, freedom from threat of aggression and violence. For a series of three studies, lists of possible items were framed to assess specific aspects of the perceived ward climate.

Scale and factor analyses were used to select appropriate items and to identify climate traits stable across different samples of patients and staff. The objective of the statistical processing in these studies was to identify a small number of climate characteristics which appear obviously relevant in different clinical and institutional settings and can be assessed by scales which are robust and homogeneous in different samples.

Finally, a 15 item instrument was designed, measuring three climate features, each with five items. The three dimensions are: Therapeutic Hold, Patients' Cohesion and Mutual Support, and Experienced Safety. Whilst there is no sophisticated theoretical background to the questionnaire's dimensional structure, these three dimensions appear to have considerable face and empirical validity:

- To experience a minimum level of 'therapeutic hold' seems to be an essential feature of any therapeutic setting and relationship (Rogers, 1961).
- 'Patients' cohesion and mutual support' indicates whether characteristics of a 'therapeutic community' (Kelly et al., 2004) could be approximated on a ward. In group psychotherapy, patients' cohesion is strongly linked to treatment outcome (e.g. Beech and Fordham, 1997).
- 'Safety' reflects a basic human need (Maslow, 1943), and highly effective treatment cannot be imagined in an atmosphere of constant aggressive tension and threat of violence.

Our survey was conducted using a wide range of institutions and wards and had three purposes: to verify the questionnaire's dimensionality, to examine its validity, and to compile preliminary statistical norms for interpreting scale values in forensic mental hospitals in Germany.

Method

Sample and participants

Hospital managers of 20 forensic mental hospitals in Germany were contacted and asked to participate in a study of ward climate. The aim was to include a wide range of ward and hospital conditions, so the managers of each hospital were asked to identify two to three wards for participation in the proposed study which represented a range of therapeutic environments. On each participating ward, a staff member was asked to organize the study.

The survey material – instructions, questionnaires, and envelopes – was mailed to the staff organizer. Support from the researchers was provided by telephone. The staff organizer was asked to motivate 5–8 patients and 5–8 staff on each ward to fill in questionnaires. This seemed sufficient to obtain a climate profile on each ward. There was no further instruction on how to choose these participants. Our priority was not so much to gain a maximum number of completed

questionnaires but to ensure a large variety in the sampling. Confidential and anonymous evaluation was ensured. The organizing staff members for each ward were asked to accept questionnaires in sealed envelopes only and to pass on these envelopes, still sealed, to the project team.

Instruments

All participants filled in the Essen Climate Evaluation Schema (EssenCES). In the standard version of the questionnaire, the 15 valid items are framed by two positively worded items (an 'ice-breaking' and a positively worded concluding item) which are not scored. Items are assessed on five point Likert scales. (At present, German, Dutch, Finnish and English versions of the questionnaire, together with a comprehensive German project report are accessible on the website of the Institute of Forensic Psychiatry in Essen: www.forensik-essen.de.) In addition to EssenCES, other scales and measures were applied. The 'Good Milieu Index' (GMI) was included in every patient's package. The GMI is a simple five item questionnaire, meant to measure general satisfaction with five aspects of the ward milieu (see Rossberg and Friis, 2003a). All staff completed a Job Satisfaction Questionnaire, assessing five aspects of the working environment (Neuberger, 1977).

Two additional questionnaires were each applied only on six arbitrarily chosen wards. On six wards, staff and patients filled in the German version of the WAS (Engel et al., 1983). On six other wards, patients assessed seven aspects of 'Experiences on the Ward' by filling in a German 38 item questionnaire (Sammet and Schauenburg, 1999). To include these long questionnaires for all subjects would have raised the effort for all participants considerably. A large data set was required to compile statistical norms for EssenCES in German clinics; however a sub-sample seemed sufficient to check for correlation of the EssenCES with other questionnaires. (If the EssenCES has good validity, correlation must reach statistical significance even in a small sample.)

A further short ward questionnaire enquired about some basic information for each ward (number of beds and of patients, patients' gender, number of staff and gender, degree of security of the ward, proportion of patients allowed to leave the ward unattended). Over a period of 3 weeks, problematic occurrences (such as drug relapses, severe verbal aggression) were listed and counted on each ward.

Results

Descriptions of participating services

Seventeen of the 20 hospitals approached agreed to co-operate, providing 46 wards which could be included in the survey. Twenty-five of the wards had a focus

on 'general forensic detention and treatment' according to section 63 of the German penal code; 21 wards served as 'forensic addiction treatment units' (section 64). The section 63-measure is used for dangerous offenders mostly suffering from psychosis or a severe personality disorder. Currently, around 6000 patients are in indefinite detention under this legal provision, but subject to review by a judge every year. Section 64 offenders are committed to a treatment when a substance abuse disorder appears as an essential cause of the offending; this provision tends to be time limited, with an average stay of 18 months. Nowadays, about half of the latter patients are returned to prison due to poor treatment response.

Most forensic mental hospital wards in Germany have a medium to high security standard. Generally, the level of security has risen over the last decade. Of the whole sample of patients, 40% were occasionally allowed to leave the institution unattended. On 11 of the wards, not a single patient had permission to do so.

A total of 333 staff completed questionnaires; 143 of them were female; 327 patients took part, most of them (315) were male, as only one of the 46 wards admitted female patients. This distribution is rather typical of forensic mental health patients in Germany, where some of the few female forensic mental health patients are treated in mainstream psychiatric services.

Dimensionality of the climate questionnaire

Factor analysis was used to test the questionnaire's dimensionality, using a principal components analysis followed by varimax rotation as standard procedures. A three factor solution confirmed the postulated dimensions in both staff and patients' samples. Items assigned to one subscale also loaded on one factor: all items attained a loading of at least 0.60 (up to 0.86) on the 'right' factor, and no item reached a loading of 0.40 on a 'wrong' factor (see Table 1).

CITC and internal consistency

In our total sample, Corrected Item Total Correlation (CITC) coefficients ranged from 0.49 to 0.75. A CITC above 0.50 is considered high (Helmstadter, 1964). Rossberg and Friis (2003a) suggested the removal of only items with a CITC of less than 0.20. On that basis, all items appear to be adequate indicators of the aspect they are assigned to.

The internal consistency of a scale is described by Cronbach's α . Scales used for individual assessment (not group comparisons only) should reach a Cronbach's α of 0.70 or higher (Helmstadter, 1964; Rossberg and Friis, 2003a). In our sample the range was from 0.73 to 0.87 (see Table 2).

Table 1: Factor loadings in staff sample (left) and patients' sample (right)

Subscale and item number	Therapeutic Hold	Safety	Patients' Cohesion
Therapeutic Hold 1	0.66 • 0.80	•	•
Safety 1	•	0.77 • 0.69	•
Patients' Cohesion 1	•	•	0.80 • 0.79
Therapeutic Hold 2	0.68 • 0.86	•	•
Safety 2	•	0.84 • 0.75	•
Patients' Cohesion 2	•	•	0.61 • 0.52
Therapeutic Hold 3	0.76 • 0.82	•	•
Safety 3	•	0.63 • 0.72	•
Patients' Cohesion 3	•	•	0.69 • 0.69
Therapeutic Hold 4	0.63 • 0.75	•	•
Safety 4	•	0.67 • 0.61	•
Patients' Cohesion 4	•	•	0.64 • 0.76
Therapeutic Hold 5	0.71 • 0.68	•	•
Safety 5	•	0.75 • 0.72	•
Patients' Cohesion 5	•	•	0.79 • 0.80

Results of a principal component analysis and subsequent varimax rotation in staff sample ($n = 333$) and patients sample ($n = 327$). For clarity of presentation, loadings below 0.40 are omitted. For item content please download EssenCES from <http://www.forensik-essen.de>.

Table 2: Scale's internal consistency (coefficient Cronbach's α)

Scale	Staff ($n = 333$)	Patients ($n = 327$)	Total sample ($n = 660$)
Therapeutic Hold	0.73	0.87	0.86
Safety	0.78	0.79	0.79
Patients' Cohesion	0.76	0.80	0.78

Correlation of EssenCES scores with further variables

Concordance with other questionnaires or variables was calculated. The major findings are summarized in Table 3.

There are a number of plausible and significant coefficients of correlation between 'Therapeutic Hold' and subscales of the GMI, the WAS and the 'Experiences on the Ward' (EW) questionnaire, up to $r = 0.78$ for 'Relationship with staff' (EW). Findings for 'Patients' Cohesion and Mutual Support' were similarly established, with a maximum coefficient of $r = 0.60$ for 'Group climate' (EW). Coefficients of correlation are somewhat lower for the subscale 'Safety', but, in the staff sample, this scale is strongly associated with the number of

Table 3: Correlation of 'EssenCES' subscales with previously established scales

	Therapeutic Hold	Safety	Patients' Cohesion
<i>GMI</i>			
Ward	0.64**	0.33**	0.39**
Patients	0.27**	0.32**	0.54**
Staff	0.62**		
Recognize abilities	0.51**		0.32**
Gain self confidence	0.53**		0.35**
GMI total score	0.69**	0.33**	0.47**
<i>WAS</i>			
Involvement	0.42**	0.25**	0.56**
Support	0.64**		0.47**
Spontaneity	0.47**		0.27**
Autonomy	0.27**		
Practical orientation	0.41**	0.33**	0.31**
Personal problems orientation			0.49**
Anger and aggression	-0.56**	-0.30**	
Order and organization	0.46**	0.30**	0.36**
Programme clarity		0.30**	0.32**
Staff control			
<i>Experiences on the ward</i>			
Relationship to individual therapist	0.49**		
Self efficacy			0.37
Group climate	0.25	0.29	0.62**
Adequacy of rules	0.50**		
Relationship with staff	0.78**	0.26	0.42*
Appropriate intensity of treatment			
Care by fellow patients			0.60**
<i>Number of problematic occurrences</i>			
<i>r</i> with patients' climate assessments		-0.26	
<i>r</i> with staff's climate assessments		-0.62	

*Statistically significant at the 0.05 level (one-tailed).

**Statistically significant at the 0.01 level (one-tailed).

Only coefficients of correlation above ± 0.25 are printed, coefficients from 0.45 are shown in italic typeface.

Good Milieu Index (GMI), completed by all patients ($n = 327$).

Ward Atmosphere Scale (WAS), completed by 59 staff and 43 patients on 6 wards.

Experiences on the Ward, completed by 38 patients on 6 wards.

problematic occurrences on the ward observed in a period of three weeks (-0.62). In the staff sample, however, correlations of the three climate scales with subscales of the 'Job Satisfaction Questionnaire' are low, ranging from 0.02 to 0.24.

For all wards, average climate scores were calculated for staff and patients separately. Table 4 displays coefficients of correlation for these means. Staff climate assessments obviously correlate much more strongly with patients' climate assessments (0.42–0.59) than with staff's job satisfaction (0.02–0.24).

Discussion

'Through the years it has become more and more obvious that the WAS needs a revision' (Rossberg and Friis, 2003a, p. 378). We have questioned, however, if a revision based on the complicated trait structure of the WAS is appropriate. Our intention in designing the EssenCES measure was to construct a short questionnaire with a simple, robust dimensional structure and subscales which seem relevant to staff and patients on forensic psychiatric wards.

A survey on 46 wards was conducted to test the instrument's measurement properties. The factorial structure – interpreted as 'Therapeutic Hold', 'Patients' Cohesion and Mutual Support' and 'Safety' – was confirmed among both staff and patients. Although still significant, Cronbach's α was at its lowest for 'Therapeutic Hold' in the staff sample. Staff members tend to make positive assessments of this aspect of climate, causing some reduction of score variance. It has been observed previously that staff tend to judge wards more positively than do patients (Moos, 1975). In our data, this observation is more clearly confirmed for 'Therapeutic Hold' than for the other two dimensions.

The concordant validity of the instrument, as measured by correlating scale scores with other instruments, was generally very good except for 'Safety'. Nevertheless, this scale shows a strong correlation with the number of problematic occurrences on the ward. The findings confirm our appraisal that the aspect of 'Safety versus threat of aggression and violence' is not represented sufficiently in older ward climate scales. The items of the EssenCES referring to this aspect (e.g. 'Really threatening situations can occur here') display good face validity.

EssenCES scores by staff correlate much more strongly with patients' assessments of the ward climate than with staff's job satisfaction. This can be inter-

Table 4: Correlation between average climate assessments by staff and by patients on 46 forensic wards

Staff assessments	Patients' assessments		
	Therapeutic Hold	Safety	Patients' Cohesion
Therapeutic Hold	0.53**	0.21	0.35**
Safety	0.39**	0.42**	0.22
Patients' Cohesion	0.20	0.13	0.59**

**Statistically significant at the 0.01 level (one-tailed).

puted as good evidence of the discriminant validity of the instrument. The measure is not intended to measure job satisfaction but ward climate, and that is what it does.

EssenCES is a promising scale, but the replicability of the dimensional structure and other statistical features in non-German settings is unknown. A pilot study testing an English translation of the EssenCES has recently been conducted in an English forensic psychiatric institution (Howells and Stacey, 2007). Though the sample ($n = 64$) and the range of ward conditions appeared quite small, the EssenCES scales reached satisfying internal consistencies (Cronbach's α was 0.82 for 'Patients' Cohesion and Mutual Support', 0.74 for 'Safety' and 0.86 for 'Therapeutic Hold'). A number of significant coefficients of correlation supported the subscales' validity, but as for the German version, these coefficients were stronger for 'Therapeutic Hold' and 'Patients' Cohesion and Mutual Support' than for 'Safety'. A more comprehensive validation study of the English version of EssenCES has been initiated.

Conclusions

Our findings demonstrate a valid dimensional structure of the EssenCES questionnaire. There are a number of potential uses for the instrument. Since it is quick and easy to use, it could be used routinely in forensic treatment evaluation studies. Aspects of ward climate or atmosphere should be considered in such studies, as they are potential moderators of treatment effects. It might also be used to monitor the social and therapeutic atmosphere of a ward over a long period of time. It might help to identify problems and development goals of a treatment setting and to evaluate measures to improve them.

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Questionnaires, scoring sheets and further information are accessible at <http://www.forensik-essen.de>.

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