

Running Head: Validation of the English EssenCES

Lost in Translation?: Psychometric Properties and Construct Validity of the English Essen
Climate Evaluation Schema (EssenCES) Social Climate Questionnaire

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Abstract

The social climate of correctional (forensic) settings is likely to have a significant impact on the outcome of treatment and the overall functioning of these units. The Essen Climate Evaluation Schema (EssenCES) provides an objective way of measuring social climate that overcomes the content, length and psychometric limitations of other measures. But, the English translation of the EssenCES has yet to be sufficiently validated for use in forensic settings in the United Kingdom (UK). The current study presents psychometric properties (factor structure and internal consistency) and an examination of construct validity with the English EssenCES. Satisfactory internal consistency was found for all EssenCES scales and the expected three-factor structure was confirmed with both staff and residents and in prison and secure hospital settings using confirmatory factor analysis (CFA). Evidence to support construct validity was established using multi-level models, which showed statistically significant associations between scores on the EssenCES and scores on the Working Environment Scale (WES-10), institutional aggression, and site security. Future validation work and potential practical applications of the EssenCES are discussed.

Keywords: social climate, milieu, ward atmosphere, forensic psychiatric hospital, prison

Lost in Translation?: Psychometric Properties and Construct Validity of the English Essen Climate Evaluation Schema (EssenCES) Social Climate Questionnaire

The notion that clinical and rehabilitative settings have a particular ‘personality’ or ‘feel’ to them is one that has been discussed for some time in the psychological literature (Schalast & Groenewald, 2009). Such aspects of a setting have been described as the “ward atmosphere” or “social climate”, which encompasses the material, social, and emotional conditions of a given psychiatric ward or unit and the interaction between such factors (Moos, 1989). While explored in many contexts (e.g., Moos & Gerst, 1974; Moos & Moos, 1994; Moos & Trickett, 1974), this paper focuses on the application of social climate to correctional (forensic) settings (Moos, 1987).

Numerous studies have been conducted to investigate the social climate of psychiatric and forensic psychiatric settings. Many of these studies demonstrate statistically significant relationships between climate and a variety of clinical and organizational outcomes, including staff and resident satisfaction (Rossberg & Friis, 2004), institutional violence and the frequency of assaults on staff (Friis & Helldin, 1994), staff performance and morale (Moos & Schaefer, 1987), and treatment outcomes such as attitudes towards offending, treatment drop-out, and discharge (Beech & Hamilton-Giachritsis, 2005; Moos, Shelton, & Petty, 1973). Long et al. (2010), for example, found that scores on the EssenCES (a measure of social climate described in more detail below) were significantly and positively correlated with patients’ motivation to engage in treatment, the number of treatment sessions they attended, the extent to which they felt the unit met their needs, and the strength of the patient-therapist therapeutic alliance, with coefficients ranging from .25 to .49. Furthermore, high scores on the EssenCES were

significantly associated with lower levels of behavioral disturbance (as measured by the Overt Aggression Scale, OAS; Yudofsky, Silver, Jackson, Endicott, & Williams, 1986) and fewer episodes of seclusion, with correlation coefficients of -0.29 and -0.46 respectively ¹.

While these studies do not indicate any causal relationship between social climate and clinical/organizational outcomes, they demonstrate that a healthy social climate tends to co-occur with many other positive attributes and outcomes in forensic services. It, therefore, seems important to regularly monitor and assess the social climate of secure settings, as this might provide some insight into how successfully units are functioning. This can be done in either a longitudinal way (where climate is assessed at regular intervals over a period of months or years) or in a time-limited way (where climate is measured before and after some specific intervention or service change) (Tonkin & Howells, in press). Longitudinal monitoring of climate can be used to identify wards/wings that may be at risk of minor and major security incidents, whereas the time-limited monitoring of climate can be used to evaluate the impact of specific service changes (such as moving to a new building, resident/staff re-structuring, or the adoption of a new method of working). Thus, the monitoring of social climate can play an important part in planning and evaluating service delivery within secure units.

Several questionnaire-based measures have been developed to facilitate the monitoring of social climate (Liebling & Arnold, 2004; Schalast, Redies, Collins, Stacey, & Howells, 2008). But, the first and most commonly used questionnaire to be developed was the Ward Atmosphere Scale (WAS; Moos, 1974, 1989) and its forensic version, the Correctional Institutions Environment Scale (CIES; Moos, 1987). Despite the widespread use of these measures, the WAS/CIES have been criticized on various grounds, including that they are too long and cumbersome for repeated clinical use, they include item content that is outdated, several of the

sub-scales lack internal consistency, and that the factor structure has failed to replicate across samples (Rossberg & Friis, 2003a, b; Wright & Boudouris, 1982). In response to these criticisms, Schalast et al. (2008) developed the Essen Climate Evaluation Schema (EssenCES), which was designed to be a short and psychometrically sound alternative to the WAS/CIES.

The EssenCES (originally developed in German but later translated into a variety of languages, including English) measures three aspects of social climate in forensic settings. The Therapeutic Hold (TH) scale measures the extent to which the unit is perceived as supportive of patients'/prisoners' therapeutic needs. For example, how interested staff are in their progress, the extent to which residents feel that they can talk to staff about their problems, and the perceived time and effort that staff offer to residents. The Experienced Safety (ES) scale measures how safe staff and residents feel from the threat of aggression and violence on the unit. This scale is based on the idea that safety is a basic human need (Maslow, 1943) and that without feeling safe it is unlikely that patients/prisoners will be able to foster the positive personal growth that will prevent them from re-offending when released. The Patients'/Prisoners' Cohesion and Mutual Support sub-scale assesses whether residents care for and support each other in a manner that is consistent with the basic principles of a 'therapeutic community' (Kelly, Hill, Boardman, & Overton, 2004). This scale is based on the idea that positive peer support and cohesiveness among residents is a crucial part of successful offender rehabilitation (e.g., Beech & Hamilton-Giachritsis, 2005).

Satisfactory psychometric properties of this new 15-item questionnaire have been demonstrated with a sample of 333 staff and 327 patients from 17 forensic psychiatric hospitals in Germany, including good internal consistency (Cronbach's alpha ranged from .73 to .87 for the three scales), a solid three-factor structure, and construct validity in the form of statistically

significant correlations with other climate-related measures, including the WAS, the Good Milieu Index (GMI), and the Experiences on the Ward questionnaire (Schalast et al., 2008). Also, staff ratings of social climate were negatively associated with the number of problematic occurrences that occurred on wards (such as drug relapses, severe verbal aggression etc.). An adapted version of the EssenCES that is suitable for use in German prison settings has also received validation with a sample of 271 participants from five prisons (Schalast & Groenewald, 2009). There was evidence for internal consistency (alphas ranged from .76 to .85), support for the proposed three-factor structure, and significant correlations between the EssenCES and the CIES.

Furthermore, the English translation of the EssenCES has received preliminary validation for use in high secure forensic psychiatric hospital settings in the United Kingdom (UK) (Howells et al., 2009). In that study, satisfactory internal consistency was found for the three sub-scales (alphas ranged from .72 to .82), the expected three-factor structure was replicated with both patients and staff, and construct validity was demonstrated through statistically significant correlations with the GMI and the Working Environment Scale (WES-10). However, one cross-loading item (PC3) was identified in this study, which has since been amended in an updated version of the EssenCES.

In addition to these three validation studies, there is evidence that the EssenCES can discriminate between wards/units that would theoretically be expected to differ in terms of social climate. For example, both Long et al. (2010) and Fox et al. (2010) showed that social climate was more positive on wards designated as low versus medium security. Theoretically, this is what would be predicted given that there are greater restrictions imposed upon the personal

freedom of residents in low versus medium secure units and that medium secure residents pose a greater risk of violence.

The EssenCES, therefore, seems to be a promising new tool for measuring the social climate of forensic services. However, the English version of the EssenCES has not been validated for use in a wide range of forensic services. It has only received validation for use with personality-disordered patients in high secure hospital settings. Thus, it is unclear whether the EssenCES can be used to measure social climate amongst prisoners, non high secure patients, and non personality-disordered patients. This is particularly problematic when one considers that the EssenCES has recently been adopted by over 30 National Health Service (NHS) providers in the UK as part of the Commissioning for Quality and Innovation (CQUIN) payment framework. Consequently, a proportion of the annual budget that is provided by government to these health organizations is dependent on them administering the EssenCES questionnaire within their units. In practice, this means that hundreds of secure NHS hospitals are currently beginning to administer the EssenCES questionnaire without sufficient evidence to support the reliability and validity of scores obtained using this tool.

There is also an issue relating to the statistical analyses reported in previous validation studies. The analyses conducted so far have assumed that each participant's responses to the questionnaire are independent from the responses of other participants (Kinnear & Gray, 2009). This assumption, however, is incorrect because social climate data are necessarily organized in a hierarchical fashion, with individual staff and residents nested within given wards/wings. Consequently, it is not unreasonable to suggest that individuals from the same ward/wing would have more similar perceptions of the social climate of that specific ward/wing than individuals from different wards/wings (violating the assumption of statistical independence). It is, therefore,

very important to take into account the hierarchical nature of social climate data when examining factor structure and construct validity with the EssenCES (Kinnear & Gray, 2009).

The current paper reports findings from a large-scale validation study of the English EssenCES using a sample of staff, prisoners and patients from a variety of prisons and secure forensic psychiatric hospitals in the UK that contain individuals with varying levels of risk and differing mental health diagnoses. Reported in this paper are the psychometric properties (factor structure and internal consistency) of the EssenCES and an examination of construct validity. Based on previous research one would predict: 1) A negative relationship between scores on the EssenCES and scores on the WES-10, such that a positive social climate is associated with a positive working environment; 2) A negative relationship between scores on the EssenCES and the number of aggressive incidents on a given ward/wing, such that a positive social climate is associated with very few incidents of aggression; and 3) A negative relationship between scores on the EssenCES and the level of site security, such that less security will be associated with a more positive social climate.

Method

Sample

Data were collected from 11 secure forensic services in the UK (see Table 1). A total of 714 individuals agreed to complete the EssenCES (patients, prisoners, and staff). Staff from a variety of professional backgrounds participated, including predominantly nursing staff and prison officers, but also psychologists, psychiatrists, occupational therapists, and senior managerial staff. Familiarity with the ward/wing was a requirement. Specific demographic details, such as age and gender, were not gathered for each participant². On average, 14

individuals per ward/wing completed the EssenCES. Approximately 36% of residents from each site were represented in the current sample and approximately 39% of staff³.

---INSERT TABLE 1 HERE---

Measures

The Essen Climate Evaluation Schema (EssenCES; Schalast et al., 2008) ⁴.

The EssenCES is a 15-item questionnaire that measures three aspects of social climate in forensic services (Therapeutic Hold; Experienced Safety; and Patients'/Prisoners' Cohesion and Mutual Support). Minor variations in wording exist for forensic psychiatric settings and prison settings. Each item is responded to on a five-point Likert-type scale, ranging from *Not at all* (0), to *Little* (1), *Somewhat* (2), *Quite a lot* (3), and *Very much* (4). Scores on each scale can range from 0 to 20. High scores on the EssenCES are indicative of a positive social climate and all items were reversed prior to analyses to reflect this.

Working Environment Scale (WES-10; Rossberg, Eiring, & Friis, 2004).

To contribute to the assessment of construct validity, staff completed the WES-10. The WES-10 measures the perceived opportunity for personal and professional growth at work, the degree of conflict among staff members, the extent to which staff feel nervous about coming to work, and the perceived workload placed on staff. Each item is responded to on a five-point scale, ranging from *Not at all* (4) to *To a very large extent* (0). The total score can range from 0 to 40. A score of 0 indicates a working environment where morale is high and stress low, whereas a score of 40 indicates an environment where staff are in great conflict, they are nervous about coming to work, they feel they have too much work to do, and are unable to fulfill their potential. All items were reversed prior to analyses to reflect this. The Cronbach's alpha (α) coefficient with the current sample was .74.

Institutional aggression.

The number of aggressive incidents recorded during the two months preceding data collection was gathered. A two-month period is similar to that utilized in previous research with the EssenCES (Long et al., 2010).

Procedure

Patients, prisoners and staff at each of the 11 sites were offered the opportunity to participate in the study. If they agreed, they signed a consent form and received the appropriate questionnaire pack for completion. Questionnaires were completed anonymously and a researcher was always available to answer questions.

Statistical Analyses

To control for the hierarchical nature of the data in this study, the factor structure was examined using confirmatory factor analysis (CFA) within the complex survey design function of *Mplus-6* (Muthén & Muthén, 2010) with ward as the unit of cluster. Three different factor structures were fitted: 1) A one-factor model; 2) A three-factor orthogonal model; and 3) A three-factor oblique model. Initially, these three factor structures were fitted to the sample as a whole, but they were also fitted separately to the data from prison versus hospital settings and the data from residents versus staff. This allowed the proposed three-factor structure of the EssenCES to be tested across different types of setting and participant.

The fit of the three models was examined using the comparative fit index (CFI), the Tucker-Lewis index (TLI), the standardized root mean squared residual (SRMSR), and the root mean squared error of approximation (RMSEA). According to Hu and Bentler's (1999) two-index rule, satisfactory model fit is indicated by CFI and TLI values that are approximately .95, a

SRMR value of approximately .08 and a RMSEA value of approximately .06. Together these values tested for errors in both factor structure and factor loading for the three hypothesized factor structures (Hu & Bentler, 1999).

In addition to comparing different types of setting and participant, the data were treated in two different ways when testing factor structure. First, the analyses were conducted specifying the items as ordered categorical variables using a WLSM (weighted least squares using a diagonal weight matrix) estimator with all non-responses classed as missing. Second, the analyses were run using ‘pro-rated’ data, treating the items as continuous using maximum likelihood with robust estimate. The ‘pro-rating’ procedure (Schalast, 2010) is a method for dealing with missing data, which can be a significant problem when administering psychometric tools to forensic populations. If four out of the five items were present for an individual on a single scale the missing item was replaced with the mean for that individual. But, if more than one item were missing per five-item scale all the items for that scale were classed as missing for that participant. These analyses tested whether a comparable factor structure was produced when treating the items as ordered categorical variables versus using the pro-rating procedure. This provided an insight into how missing data should be treated when administering the EssenCES in practice.

Internal consistency was examined using Cronbach’s alpha (α). Separate coefficients were calculated for each EssenCES scale, and the sample was split by estate (prison versus hospital) and participant type (residents versus staff). This allowed the internal consistency of the EssenCES to be assessed separately for different types of setting and participant. Internal consistency was also examined for the sample as a whole. Construct validity was examined using

multi-level random effects models specified in HML-6. The pro-rated data were used for these analyses.

Results

Factor Structure

Initially, the fit of a one-factor model, a three-factor orthogonal model, and a three-factor oblique model was examined using the full dataset ($n = 714$). The findings in Table 2 indicate that both the three-factor oblique and the three-factor orthogonal models demonstrate good fit, both of which are superior to the fit of the one-factor model. However, the oblique model is a marginally better fit than the orthogonal model. Table 3 shows that all items loaded significantly on their target factors. These Tables also show that the model fit, factor structure, and factor loadings were equivalent when the data were treated as pro-rated versus ordered categorical⁵.

---INSERT TABLES 2 AND 3 HERE---

Multiple groups analysis was conducted to examine the fit of the three-factor oblique model to the data from (1) prison versus hospital settings and (2) from residents versus staff. The model was constrained such that factor loadings were equal across groups and the factor error variances and covariance were allowed to vary. The pro-rated data were used for these analyses. The three-factor oblique model demonstrated good fit (Prison versus Hospital: CFI = .95, TLI = .94, SRMR = .07, RMSEA = .06; Residents versus Staff: CFI = .93, TLI = .93, SRMR = .07, RMSEA = .06), which indicates that the factor structure and loadings are equivalent across prison and hospital settings and across staff and residents.

Internal Consistency

A summary of the Cronbach's alpha analyses is presented in Table 4. All scales demonstrated satisfactory internal consistency (Helmstadter, 1964), and there were no instances where the removal of specific items substantially increased alpha.

---INSERT TABLE 4 HERE---

Construct Validity

WES-10.

The relationship between scores on the three EssenCES scales and scores on the WES-10 was examined at level 1 ($n = 389$) with the three mean centered EssenCES scales predicting the total WES-10 score. The results showed that high scores on the TH ($\gamma_{30} = -0.70, p < .001$) and ES ($\gamma_{30} = -0.40, p < .001$) scales were significantly associated with lower scores on the WES-10. The PC scale was not significantly associated with the WES-10 ($\gamma_{30} = -0.14, p = .08$).

Institutional Aggression.

In each model the EssenCES scales acted as the outcome. Whether the respondent was a member of staff (scored 1) or a resident (scored 0) acted as the Level 1 variable (termed occupational position) and was uncentered. Institutional aggression acted as a Level 2 variable and was uncentered, as the frequency data for aggression has a meaningful zero. For these analyses there were 40 Level 2 units and between 524 and 527 Level 1 units.

An initial model examined if the score on each EssenCES scale varied as a function of being a member of staff or a resident (occupational position). If this effect was significant the effect of the ward level variable was explored both as a predictor of the mean level (intercept) of each EssenCES scale and as a cross-level interaction term for the effect of occupational position on each EssenCES scale.

$$\text{Outcome} = \gamma_{00} + \gamma_{01} * (\text{ward level aggression}) + \gamma_{10} * (\text{occupational position}) + \gamma_{11} * (\text{ward aggression} * \text{occupational position}) + u_0 + r$$

Where γ_{00} = the intercept (mean level of the EssenCES scale), γ_{01} = the effect of the ward level variable on the intercept, γ_{10} = the effect of occupational position on the intercept, γ_{11} = the cross level interaction effect of the ward level variable on the relationship between occupational position and the intercept, u_0 = the random error associated with the ward level variable on intercept, and r = the level 1 error.

The results showed that higher levels of ward aggression were associated with lower scores on the PC ($\gamma_{01} = -0.11, p < .01$) and ES scales ($\gamma_{01} = -0.11, p < .05$), but there was no significant effect for TH ($\gamma_{01} = 0.03, p = .44$). Occupational position had a significant effect on ES ($\gamma_{10} = -1.90, p < .001$) and TH ($\gamma_{10} = 3.70, p < .001$), such that staff tended to rate the climate as less safe but more therapeutic than residents. There were no cross-level interactions.

Site Security.

The same model as above was specified except that the effect of aggression (γ_{01} and γ_{11}) was replaced by security level (1 = high and 0 = medium ⁶) and models were run separately for hospitals (29 wards, of which 23 were high security) and prisons (15 wings, of which four were high security).

For the hospitals data, PC was lower in high security settings ($\gamma_{01} = -2.70, p < .05$), but there were no effects of security level on ES ($\gamma_{01} = -1.02, p = .48$) or TH ($\gamma_{01} = -0.90, p < .29$). Also, compared to the residents, staff in hospital settings rated residents as being less cohesive ($\gamma_{10} = -2.40, p < .01$) and the environment as less safe ($\gamma_{10} = -2.38, p < .01$). For the prison data, there was an effect of security level on ES. This was a cross-level moderation of the effect of

occupational position, whereby staff rated ES lower than the residents ($\gamma_{10} = -1.56, p < .01$) and this effect was stronger in high security prisons ($\gamma_{11} = -3.60, p < .05$).

Discussion

The current study has presented findings from a large-scale validation of the English EssenCES social climate questionnaire. Satisfactory internal consistency and the original three-factor structure proposed by Schalast et al. (2008) were confirmed for all EssenCES scales with this sample. Furthermore, these findings were stable with both residents and staff in prisons and secure psychiatric hospitals.

These findings extend those of Howells et al. (2009) to a much wider range of forensic services, including both prisons and secure psychiatric hospital settings that contain individuals with varying mental health diagnoses and levels of risk. The fact that the psychometric properties of the English EssenCES remained stable across such a diverse range of settings and that they are consistent with those reported in previous research (Howells et al., 2009; Schalast & Groenewald, 2009; Schalast et al., 2008) is strong evidence to support the validity of scores obtained using the English EssenCES.

A further strength of the current analyses was that they accounted for the hierarchical nature of social climate data, which is something that previous validation research has not done. The fact that the psychometric properties of the EssenCES remain strong even when tested using different statistical approaches supports the value of the EssenCES as a measure of social climate in forensic settings.

In addition to the evidence supporting internal consistency and factor structure, there was also evidence to support construct validity with the EssenCES. The three hypothesized relationships between climate and working environment, climate and institutional aggression,

and climate and site security were all confirmed to some extent. Staff who rated their ward/wing as safe and therapeutically supportive using the EssenCES also tended to rate their working environment in a positive manner. On wards/wings where there was a high level of aggression, both staff and residents tended to feel less safe and residents were seen to be less cohesive and less supportive of each other. Finally, the residents within more secure hospital settings were rated as less cohesive and supportive of each other than residents from conditions of lesser security, and the residents within more secure prison settings rated their unit as less safe than those from less secure prisons. These findings make sense theoretically and fit with the general pattern of findings observed in previous research using the EssenCES (Fox et al., 2010; Howells et al., 2009; Long et al., 2010; Schalast et al., 2008) and with research using the WAS/CIES (Friis & Helldin, 1994; Langdon, Cosgrave, & Tranah, 2004; Langdon, Swift, & Budd, 2006; Moos & Schaefer, 1987).

A further issue examined in this study was how to deal with missing information, which can be a significant problem among forensic populations who may experience motivation and attention issues that prevent them from completing all items on a given questionnaire. This is an issue that has not received much attention in previous research on social climate within forensic settings, but has been discussed in the wider psychological (Schafer & Graham, 2002) and clinical literature (Haukoos & Newgard, 2007). Different approaches to dealing with missing data were tested, all of which yielded highly comparable factor loadings and factor structure. It can, therefore, be concluded that the pro-rating procedure described in this paper (and recommended by the author of the EssenCES) is a useful procedure for replacing missing items on the EssenCES. But, it is important to recognize that these findings only apply to the

populations tested in this study. Further research is needed before they can be generalized to other populations.

Together, these findings suggest that the EssenCES is a valuable tool for measuring the social climate of secure settings in the UK. As discussed earlier, such measurement can function in a longitudinal way, where the climate of a given unit is monitored at regular intervals for a period of months or years (Tonkin & Howells, in press). This can enable senior managers, clinicians, or security staff to identify wards/wings where the climate is not conducive to the safe and successful rehabilitation of offenders. Having identified 'problematic' wards/wings, staff might be able to implement remedial interventions that are designed to improve the social climate and, therefore, prevent the occurrence of security incidents such as aggression. The fact that the EssenCES measures three different aspects of social climate would allow staff to be more focused in the interventions that they implement. For example, rather than developing generic interventions to improve social climate, staff can develop different interventions that are designed to target the specific issues that are highlighted by the EssenCES.

However, the EssenCES can also be used in a time-limited way to monitor social climate. In this instance, the EssenCES becomes part of a battery of assessments that are used to evaluate the impact of some intervention, which might be the adoption of a new method of working, staff/resident re-structuring, or even the efficacy of a particular treatment program (Tonkin & Howells, in press). When used in this way, the EssenCES would be given out pre-intervention and post-intervention and changes in perceived social climate could be used to examine whether the intervention has had a positive or a negative impact on the unit.

But, before the EssenCES is considered for use in forensic settings, it is important to consider the limitations of this study. Although a wide range of forensic services were included,

there were still certain types of service that were not fully represented in the current sample. In particular, there were no participants from conditions of low security (Categories C and D in the prison service and low secure hospitals in the NHS), nor were there participants from juvenile units. Furthermore, the number of participants from female services was limited ($n = 61$). The EssenCES, therefore, requires further validation with these populations before it can be used in practice.

Also, given the potentially low levels of motivation among forensic populations, another important issue for future research to examine is the number of completed EssenCES questionnaires that are needed to gain a reliable and valid estimate of social climate.

Finally, it was not possible to use a standardized definition of institutional aggression across the 11 sites sampled in this study. This would be expected to impact on the construct validity analyses with these data. However, the lack of a standardized definition would only serve to add noise to the data. Consequently, the chances of finding a statistically significant relationship between social climate and aggression would be decreased rather than increased. It is, therefore, testament to the value of the EssenCES that significant relationships were found in the hypothesized direction, despite the potential noise in the data.

The current study, therefore, provides the most comprehensive evidence so far that the English translation of EssenCES is a potentially viable psychometric measure of social climate in the UK. It seems, then, that little has been lost in terms of consistency and factor-structure during translation from German to English.

Footnotes

¹ It should be noted that the correlations are reported as positive in the paper, but the text indicates that they are negative and the first author confirmed that the correlations are negative (C. L. Long, personal communication, April 19, 2011).

² Confidentiality was a very important issue in the current study, as people can be reluctant to provide honest answers if they feel that their responses may not remain confidential. So, to encourage honest responding, it was decided that demographic information would not be gathered for the participants in this study.

³ It should be noted that the aim was not to sample as many people as possible per site. Instead, at some sites the aim was to sample between six and 10 randomly selected individuals per ward/wing. This sampling strategy was based on previous research, which has suggested that an adequate and reliable representation of climate can be obtained with such a number (Schalast et al., 2008).

⁴ The EssenCES can be obtained at www.forensik-essen.de

⁵ It should be noted that additional analyses were run deleting missing data in a *listwise* fashion. The factor loadings demonstrated correlations that ranged from 0.989-0.999 (Mean = 0.99, SD = 0.001). These findings indicate that the three-factor oblique solution is stable regardless of how the data and missing items were treated. For further details of these analyses, please contact the third author.

⁶ In the model for hospital data 1 = High Secure Hospitals and 0 = Medium Secure Hospitals. In the model for prison data 1 = Category A prisons and 0 = Category B prisons. The one female prison was excluded from these analyses, as the female prison system uses a security system that is not comparable to that used in the male prison system.

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Table 1

The Forensic Services Sampled and Important Demographic Characteristics

Site Number	<i>n</i>	Estate^a (Prison or NHS)	Gender of Service (Male or Female)	Level of Security^b	Type of Population
1	104 (Prisoner = 60; Staff = 44)	Prison	Male	Category B Prison	General prisoner population
2	129 (Patient = 54; Staff = 75)	NHS	Male	High Secure Hospital	Personality-disordered patients
3	16 (Prisoner = 9; Staff = 7)	Prison	Female	Women's Closed Prison ^c	General prisoner population
4	79 (Patient = 24; Staff = 55)	NHS	Male	High Secure Hospital	Dangerous and Severe Personality Disorder (DSPD) ^d
5	45	NHS	Male	Medium Secure	Personality-disordered

	(Patient = 12; Staff = 33)			Hospital	patients
6	84 (Patient = 41; Staff = 43)	NHS	Male	High Secure Hospital	Mentally ill patients
7	99 (Prisoner = 64; Staff = 35)	Prison	Male	Category B Prison	Prisoners from a Therapeutic Community (TC)
8	54 (Prisoner = 14; Staff = 40)	Prison	Male	Category A Prison	Dangerous and Severe Personality Disorder (DSPD)
9	21 (Patient = 9; Staff = 12)	NHS	Male	High Secure Hospital	Dangerous and Severe Personality Disorder (DSPD)
10	38 (Patient = 15; Staff = 23)	NHS	Male	Medium Secure Hospital	Mentally ill and personality-disordered patients

11	45 (Patient = 13; Staff = 32)	NHS	Female	High Secure Hospital	All female patients with a Mental Health Act diagnosis held under conditions of high security
Total	714 (Patient = 168; Prisoner = 147; Staff = 399)	Prison = 4 services NHS = 7 services	Male = 9 services Female = 2 services	HSH = 5 services MSH = 2 services CAT A = 1 service CAT B = 2 services Closed = 1 service	GPP = 2 services PD = 2 services DSPD = 3 services MI = 1 service MI + PD = 1 service TC = 1 service Female MHA = 1 service

^a Within the UK, persons who commit a criminal offence and are in need of custodial care are sent to one of a wide network of prisons across the country (the prison estate). However, if the individual is diagnosed as suffering from a mental disorder (as diagnosed by the Mental Health Act) they are sent to one of a wide network of secure hospitals. Some of these hospitals are

privately managed, whereas others are funded by the National Health Service (NHS), which is a government-funded organization that provides general healthcare and psychiatric care to all UK citizens.

^b Within the prison and NHS estates there are different levels of security. The adult male prison estate is comprised of four security categories (Category A; Category B; Category C; Category D (open prisons)). Category A prisons are the highest security level and Category D the lowest. The NHS estate is comprised of three security categories (High Secure; Medium Secure; Low Secure). Prisoners and patients are placed at various levels of security based on the crime they have committed and the risk posed to themselves and others should they escape.

^c The adult female prison estate is comprised of four security categories (Restricted Status; Closed; Semi-Open; Open). Restricted status is the highest security level and is similar to Category A for male prisoners. Closed prisons are for female offenders who cannot be trusted not to attempt escape.

^d Dangerous and Severe Personality Disorder (DSPD) was established as a joint Home Office, Department of Health and Prison estate service in 2003 for individuals diagnosed as suffering from a combination of psychopathy and/or severe personality disorder who present a grave and immediate risk to the public (see Howells, Krishnan, & Daffern, 2007, for a summary of admission criteria).

Table 2

Fit Statistics for Three Factor Models following Confirmatory Factor Analysis (CFA)

Type of Data	Type of Factor Model	TLI	CFI	SRMSR	RMSEA
Pro-Rated	1-Factor	.56	.63	.157	.164
	3-Factor Orthogonal	.93	.94	.134	.066
	3-Factor Oblique	.96	.97	.054	.048
Ordered Categorical	1-Factor	.66	.71	---	.315
	3-Factor Orthogonal	.90	.91	---	.171
	3-Factor Oblique	.97	.98	---	.089

Note. TLI = Tucker-Lewis Index

CFI = Comparative Fit Index

SRMSR = Standardized Root Mean Squared Residual

RMSEA = Root Mean Squared Error of Approximation

Table 3

Item Loadings following Confirmatory Factor Analysis (CFA) using the Three-Factor

Oblique Solution

Items	FIML Pro-Rated			FIML Ordered Categorical		
	PC	ES	TH	PC	ES	TH
The patients care for each other	.83*			.87*		
Even the weakest patient finds support from his fellow patients	.79*			.82*		
Patients care about their fellow patients' problems	.88*			.91*		
When a patient has a genuine concern, s/he finds support from his/her fellow patients	.87*			.90*		
There is good peer support among patients	.82*			.85*		
Really threatening situations can occur here		.75*			.79*	
There are some really aggressive patients on this ward		.83*			.86*	
Some patients are afraid of other patients		.70*			.75*	
At times, members of staff are afraid of some of the patients		.53*			.58*	
Some patients are so excitable that one deals very cautiously with them		.51*			.52*	
On this ward, patients can openly talk to staff			.71*			.76*

about all their problems						
Staff take a personal interest in the progress of patients			.81*			.86*
Staff members take a lot of time to deal with patients			.72*			.74*
Often, staff seem not to care if patients succeed or fail in treatment			.50*			.57*
Staff know patients and their personal histories very well			.54*			.58*

Note. * $p < .001$

PC = Patients'/Prisoners' Cohesion and Mutual Support

ES = Experienced Safety

TH = Therapeutic Hold

Table 4

Cronbach's Alpha (α) Coefficients for the EssenCES Scales

		PC	ES	TH
Total Sample		.92 (<i>n</i> = 704)	.80 (<i>n</i> = 703)	.79 (<i>n</i> = 708)
Estate	Prison	.92 (<i>n</i> = 270)	.79 (<i>n</i> = 266)	.82 (<i>n</i> = 269)
	NHS	.90 (<i>n</i> = 434)	.80 (<i>n</i> = 437)	.77 (<i>n</i> = 439)
Participant Type	Resident	.92 (<i>n</i> = 309)	.78 (<i>n</i> = 306)	.78 (<i>n</i> = 310)
	Staff	.91 (<i>n</i> = 395)	.79 (<i>n</i> = 397)	.72 (<i>n</i> = 398)

Note. *n* varies due to missing data

PC = Patients'/Prisoners' Cohesion and Mutual Support

ES = Experienced Safety

TH = Therapeutic Hold