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**A Review of Questionnaire Measures for Assessing the Social Climate in Prisons and**

**Forensic Psychiatric Hospitals**

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1

**Abstract**

Significant time and resources are devoted to the monitoring of social climate in secure settings. However, if these efforts are to help (rather than hinder) attempts to improve the functioning of such units, the monitoring of social climate must be based on sound psychometric methods. The aim of this review was to determine what questionnaires exist to measure the social climate in secure settings and what evidence exists regarding their psychometric properties. Twelve questionnaire-based measures of social climate were identified. The Essen Climate Evaluation Schema (EssenCES) has received the most consistent empirical support, but this questionnaire does not provide as much of an in-depth, detailed insight into social climate as that provided by other social climate questionnaires. While more extensive measures of climate exist, they have not yet received sufficient validation to justify their routine use in practice. Nevertheless, there is growing evidence that some questionnaire-based measures can provide a reliable and valid assessment of the social climate in secure settings, which has important clinical and theoretical implications.

**Keywords:** social climate; ward atmosphere; prison; forensic psychiatric hospital; validation.

2

**A Review of Questionnaire Measures for Assessing the Social Climate in Prisons and**

**Forensic Psychiatric Hospitals**

The notion that psychiatric and correctional units have a discernible climate or atmosphere has been recognized for some time (e.g., Moos, 1975). Furthermore, the importance of such a climate has also been emphasized, with the World Health Organization (1953) stating that climate is “[t]he single most important factor in the efficacy of treatment” (p. 17) administered to psychiatric patients. However, in the same WHO report climate was described as “intangible” (p. 17), which raises a dilemma: how can one seek to improve social climate if it cannot be measured? Fortunately, researchers have developed a number of questionnaires since this early report that can be used to measure the social climate. It is the purpose of this article to review these questionnaires and to consider whether they are a reliable and valid means of measuring social climate in prisons and forensic psychiatric hospitals (hereafter referred to as secure settings). But first, it is important to briefly consider what is meant by the term social climate and why the current review is both timely and of clinical significance.

Moos (1989) has defined social climate as the material, social, and emotional conditions of a given unit and the interaction between such factors. Similarly, Ajdukovic (1990) describes climate as “a set of properties or conditions relating to the internal environment of an organization, as they are perceived by its members” (p. 422). Thus, social climate is defined for the purposes of this review as a multi-factorial construct, consisting of various components that describe how a given unit is perceived by its staff or residents. These components comprise a range of characteristics including (but not limited to) how safe from the threat of aggression and violence residents and staff feel, how supportive of therapeutic gain and the physical / psychological needs of residents the unit is perceived to be, and the extent to which the unit is seen to provide the opportunity for learning new skills and

3

prosocial behavior. Thus, social climate should be described as a multidimensional rather than a unidimensional construct.

The importance of social climate is underscored by a number of studies that have demonstrated an empirical relationship between climate and important clinical / organizational outcomes in psychiatric and correctional settings. For example, a more positive social climate has been shown to be associated with greater staff and resident satisfaction, including satisfaction with the quality of staff-resident interactions, satisfaction with the rehabilitative quality of the activities and treatments on offer, and satisfaction that the unit is a safe place to live and work (Bressington, Stewart, Beer, & MacInnes, 2011). Moreover, a more negative social climate has been shown to be associated with a greater frequency of verbal and physical aggression towards others, objects, and oneself, as well as more frequent episodes of seclusion (Long et al., 2011; Ros, van der Helm, Wissink, Stams,

* Schaftenaar, 2013; van der Helm, Stams, van Genabeek, & van der Laan, 2012). Finally, experiencing treatment within an environment that has a positive social climate has been shown to increase internal readiness and motivation to engage with rehabilitation efforts, as well as the perceived therapeutic strength of the resident-therapist relationship (Beazley & Gudjonsson, 2011; Day, Casey, Vess, & Huisy, 2011; Long et al., 2011; van der Helm, Beunk, Stams, & van der Laan, 2014). It is, therefore, unsurprising that a positive social climate has been shown to be associated with greater pre-to-post change after treatment and a longer duration before re-arrest amongst residents released from correctional institutions (Moos, 1975; Schubert, Mulvey, Loughran, & Loyosa, 2012).

Given the potential impact of social climate on the successful functioning of correctional units (as demonstrated by the above findings), it is unsurprising that the regular monitoring of climate has become a key activity in secure settings. In the United States (US), for example, the Federal Bureau of Prisons has been regularly monitoring the social climate

4

in randomly-selected prisons for approximately 20 years using its Prison Social Climate Survey. In the United Kingdom (UK), Her Majestsy’s Prison Service monitors social climate every two years in all prisons across England and Wales using questionnaires developed by Alison Liebling and colleagues (e.g., Liebling, Hulley, & Crewe, 2012). More recently, the Essen Climate Evaluation Schema (EssenCES; Schalast, Redies, Collins, Stacey, & Howells, 2008) was adopted in 2009 as a means of monitoring social climate in over 30 secure forensic services run by the National Health Service (NHS) and other private healthcare providers in the UK. Indeed, 1.5% of hospital income is currently dependent on these units monitoring social climate regularly every six to 12 months. Furthermore, the Royal College of Psychiatrists (2008) has recommended that the routine monitoring of social climate be adopted as a standard practice in therapeutic communities. Thus, secure settings currently devote significant time and resources to the monitoring of social climate.

Given the frequent use of questionnaires to monitor social climate in secure settings, it is important to consider what measures are available for such purposes and to evaluate the evidence to support (or refute) their reliability / validity. This is important due to the time and money costs associated with monitoring the social climate, including the significant time it takes to administer, complete, and score social climate questionnaires and the subsequent time it takes to interpret, report, and disseminate the findings of these surveys. Furthermore, the scores produced by these questionnaires are currently being used to guide clinical practice (e.g., to inform the development and implementation of interventions designed to improve resident-resident and resident-staff relationships). The scores are also being used to compare services in terms of the ‘quality of care’ they provide, and ultimately to determine whether units should receive additional funding (Partnerships in Care, 2012; Royston, 2012). Thus, it is crucial that such endeavors are guided by sound psychometric measurement; otherwise they will hinder rather than help attempts to improve patient / prisoner care. That is, if

5

changes to working practices (e.g., changing the way staff and residents interact, changing wing/ward routines etc.) are made on the basis of inaccurate data, then these changes will be unlikely to have the desired impact on patient/inmate care. Currently, however, this is difficult because there is not a comprehensive review of social climate questionnaires that can help practitioners to select the most reliable and valid method of monitoring climate. The current review, therefore, sought to address two questions: (1) What questionnaires exist to measure the social climate in prison and forensic psychiatric hospital settings?; and (2) What evidence exists regarding the psychometric properties of these questionnaires (i.e., internal consistency, factor structure, construct validity, and reliability)? These four psychometric properties are consistently discussed within the literature as being key components of scale reliability / validity that are necessary for a questionnaire to be considered ‘sufficiently’ validated for use in practice (e.g., Fitzpatrick, Davey, Buxton, & Jones, 1998; Remor, 2013; Terwee et al., 2007).

**Method**

Searches of the following databases were performed to identify relevant studies published by 3rd of October 2014: PsycINFO (from 1887), MEDLINE (from 1946), The Cochrane Library (Issue 5, May 2014), Applied Social Sciences Index and Abstracts (from 1987), and Criminology: A Sage Full-Text Collection (from 1976). Given the wide variety of terms that have been used to refer to social climate, it was necessary to use a large number of search terms in order to ensure a comprehensive set of results from these databases. While it was acknowledged that such an approach would produce a large number of search results (many of which would not be relevant to the current review), it was decided that the additional time spent reviewing articles was justified given the importance of ensuring a comprehensive review. The search terms consisted of: social climate; therapeutic climate; group climate; ward climate; ward atmosphere; group atmosphere; prison environment; ward environment;

6

psychosocial climate; institutional climate; correctional climate; penitentiary climate; jail climate; Essen Climate Evaluation Schema; Correctional Institutions Environment Scale; Prison Preference Inventory; Prison Environment Inventory; quality of prison life; therapeutic milieu; and relational security.

In addition to these database searches, the reference lists of all articles included in the review were hand-searched for further relevant articles and key researchers were contacted via e-mail to provide additional articles (either already published or in press).

The title and abstract of all articles returned via these searches were scrutinized to determine their fit with the following inclusion criteriai: (1) the article must be concerned with social climate in secure settings (i.e., prisons or forensic psychiatric hospitals); (2) social climate must be assessed using a questionnaire that produces a quantifiable (i.e., numeric) measure of climate; (3) it must be the perceived social climate that is assessed rather than objective measures of the environment (e.g., resident-staff ratio, frequency of assaults); (4) the article must be concerned with current perceptions of the social climate rather than expected social climate (e.g., in a unit that has yet to open) or ideal social climate (i.e., the social climate that a resident or staff member would like to see in their unit); (5) the article must report statistical evidence relating to either: (i) internal consistency (e.g., Cronbach’s α, Kuder-Richardson 20 scores (KR-20), corrected item-total correlation coefficients (CITC), inter-item / item-subscale correlations), (ii) factor structure (e.g., principal components analysis (PCA), confirmatory factor analysis (CFA), exploratory factor analysis (EFA), inter-scale correlations), (iii) construct validity (e.g., convergent validity, divergent validity, and responsivenessii), and / or (iv) reliability (e.g., test-retest reliability, split-half reliability, statistically comparing factor structure across different sub-samples- referred to as measurement invariance hereafter); and (6) the article must be an original, empirical study published in English (or translated to English). In relation to the last point, it should be noted

7

that this has led to the exclusion of a recently published measure of group climate that was published in French by Mathys, Lanctôt, and Touchette (2013).

**Results**

**Studies Identified**

Electronic searches identified 12306iii records, of which 1279 were selected as potentially meeting the inclusion criteria based on a preliminary inspection of the title and abstract. Following this initial screening, a more detailed assessment was made by accessing full-text copies of the selected articles, which led to 71 articles being identified as having met the inclusion criteria. A further 12 articles were identified via hand searches of the references lists and two articles identified by contacting key authors. Thus, 85 articles met the inclusion criteria and were included in the current review.

**A Descriptive Summary of the Reviewed Studies**

These studies reported psychometric evidence relating to a total of 12 social climate questionnaires (see Table 1 for a descriptive summary). It is clear from this table that there is an extensive history of research into social climate within secure settings, with research spanning almost fifty years, 11 countries, and three continents. These studies have sampled a total of 59070 prisoners, patients, and staff from a range of secure settings, including males and females, adults and adolescents, and individuals with varying clinical diagnoses (e.g., personality disorder, mental illness, intellectual disability). Furthermore, a range of security classifications have been sampled, including maximum / Category A to minimum / Category D prisons and from high to low secure forensic psychiatric hospitals.

[INSERT TABLE 1 HERE]

**A Descriptive Summary of the Social Climate Questionnaires**

There were 12 social climate questionnaires identified within the current review. These questionnaires ranged in length from 15 to 140 items, measuring between one and 21 scales

8

that captured various aspects of the social climate in secure settings. For example, these questionnaires measured the perceived safety from aggression and violence, whether staff are perceived to support a therapeutic ethos, the relationships between residents and staff, the degree of control exerted over residents by the unit and its staff, and the perceived quality of treatment activities offered to residents (see Table 2).

[INSERT TABLE 2 HERE]

**The Psychometric Properties of the Social Climate Questionnaires**

In this review studies were selected that reported on at least one of four key types of psychometric evidence (e.g., Fitzpatrick et al., 1998; Remor, 2013; Terwee et al., 2007): (1) internal consistency (e.g., Cronbach’s α, KR-20 scores, CITCs, inter-item / item-subscale correlations); (2) factor structure (e.g., PCA, CFA, EFA, inter-scale correlations); (3) construct validity (e.g., convergent validity, divergent validity, and responsiveness); and / or

1. reliability (e.g., test-retest reliability, split-half reliability, measurement invariance). A range of such evidence was reported in the literature, with some questionnaires having received greater attention than others (see Table 3 for a summary). Given the limits on space, it is not possible to review all questionnaire measures in detail. The current study will, therefore, provide a detailed narrative description of the published psychometric evidence for the Correctional Institutions Environment Scale (CIES) / Ward Atmosphere Scale (WAS) and the EssenCES. These are the two most commonly used measures of social climate in the literature. The psychometric evidence for the remaining 10 questionnaires is summarized in Table 3, however, and the discussion section of this paper will draw overarching conclusions regarding the measurement of social climate in secure settings, which consider the relative strengths and limitations of all 12 questionnaires identified in this review.

[INSERT TABLE 3 HERE]

9

*Correctional Institutions Environment Scale (CIES) / Ward Atmosphere Scale (WAS) (Moos, 1968, 1975; Wenk & Moos, 1972)* The WAS (and its correctional version, the CIES) arethe oldest and most frequently used measures of social climate. However, despite extensive use of the CIES / WAS, the evidence to support their psychometric properties is mixed.

There are two studies reporting psychometric evidence pertaining to internal consistency of the CIES / WAS scales (Moos, 1975; Wenk & Moos, 1972) and one study that reports Cronbach’s α for all CIES scales combined (Beazley & Gudjonsson, 2011, α = 0.82), although Moos has never indicated that it is acceptable to combine the scales in this way. Moos (1975) reports a mean KR-20 value across the nine sub-scales of 0.66 for residents (range = 0.54 (Personal Problem Orientation) to 0.75 (Staff Control)) and a mean of 0.71 for staff (range = 0.54 (Clarity) to 0.83 (Order and Organization)). Five out of the 10 sub-scales achieved KR-20 values below the commonly cited minimum threshold of 0.70 (Helmstadter, 1964) for the resident data, but only two of these sub-scales are of significant concern (Expressiveness: α = 0.56; Personal Problem Orientation: α = 0.54). Furthermore, only five out of the 10 sub-scales achieved values below 0.70 for the staff data, with one of these sub-scales causing significant concern (Clarity: α = 0.54). The literature on internal consistency of the CIES / WAS in secure settings is, therefore, surprisingly sparse.

Two studies report evidence relating to the reliability of the CIES / WAS in secure settings (Jones & Cornes, 1977; Moos, 1975), although Jones and Cornes’ (1977) study relates to an old version of the questionnaire. Moos (1975) reported test-retest correlation coefficients ranging from 0.65 (Support and Order and Organization) to 0.80 (Autonomy) in a sample of 31 residents over a one-week retest period. Thus, the evidence in support of reliability is very sparse, albeit somewhat promising.

There are six studies that have investigated the factor structure of the CIES / WAS in secure settings using either factor-analytic methods and / or inter-scale correlations

10

(Ajdukovic, 1990; Alden, 1978; Jones & Cornes, 1977; Moos, 1968; Wilkinson, 1973; Wright & Boudouris, 1982). None of these studies provide convincing support for the proposed factor structure, with several studies demonstrating statistically significant inter-scale correlations (*r* > 0.50, *p* < .01) and factor loadings that support a simpler three-scale (or fewer) structure. Thus, there is very weak evidence to support the proposed factor structure of the CIES / WAS in secure settings.

Nine studies have examined convergent and divergent validity of the CIES / WAS in secure settings, with mixed evidence reported. (Although it should be noted that two studies utilized old versions of the questionnaire and these studies are not commented on; Moos, 1968, 1970.) In support of the CIES / WAS, studies have reported statistically significant relationships between social climate scores and symptoms of depression (Beazley & Gudjonsson, 2011), correctional policy (e.g., a rehabilitative vs. punitive stance; O’Leary, Duffee, & Wenk, 1977), staff-resident ratio, authoritarianism, liking staff, willingness to engage in more proactive, self-initiated behavior, positive behavioral change while incarcerated, and reconviction upon release (Moos, 1975; Rosenfield & Linn, 1976). However, a number of studies have failed to find statistically significant relationships between CIES / WAS scores and occupational stress amongst staff (Kirby & Pollock, 1995), rule infractions (Smith & Ivester, 1987), general satisfaction with the unit, and symptoms of anxiety (Moos, 1975). Thus, there is mixed evidence regarding the convergent, divergent and criterion validity of the CIES / WAS in secure settings.

Finally, there are 27 studies that have either examined the impact of various interventions on social climate, or compared different types of person and different types of secure environment in terms of their scores on the CIES / WAS. These studies have the potential to reveal important information regarding whether the CIES / WAS is able to detect changes / differences in the social climate that would theoretically be expected (referred to as

11

responsiveness). Eight studies examined the impact of various interventions on the social climate of secure settings, with statistically significant changes observed in CIES / WAS scores from pre- to post-intervention in six of these studies (Barton & Mackin, 2012; Blumenthal, Ruszczynski, Richards, & Brown, 2011; Coughlin, 2003; Nesset, Rossberg, Almvik, & Friis, 2009; Ray, Wandersman, Ellisor, & Huntington, 1982; Waters & Megathlin, 2002). The most relevant of these studies demonstrated statistically significant changes to the social climate following an intervention that was designed to increase staff awareness of the therapeutic environment and its impact on residents’ rehabilitation (Nesset et al., 2009). These studies suggest that the CIES / WAS might be described as responsive. It should be noted, however, that two studies did not detect changes that would theoretically be expected after an intervention designed to improve the quality of staff and patient relationships (change would theoretically be expected because staff-resident interactions are a key part of social climate; Berry et al., 2012) and after residents moved to a new purpose-built building (Long, Langford, Clay, Craig, & Hollin, 2011).

Nineteen studies compared different types of person and different types of secure environment in terms of their scores on the CIES / WAS. These studies revealed statistically significant differences that are in line with what would be predicted theoretically. For example, residents have generally been found to report a less positive social climate than staff (which might be expected theoretically because of the mandatory nature of the residents’ incarceration and the subsequent restrictions to their liberty and personal freedom, such as having less control over their environment and activities such as eating, sleeping and exercise; Langdon, Cosgrave, & Tranah, 2004) (Caplan, 1993; Jesness, 1975; Jones & Cornes, 1977; Kirby, 1997; Langdon, Swift, & Budd, 2006; Moos, 1975; Morrison, Burnard,

* Phillips, 1997; O'Leary et al., 1977; Smith, Maume, & Reiner, 1997; Waters, 1980). Units with a higher security classification tend to be rated as having a less positive climate than

12

units of lesser security, which might be explained by the greater restrictions on personal freedom that exist in conditions of greater security and the possibility that those residents within higher levels of security pose a greater risk of violence and may suffer greater psychiatric acuity (Langdon et al., 2004, 2006). Moreover, units that place special emphasis on therapeutic principles and rehabilitation are generally rated as having a more positive social climate than units that do not (Natarajan & Falkin, 1997; O'Leary et al., 1977). Overall, these findings suggest that the CIES / WAS is able to detect meaningful differences in social climate between persons and units.

In summary, there is generally good support for the convergent / divergent validity and responsiveness of the CIES / WAS (with some exceptions, as noted); however, the literature is quite sparse in terms of reliability and internal consistency, and there are serious concerns regarding the proposed factor structure of the questionnaire. Furthermore, some authors have argued that the CIES / WAS is too long for repeated clinical use and that item content might be outdated (see Schalast et al., 2008). Researchers and practitioners should, therefore, be cautious when applying the CIES / WAS as a means of monitoring the social climate in secure settings, and should consider the use of alternative measures.

*Essen Climate Evaluation Schema (EssenCES; Schalast et al., 2008)* The EssenCES is ashort measure of social climate that was developed to overcome some of the aforementioned limitations of the CIES / WAS (see Schalast et al., 2008).

Ten studies have reported on the internal consistency of the EssenCES. In terms of Cronbach’s α, the mean α values across these studies were 0.82 (Residents’ Cohesion), 0.77 (Experienced Safety), and 0.81 (Therapeutic Hold). Furthermore, only seven out of 69 α values across these studies fell below 0.70 and only seven out of 120 CITC values for an item fell below the recommended minimum of 0.20 (Røssberg & Friis, 2003). Thus, there is good empirical support for the internal consistency of the EssenCES.

13

Six studies have reported evidence relating to the factor structure of the EssenCES, using either PCA, EFA, or CFA (Day et al., 2011; Howells et al., 2009; Milsom, Freestone, Duller, Bouman, & Taylor, 2014; Schalast & Groenewald, 2009; Schalast et al., 2008; Tonkin et al., 2012)iv. All six studies have provided support for the proposed three-factor structure of the EssenCES, with the vast majority of items obtaining loadings greater than 0.50 on the ‘expected’ factor and with very few cross-loading items reported. Moreover, factor structure appears to remain relatively stable across prison versus forensic healthcare settings (Tonkin et al., 2012) and for residents versus staff (Day et al., 2011; Schalast et al., 2008; Tonkin et al., 2012). Thus, it can be concluded that there is strong evidence to support the proposed factor structure of the EssenCES.

A range of evidence also exists to support convergent and divergent validity. Statistically significant correlations have been observed between the EssenCES and other measures of milieu, ward atmosphere, relational security, and the treatment / working environment of secure settings (Day et al., 2011; Livingston, Nijdam-Jones, & Brink, 2012; Schalast & Groenewald, 2009; Schalast et al., 2008; Tighe & Gudjonsson, 2012; Tonkin et al., 2012). Furthermore, significant relationships have been observed between the EssenCES and measures of resident satisfaction with treatment services (Bressington et al., 2011; Campbell, Allan, & Sims, 2014). Also, significant relationships have been observed between the EssenCES and readiness to engage in therapeutic interventions, the number of treatment sessions attended, the perceived strength of the resident-therapist relationship, and the number of seclusions, aggressive, and security incidents engaged in (Day et al., 2011; Long et al., 2011; Tonkin et al., 2012). Finally, statistically significant relationships have been observed between EssenCES Experienced Safety and Therapeutic Hold and staff absence from work (Eggert et al., 2014). However, there are studies where no statistically significant relationships have been found between the EssenCES and self-reported engagement with

14

treatment, self-reported post-treatment change, treatment outcomes such as discharge, progression and regression, staff burnout, the frequency of seclusion episodes and the number of security incidents perpetrated (Eggert et al., 2014; Livingston et al., 2012; Schalast et al., 2008).

There are also a number of studies that demonstrate statistically significant differences in terms of EssenCES scores between different types of person and different types of secure environment. These differences are theoretically consistent with what one might predict. For example, several studies have demonstrated statistically significant differences between the residents and staff of secure settings (Ching, Daffern, Martin, & Thomas, 2010; Day et al., 2011; Livingston et al., 2012; Long et al., 2011; Milsom et al., 2014; Tonkin et al., 2012), between units with a differing security classification (Long et al., 2011; Quinn, Thomas, & Chester, 2012; Milsom et al., 2014; Tonkin et al., 2012), and between therapeutic treatment units versus ‘traditional’ or mainstream units (Day et al., 2011; Schalast & Groenewald, 2009). But, several studies did not detect changes that would theoretically be expected following the introduction of different treatment and management initiatives, such as an intervention designed to enhance resident engagement with therapy (Braham, Heasley, & Akiens, 2013; Ching et al., 2010; Livingston, Nijdam-Jones, Lapsley, Calderwood, & Brink, 2013). Theoretically, such an intervention would be expected to impact on social climate because climate has been described as an aspect of programme responsivity (Howells

* Day, 2003) and an important determinant of treatment readiness in the Multifactor Offender Readiness Model (Ward, Day, Howells, & Birgden, 2004, p.667). It is possible, however, that these interventions were simply not effective in their aims, thus the lack of significant findings may be a reflection on the efficacy of the interventions rather than the psychometric properties of the EssenCES.

15

In summary, there is strong evidence to support the psychometric properties of the EssenCES. But, it is important to recognize the limitations of this evidence. In particular, the samples utilized included relatively few low security units, they were comprised solely of adults, there were few women’s units sampled, and limited consideration of intellectually-disabled samples. Consequently, researchers and practitioners should be cautious when seeking to apply the EssenCES to such populations.

**Discussion**

Significant time and resources are devoted to the monitoring of social climate in secure settings, which is unsurprising given the evidence to suggest that climate may have a significant impact on important clinical and organizational outcomes, such as the frequency of aggressive incidents and the success of treatment / rehabilitative efforts (as discussed in the introduction). It was, therefore, the aim of this review to determine what psychometric questionnaires exist to measure the social climate in secure settings and whether there is any evidence to support (or refute) key psychometric properties that are a fundamental part of scale validation (e.g., Fitzpatrick et al., 1998; Remor, 2013; Terwee et al., 2007). These questions are both timely and of clinical significance given that scores on such questionnaires are currently being used to guide clinical practice, to compare services in terms of the ‘quality of care’ they provide, and ultimately to determine whether units should receive additional funding (Partnerships in Care, 2012; Royston, 2012). These endeavors must be guided by sound psychometric measurement if they are to help rather than hinder attempts to improve patient / prisoner care, and this article provides the first comprehensive review that can assist clinicians, researchers, and service managers to identify the most appropriate methods for evaluating the social climate in secure settings.

**The Empirical Adequacy of Social Climate Questionnaires**

16

There is a well-developed literature on the psychometric properties of questionnaires designed to measure the social climate in secure settings. This literature spans almost fifty years, 11 countries, and three continents, including a range of populations within prisons and forensic psychiatric hospitals. Twelve questionnaire-based measures of social climate were identified in this review where published evidence exists regarding their psychometric properties. Many of these questionnaires, however, have received quite limited attention and the evidence to support their psychometric properties is sparse.

There is one questionnaire, however, that stands out as having received relatively more consistent and extensive empirical support. The EssenCES has received support for the internal consistency of its three sub-scales, there is support for the proposed three-factor structure, and there is support for the reliability of this questionnaire across different samples (prison settings, forensic psychiatric hospitals, residents, and staff). Moreover, the questionnaire has demonstrated convergent and divergent validity with a range of important clinical and organizational outcomes, as well as demonstrating an ability to detect theoretically-consistent differences between persons and units in terms of the perceived social climate. For these reasons, the EssenCES can be considered a reliable and valid tool for measuring the social climate in secure settings.

There are, however, gaps in the psychometric evidence for this questionnaire, including that the EssenCES needs further validation in low secure units, adolescent units, women’s units, and units containing individuals with an intellectual disability. Moreover, the EssenCES is a brief questionnaire (consisting of 15 scored items) that does not give a detailed insight into social climate. While this gives the EssenCES advantages (such as being easy to administer and suitable for secure populations who may lack the motivation and concentration to complete longer questionnaires), researchers and practitioners may at times require a more detailed insight into the social climate of their unit.

17

In situations where a more detailed insight into social climate is required, there are a number of longer questionnaires that exist, including the CIES / WAS (90/100 items, respectively), the Measuring the Quality of Prison Life for prisoners questionnaire (140 items: MQPL; Liebling et al., 2012) / the Staff Measuring the Quality of Prison Life questionnaire (117 items: SQL; Crewe, Liebling, & Hulley, 2011), and the Styve / MacKenzie questionnaire (129 items: MacKenzie, Wilson, Styve, & Gower, 2001; Styve & MacKenzie, 2003). These questionnaires offer a more refined and nuanced insight into social climate than that offered by the EssenCES, but researchers and practitioners must be cautious when using these questionnaires for a number of reasons. First, these questionnaires tend to have quite complex factor structures and often there is little empirical evidence to support such complexity (e.g., Johnsen, Granhein, & Helgesen, 2011; MacKenzie et al., 2001; Wilkinson, 1973; Wright & Boudouris, 1982). Second, not all of these questionnaires can be utilized with both residents and staff and in both prison and secure forensic psychiatric hospital settings, which limits their applicability (e.g., the MQPL / SQL and the Styve / MacKenzie questionnaires were developed for prison settings and the latter has not been tested with staff). Third, none of these questionnaires have been validated in a wide range of populations, including adults, adolescents, males, and females, which further limits their practical value. Thus, the CIES / WAS, the MQPL / SQL, and the Styve / MacKenzie questionnaire cannot be recommended for use in practice until more extensive evidence to support their psychometric properties has been established.

There are two further social climate questionnaires that have recently been developed, which are beginning to show promising psychometric properties. The FSS (MacInnes, Beer, Keeble, Rees, & Reid, 2010) containing 60 items (measuring six sub-scales) and the PGCI (Ros et al., 2013; van der Helm, Stams, & van der Laan, 2011) containing 36 items (23 in the short-form), measuring four sub-scales. The FSS and the PGCI might, therefore, be seen as a

18

compromise in terms of length and complexity between the short EssenCES and longer questionnaires, such as the MQPL / SQL. However, it is important to note their limitations. First, both questionnaires are designed for use with residents only (and any comprehensive assessment of social climate must include both staff and residents, as discussed below). Second, each questionnaire is designed for a particular type of secure setting (FSS = forensic healthcare settings; PGCI = prison settings) and it is unclear whether these questionnaires are suitable for use in a broader range of secure services. Third, due to both questionnaires having only been published in the last four years, the psychometric evidence is limited to small and homogeneous samples. Thus, practitioners should not adopt either the FSS or the PGCI in practice until these questionnaires have received more extensive validation.

Finally, there are three questionnaires that have received very limited empirical support; the EQS (Gibbs, 1991), the PEI (Wright, 1985), and the PSCS (at least, the sub-sections examined by Ross, Diamond, Liebling, & Saylor, 2008). The use of these questionnaires to monitor the social climate in secure settings or for research purposes is, therefore, not recommended without further validation research.

**Recommendations for the Effective Monitoring of Social Climate in Practice**

Regardless of which questionnaire is chosen to monitor social climate, there are a number of key recommendations that can be drawn from this review that will help researchers, practitioners, and service managers to devise an effective procedure for monitoring the social climate within secure settings.

* *Recommendation 1: Both staff and residents should complete social climate surveys*

Within the current review numerous studies were identified that reported significant differences in the perceived social climate of residents versus staff (e.g., Caplan, 1993; Day et al., 2011). It is, therefore, clear that both residents and staff should be included in surveys

19

designed to monitor the social climate of secure settings, otherwise these surveys may not obtain a balanced and representative view of climate.

* *Recommendation 2: Social climate surveys should include a heterogeneous mixture of*

*wings / wards*

The second recommendation is that a social climate survey should seek to sample prison wings / hospital wards that serve a variety of different functions (e.g., admission versus treatment) and that contain different types of resident (e.g., personality-disordered, mentally ill, intellectually-disabled). This is important because several studies identified in the current review have found such wings / wards to differ significantly in the perceived social climate (e.g., Long et al., 2011; Milsom et al., 2014), and without considering such a heterogeneous mixture any attempts to monitor climate will not yield representative findings.

* *Recommendation 3: Residents and staff should be allowed to respond anonymously to*

*social climate surveys*

The third recommendation is that residents and staff should be allowed to respond anonymously to social climate surveys. The importance of this was demonstrated by Moos (1975) who found that social climate was reported in a much more negative light on wards where respondents were allowed to remain anonymous compared to wards where they were required to give their name. If researchers, practitioners, and service managers want to obtain an honest and accurate estimate of social climate, participants must be allowed to respond anonymously.

* *Recommendation 4: Actively involve staff and residents when monitoring social*

*climate*

It is likely that staff and residents will respond most positively to attempts to monitor the social climate when they are consulted before the survey (e.g., about how they would like to be approached, what the benefits of monitoring climate are etc.), kept closely informed of

20

progress during the survey, and given a summary of the findings after the survey has been completed. This will help to encourage participation in the survey by ensuring that participants feel consulted during the process, feel like their views have been listened to, and understand the importance of monitoring climate and how the findings will be used to improve the environment of their unit.

* *Recommendation 5: Social climate surveys should consider the combined use of brief*

*and more extensive questionnaire measures*

Social climate is a dynamic feature of secure settings, which means it is important to monitor on a frequent basis. This need must, however, be balanced against more pragmatic concerns, such as not over-burdening staff and residents with the regular completion of lengthy questionnaires. Unless such concerns are carefully balanced, any attempt to establish the regular monitoring of social climate will likely meet with significant resistance and low completion rates. It is, therefore, recommended that a combination of short and more lengthy questionnaires are used to monitor the climate of secure settings. That is, a short questionnaire (such as the EssenCES) might be administered every six months, as a brief snapshot of climate, and then a more detailed and nuanced measure might be taken every two years (e.g., using the FSS or PGCI). But before such a recommendation can be implemented, more extensive validation of the larger and more detailed climate questionnaires is needed.

Alongside the use of multiple climate questionnaires, researchers and clinicians might also consider gathering data from other sources as part of routine monitoring. These data could be drawn from a range of sources, including incident reporting databases containing reports of violence, aggression and self-harm, records of staff/resident movement amongst wards/wings and any information concerning changes to working practices and unit regimes. These are all factors that theoretically might impact on the social climate within secure

21

settings and, therefore, having knowledge of them would help clinicians/researchers to better understand and interpret social climate data from their unit.

**Limitations of the Research and Future Directions**

Having considered the relative strengths and weaknesses of the 12 social climate questionnaires and recommendations for monitoring climate in practice, it is important to consider limitations of the literature more generally and future research directions. The primary limitation is that none of the questionnaires reviewed have received extensive evidence to support internal consistency, factor structure, and reliability across the full range of secure services and populations within which they might be used. Thus, the validation evidence cannot be said to be complete for any of these measures of social climate, and future research must seek to fill the gaps highlighted throughout this article.

However, the evidence regarding reliability across samples and time is particularly sparse. Although, it should be noted that some studies have statistically compared factor structure across different types of setting and participant (Tonkin et al., 2012), others have performed tests of split-half reliability (e.g., Ross et al., 2008), and some studies have even examined test-retest reliability (e.g., Moos, 1975). But, this raises the interesting point of whether test-retest reliability is an appropriate method for examining the psychometric properties of social climate scales. Social climate is seen as a dynamic characteristic that is subject to fluctuation over time, however the speed with which climate can change is an issue that has not received empirical attention. Indeed, social climate is likely to be contingent on a range of factors, including the incidence of violence, aggression and self-harm, changes in staff and resident composition (i.e., new staff/residents entering a wing/ward) and changes to working practices and unit regimes. Consequently, it is difficult to know what an appropriate interval is over which to examine test-retest reliability. Furthermore, consideration must be given to other sources of data (e.g., serious incident reports, staff/resident turnover etc.) in

22

order to understand the observed fluctuations in social climate over time. These are issues that should be given attention by researchers in the future, which will not only help to clarify the appropriate means for validating social climate questionnaires but will also help to determine the frequency with which such questionnaires should be administered when practitioners are seeking to monitor climate in their units.

Another area that has received little (if any) attention is who should be included in research and clinical samples that aim to examine the perceived social climate in secure settings. Staff and resident turnover can be quite rapid in such units, which raises the issue of how long someone must have worked / lived on a given unit to be able to offer a reliable and valid estimate of social climate. Furthermore, not all types of staff will necessarily have had sufficient contact with a unit to provide a valid estimate of climate (e.g., cleaning staff or night-shift staff). This is an important issue because if participants are unable to give a valid estimate of social climate then the data they produce will undermine any subsequent attempts to examine scale reliability / validity and practitioners may be provided with misleading conclusions. Fortunately, however, researchers have shown awareness of these issues; for example, Day et al. (2011) only sampled residents and staff who had a minimum of 14 days living / working on the unit, and Milsom et al. (2014) only sampled staff who worked on the unit in a clinical capacity (e.g., nurses, social workers, psychologists). But, such inclusion / exclusion criteria were chosen arbitrarily, with little empirical evidence to support their utility. Future research must, therefore, seek to determine more definite criteria that can be used to guide sample selection. Without such work, research on social climate and the monitoring of climate in practice may be undermined.

A further issue that has received very little attention is how many responses are needed from a given unit to provide a reliable and accurate measure of social climate. In large institutions it is clearly not feasible to sample all residents and staff (and even if it were many

23

individuals would not agree to complete such questionnaires). Consequently, social climate surveys will inevitably involve collecting data from a sub-sample of the larger population, which raises the question of how large this sub-sample should be in order to obtain a reliable and accurate estimate of social climate (is 75% of the population sufficient, or 50%, or 30%?). Some authors have attempted to provide guidance in this regard (e.g., Moos, 1975, provides guidelines for the CIES), but these guidelines are quite arbitrary and were not derived in any systematic, empirically-based manner. Moreover, they will not necessarily apply to other questionnaires outside of the CIES or other secure settings that, for example, contain significantly fewer residents and staff than the rather large institutions originally studied by Moos (1975). Future research is needed to systematically investigate this issue, which will help researchers and clinicians who are seeking to measure the social climate in secure settings.

A final issue worthy of mention is the variation that exists in how the different social climate questionnaires have defined/operationalized climate. As can be seen from Table 2, there is considerable variation in the complexity used to describe social climate, with questionnaires ranging in length from 15 to 140 items, measuring between one and 21 different facets of social climate. While there is considerable overlap in the facets measured across these 12 questionnaires (e.g., scales measuring staff – resident and/or resident – resident interaction are included in most questionnaires), there are also differences. For example, the MQPL includes scales measuring drugs and exploitation and family contact that are not specifically covered by the other climate questionnaires. Further research is, therefore, needed to explore the comparability of different social climate questionnaires. This research might adopt a quantitative approach that includes items from multiple climate questionnaires in a single factor analysis. This would help to identify any conceptual overlap between the various social climate questionnaires. Alternatively, a card sort methodology might be

24

adopted whereby residents and/or staff are provided with a series of cards listing items from various social climate questionnaires. Participants would then be asked to organize these cards into conceptually similar groups, which would further highlight conceptual overlap between the different social climate questionnaires. Regardless of the approach adopted, research of this nature is important if we are to fully understand the theoretical constructs being measured by social climate questionnaires and to develop recommendations for practitioners that explain which questionnaires should be used and for what purposes.

**Conclusion**

The monitoring of social climate in secure settings is an important part of ensuring that these services provide safe and supportive environments within which residents can work towards a successful reintegration back into society. Despite social climate being referred to as “intangible” (WHO, 1953, p. 17), the current review has illustrated promising evidence that the social climate can be measured in a reliable and valid manner. While there is clearly considerable work needed before such questionnaires can be utilized with complete confidence in practice, there is growing evidence that some questionnaire-based measures of social climate have the potential to make important clinical and theoretical contributions to our understanding of how climate develops, how it can be monitored, and importantly how the social climate can be improved for the benefit of both staff and residents in secure settings.

25

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38

TABLES

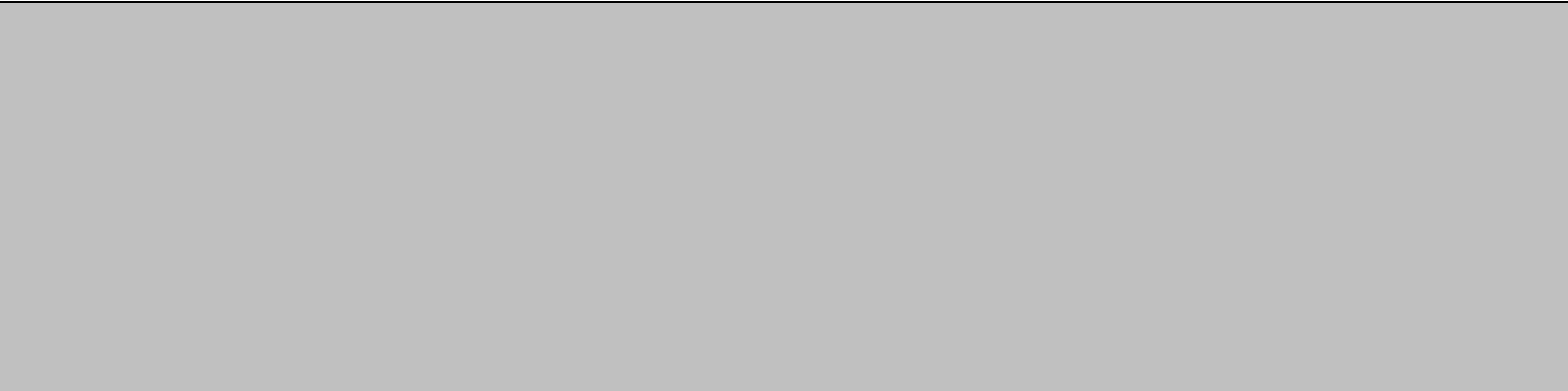
Table 1

*A Descriptive Summary of the Reviewed Studies*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Questionnaire** | **Date Range** | **Country** | **Sample** | **Setting** | **Age** | **Gender** | **Diagnosis** |
|  |  |  |  | **(Resident : Staff)** |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | **CIES / WAS (37)** | 1968 - 2012 | USA (20) | 18062 | Prison (19) | Adult (18) | Male (14) | General (12) |
|  |  |  | England and Wales (12) | (13676 : 4386) | FPH (17) | Adolescent (4) | Female (3) | PD (1) |
|  |  |  | Sweden (2) |  | Unspecified (1) | Both (8) | Both (15) | MI (5) |
|  |  |  | USA & England (1) |  |  | Unspecified (7) | Unspecified (5) | ID (1) |
|  |  |  | Norway (1) |  |  |  |  | Mixed (8) |
|  |  |  | Yugoslavia (1) |  |  |  |  | Unspecified (10) |
|  |  |  |  |  |  |  |  |  |
|  | **EssenCES (17)** | 2008 - 2014 | England (10) | 4577 | Prison (2) | Adult (15) | Male (1) | General (2) |
|  |  |  | Australia (2) | (2291 : 2287) | FPH (14) | Unspecified (2) | Female (1) | MI (3) |
|  |  |  | Canada (2) |  | Both (1) |  | Both (13) | ID (1) |
|  |  |  | Germany (2) |  |  |  | Unspecified (2) | Mixed (7) |
|  |  |  | USA (1) |  |  |  |  | Unspecified (4) |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 39 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PGCI (9)** | 2009 - 2014 | The Netherlands (8) | 874 | Prison (8) | Adult (1) | Male (2) | General (1) |
|  |  |  | Unspecified (1) | (874 : 0) | FPH (1) | Both (6) | Both (6) | MI (1) |
|  |  |  |  |  |  | Unspecified (2) | Unspecified (1) | ID (1) |
|  |  |  |  |  |  |  |  | Mixed (1) |
|  |  |  |  |  |  |  |  | Unspecified (5) |
|  |  |  |  |  |  |  |  |  |
|  | **PEI (7)** | 1985 - 2014 | USA (6) | 8701 | Prison (7) | Adult (2) | Male (5) | General (6) |
|  |  |  | The Netherlands (1) | (8701 : 0) |  | Unspecified (5) | Both (2) | Unspecified (1) |
|  |  |  |  |  |  |  |  |  |
|  | **MQPL / SQL (6)** | 2002 - 2012 | England and Wales (5) | 9774 | Prison (6) | Adult (4) | Both (2) | General (6) |
|  |  |  | Norway (1) | (8068 : 1706) |  | Unspecified (2) | Unspecified (4) |  |
|  |  |  |  |  |  |  |  |  |
|  | **Styve /** | 2000 - 2003 | USA (3) | 4121a | Prison (3) | Adolescent (3) | Both (3) | General (1) |
|  | **MacKenzie (3)** |  |  | (4121 : 0) |  |  |  | Unspecified (2) |
|  |  |  |  |  |  |  |  |  |
|  | **PSCS (1)** | 2008 | USA & England (1) | 1281 | Prison (1) | Adult (1) | Unspecified (1) | MI (1) |
|  |  |  |  | (1281 : 0) |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | **EQS (1)** | 1991 | USA (1) | 339 | Prison (1) | Adult (1) | Unspecified (1) | General (1) |
|  |  |  |  | (339 : 0) |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | **FSS (1)** | 2010 | England (1) | 63 | FPH (1) | Adult (1) | Both (1) | Unspecified (1) |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 40 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | (63 : 0) |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | **Un-named** | 1998 | Sweden (1) | 2063 | Prison (1) | Adult (1) | Both (1) | General (1) |
|  | **(Harenstam et** |  |  | (0 : 2063) |  |  |  |  |
|  | **al., 1998) (1)** |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | **Un-named** | 1994 | Finland (1) | Unspecified | FPH (1) | Adult (1) | Male (1) | MI (1) |
|  | **(Vartiainen &** |  |  |  |  |  |  |  |
|  | **Hakola, 1994) (1)** |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | **Un-named** | 2014 | Germany (1) | 185 | Prison (1) | Adult (1) | Male (1) | General (1) |
|  | **(Woessner &** |  |  | (185 : 0) |  |  |  |  |
|  | **Schwelder, 2014)** |  |  |  |  |  |  |  |
|  | **(1)** |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | **SUMMARY** | 1968 – 2014 | USA (30) | 49103 | Prison (48) | Adult (46) | Male (24) | General (31) |
|  |  | Pre-2000 (34) | England and Wales (28) | (39014 : 10089) | FPH (33) | Adol. (7) | Female (4) | PD (1) |
|  |  | Post-2000 (49) | The Netherlands (8) |  | Both (1) | Both (13) | Both (42) | MI (11) |
|  |  |  | Sweden (3) |  | Unspecified (1) | Unspecified (17) | Unspecified (13) | ID (3) |
|  |  |  | Germany (3) |  |  |  |  | Mixed (16) |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 41 |



USA & England (2) Unspecified (21)

Norway (2)

Australia (2)

Canada (2)

Finland (1)

Yugoslavia (1)

Unspecified (1)

*Note.* Numbers in brackets denote the number of studies; Adult refers to studies sampling individuals aged 18 years or older and adolescent refers to thoseaged 17 years or younger; General = individuals without a primary diagnosis of MI, PD, or ID; PD = Personality Disorder (e.g., antisocial, borderline); MI = Mental Illness (e.g., substance abuse disorder, schizophrenia); ID = Intellectual Disability; Mixed type of service = a sample containing a combination of diagnoses (MI, PD, ID, and / or general); CIES / WAS = Correctional Institutions Environment Scale / Ward Atmosphere Scale; EssenCES = Essen Climate Evaluation Schema; PGCI = Prison Group Climate Instrument; PEI = Prison Environment Inventory; MQPL / SQL = Measuring the Quality of Prison Life for prisoners questionnaire / the Staff Measuring the Quality of Prison Life questionnaire; Styve / MacKenzie = the Styve / MacKenzie questionnaire; PSCS = Prison Social Climate Survey; EQS = Environmental Quality Scale; FSS = Forensic Satisfaction Scale

1. Two out of the three studies using the Styve / MacKenzie questionnaire did not specify the sample size.

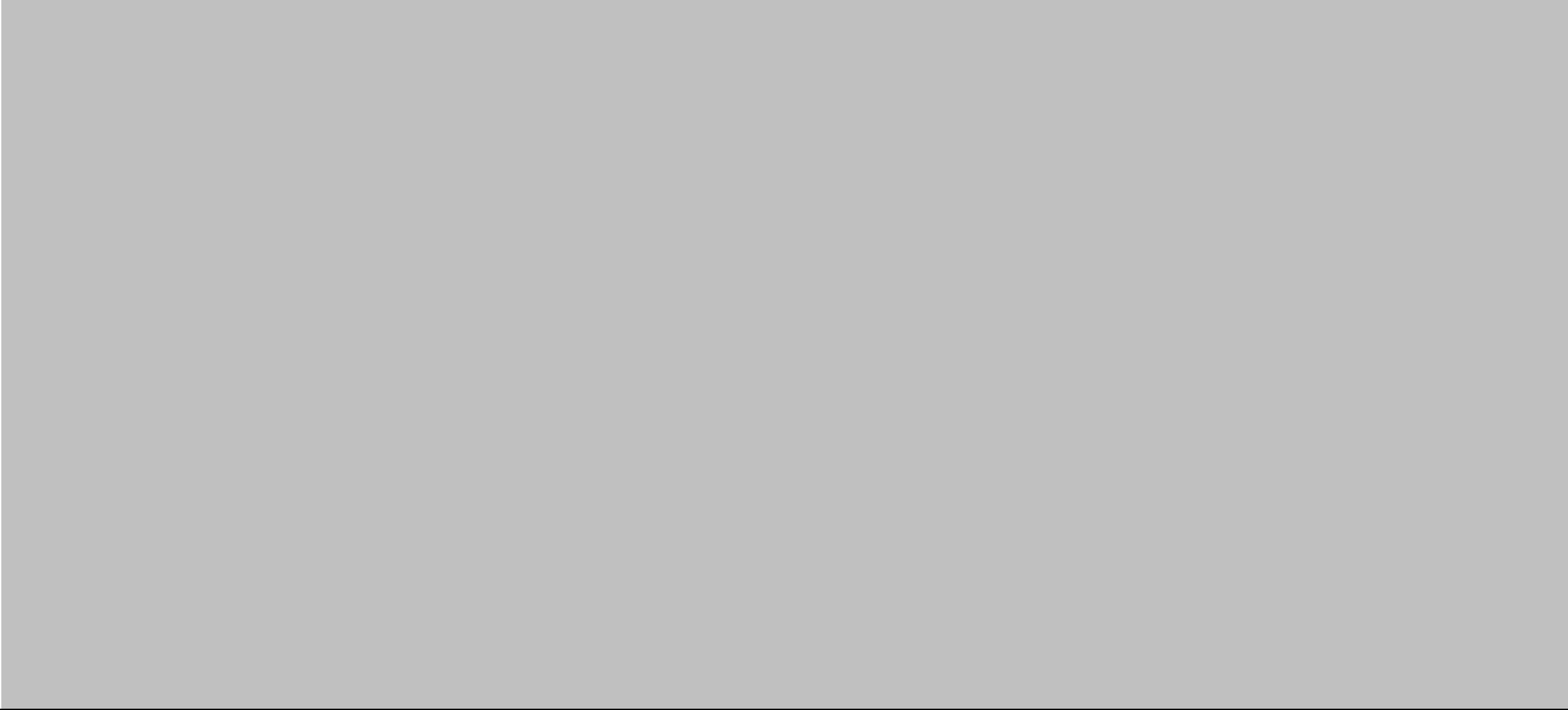
42

Table 2

*A Descriptive Summary of the Social Climate Questionnaires*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Questionnaire** | **Number of** | **Number of Scales** |  | **Brief Description of Scales** |
|  | **Items** |  |  |  |
|  |  |  |  | |
| **CIES / WAS** | 90 (CIES) | 9 scales, 3 higher-order factors (CIES) | *Higher-Order Factor 1: The Relationship Dimension* | |
|  | 100 (WAS) | 10 scales, 3 higher-order factors (WAS) | 1) Involvement; 2) Support; 3) Spontaneity. | |
|  |  |  | *Higher-Order Factor 2: The Personal Growth Dimension* | |
|  |  |  | 4) | Autonomy; 5) Practical Orientation; 6) Personal Problem Orientation; |
|  |  |  | 7) | Anger and Aggression (excluded from the CIES). |
|  |  |  | *Higher-Order Factor 3: The System Maintenance Dimension* | |
|  |  |  | 8) | Order and Organization; 9) Clarity; 10) Staff Control. |
|  |  |  |  |  |
| **EssenCES** | 15 (scored) | 3 scales | 1) | Therapeutic Hold; 2) Experienced Safety; 3) Residents’ Cohesion and |
|  |  |  | Mutual Support. | |
|  |  |  |  | |
| **PGCI** | 36 (Full scale) | 4 scales, 2 higher-order factors | *Higher-Order Factor 1: Open Group Climate* | |
|  | 23 (Short Form) |  | 1) | Support; 2) Growth; 3) Group Atmosphere. |
|  |  |  | *Higher-Order Factor 2: Closed Group Climate* | |
|  |  |  |  |  |
|  |  |  |  | 43 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  | 4) | Repression. |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **PEI** | 48 | |  | 8 scales | | 1) | Structure; 2) Emotional Feedback; 3) Activity; 4) Safety; 5) Social; 6) | |  |
|  |  |  |  |  |  |  | Privacy; 7) Freedom; 8) Support. | | |  |
|  |  |  |  |  |  |  |  | | |  |
|  | **MQPL / SQL** |  | 140 (MQPL) |  | 21 scales, 5 higher-order factors (MQPL) |  | **MQPL** | |  |  |
|  |  |  |  |  |  |  |  | |  |  |
|  |  |  | 117 (SQL) |  | 17 scales (SQL) |  | *Higher-Order Factor 1: Harmony* | |  |  |
|  |  |  |  |  |  |  | 1) | Entry into Custody; 2) Respect/Courtesy; 3) Staff-Prisoner |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | Relationships; 4) Humanity; 5) Decency; 6) Care for the Vulnerable; 7) | |  |  |
|  |  |  |  |  |  |  | Help and Assistance. | |  |  |
|  |  |  |  |  |  |  | *Higher-Order Factor 2: Professionalism* | |  |  |
|  |  |  |  |  |  |  | 8) | Staff Professionalism; 9) Bureaucratic Legitimacy; 10) Fairness; 11) |  |  |
|  |  |  |  |  |  |  | Organization and Consistency. | |  |  |
|  |  |  |  |  |  |  | *Higher-Order Factor 3: Security* | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |



12) Policing and Security; 13) Prisoner Safety; 14) Prisoner Adaptation;

15) Drugs and Exploitation.

*Higher-Order Factor 4: Conditions and Family Contact*

16) Regime Decency; 17) Family Contact.

44

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | *Higher-Order Factor 5: Well-Being and Development* |
|  |  |  | 18) Personal Development; 19) Personal Autonomy; 20) Well-Being; 21) |
|  |  |  | Distress. |
|  |  |  | **SQL** |
|  |  |  | 1) Treatment by Senior Management; 2) Attitudes Towards Senior |
|  |  |  | Management; 3) Perception of Prison Service; 4) Relationship with Peers; |
|  |  |  | 5) Relationship with Line Management; 6) Treatment by SOs and POs; 7) |
|  |  |  | Commitment; 8) Safety/Control/Security; 9) Recognition and Personal |
|  |  |  | Efficacy; 10) Involvement in Prison; 11) Involvement in Work; 12) |
|  |  |  | Stress; 13) Relationships with Prisoners; 14) Social Distance; 15) |
|  |  |  | Professional Support; 16) Authority Maintenance; 17) Views on |
|  |  |  | Punishment and Control. |
|  |  |  |  |
| **Styve / MacKenzie** | 129 | 13 scales, 3 higher-order factors | *Higher-order factors* |
|  |  |  | 1) Therapeutic Environment; 2) Hostile Environment; 3) Freedom and |

Choice.

*Scales (not indicated which scales fall under which higher-order factors)*

45

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  | 1) | Control; 2) Resident Danger; 3) Danger from Staff; 4) Environmental |
|  |  |  | Danger; 5) Activity; 6) Care; 7) Risks to Residents; 8) Quality of Life; 9) | |
|  |  |  | Structure; 10) Justice; 11) Freedom; 12) Therapeutic Programs; 13) | |
|  |  |  | Preparation for Release. | |
|  |  |  |  |  |
| **PSCS** | 121 | 3 sub-sections | 1) | Environmental Quality of Life; 2) Personal Well-Being; 3) Personal |
|  |  |  | Safety and Security. | |
|  |  |  |  |  |
| **EQS** | 21 | 7 scales | 1) | Privacy; 2) Safety; 3) Certainty; 4) Assistance; 5) Support; 6) Activity; |
|  |  |  | 7) | Autonomy. |
|  |  |  |  |  |
| **FSS** | 60 | 6 scales | 1) | Staff Interaction; 2) Rehabilitation; 3) Communication; 4) Milieu; 5) |
|  |  |  | Finance; 6) Safety. | |
|  |  |  |  | |
| **Un-named** | 15a | 1 scale | 1 scale measuring psychosocial climate (no further information available). | |
| **(Harenstam et al.,** |  |  |  |  |
| **1998)** |  |  |  |  |
|  |  |  |  | |
| **Un-named** | 17b | 1 scale | 1 scale tapping ward atmosphere, with items measuring perceptions of | |
| **(Vartiainen &** |  |  | safety, staff attitudes towards patients, and the amount of support | |
| **Hakola, 1994)** |  |  | available. | |
|  |  |  |  |  |
|  |  |  |  | 46 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Un-named** | 60 | 4 scales | 1) Restriction of Autonomy; 2) Hostile Attitudes Towards Prison Staff; 3) |
| **(Woessner &** |  |  | Fear of Inmates; 4) Non-Supportive Prison Climate. |
| **Schwelder, 2014)** |  |  |  |

1. There is a 15-item psychosocial climate scale within a larger scale that measures the perceived working environment of prison staff.
2. There is a 17-item ward atmosphere scale within a larger measure.

47

Table 3

*A Summary of Psychometric Evidence for the Social Climate Questionnaires*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Questionnaire** | **Tests of Internal** |  | **Tests of Factor** | **Tests of Reliabilityc** | **Tests of Convergent /** | **Tests of Responsivenessd** |
|  | **Consistencya** |  | **Structureb** |  | **Divergent Validity** |  |
|  |  |  |  |  |  |  |
| **CIES / WAS** |  |  |  |  |  |  |
|  | (3 studies) |  | (6 studies) | (2 studies) | (9 studies) | (27 studies) |
|  | Summarised in the text |  | Summarised in the text | Summarised in the text | Summarised in the text | Summarised in the text |
|  |  |  |  |  |  |  |
| **EssenCES** |  |  |  |  |  |  |
|  | (10 studies) |  | (6 studies) | (1 study) | (10 studies) | (10 studies) |
|  | Summarised in the text |  | Summarised in the text | Summarised in the text | Summarised in the text | Summarised in the text |
|  |  |  |  |  |  |  |
| **PGCI** |  |  |  |  |  |  |
|  | (6 studies, overlap |  | (2 studies) | (0 studies) | (3 studies) | (0 studies) |
|  | between samples unclear) |  | CFA on the most recent |  | Statistically significant |  |
|  |  |  |  |  |  |  |

48

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Higher-order factors (4 |  | version produced |  | relationships between |  |  |
|  | studies): *Lowest α* = 0.70 |  | acceptable fit statistics, |  | social climate and |  |  |
|  | (Closed Climate); *Highest* |  | with factor loadings |  | aggression, active coping, |  |  |
|  | *α* = 0.94 (Open Climate) |  | ranging from 0.38 – 0.95. |  | passive coping, locus of |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  | Unclear if cross-loadings |  | control, treatment |  |  |
|  | Scales (4 studies) *Lowest* |  |  |  | motivation, length of |  |  |
|  |  |  |  |  |  |
|  | *α* = 0.61 (Repression); |  |  |  | incarceration, cognitive |  |  |
|  | *Highest α* = 0.90 (Support) |  |  |  | empathy, Big Five |  |  |
|  |  |  |  |  | personality, and |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |



inappropriate responses to

social situations

**PEI**  

(2 studies) (1 study)

*Lowest α* = 0.40 Only seven out of eight

(Emotional Feedback); scales were empirically

|  |  |  |
| --- | --- | --- |
|  |  |  |
| (1 study) | (4 studies) | (3 studies) |
| Data split in half and two | Statistically significant | Statistically significant |
| EFAs run on each half. No | relationships between | differences in social |

49

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *Highest α* = 0.76 (Safety) | supported by EFA. Factor | statistical comparisons and | climate and cell sharing, | | climate between different | |  |
|  | (1 study) | loadings ranged from 0.27 | limited data presented. | disruptive infractions, | | prisons, between males | |  |
|  |  | – 0.67, 10 items loaded |  | stress-related sick calls, | | and females, and between | |  |
|  | Average item-scale | below 0.40 and there was |  | and self-reported | | boot camp and | |  |
|  | correlation = 0.58 (0.51 – | one cross-loading item. |  | internalising, externalising | | ‘traditional’ prisons | |  |
|  | 0.68) (1 study) | Inter-scale correlations, *r* |  | and physical problems | |  |  |  |
|  |  | = ±0.01 – 0.45 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **MQPL / SQL** |  |  |  | / |  | / |  |  |
|  |  |  |  |  |  |  |
|  | (3 studies) | (2 studies) | (0 studies) | (1 study) |  | (2 studies) |  |  |
|  |  |  |  |  |  |  |
|  | MQPL (1 study, most | MQPL (1 study): A series |  | MQPL (1 study): |  | MQPL: 0 studies testing |  |  |
|  |  |  |  |  |  |  |
|  | recent version): *Lowest α* | of PCAs and theory- |  | Statistically significant |  | responsiveness of the |  |  |
|  |  |  |  |  |  |  |
|  | = 0.56 (Distress); *Highest* | driven amendments (little |  | correlations between |  | latest version |  |  |
|  |  |  |  |  |  |  |
|  | *α* = 0.89 (Humanity) | statistical detail given) |  | social climate scores and |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | perceived quality of |  | SQL (2 studies): |  |  |
|  | SQL (1 study, most recent | SQL (1 study): EFA |  | healthcare |  | Statistically significant |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

50

**Styve /**

**MacKenzie**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| version): *Lowest α* = 0.50 |  | supported a three-factor |  |  |  | differences in social |
| (Authority Maintenance); |  | structure, rather than the |  | SQL: 0 studies testing |  | climate between different |
| *Highest α* = 0.94 |  | more complex 17-factor |  | convergent / divergent |  | prisons and between |
| (Treatment by Senior |  | structure |  | validity |  | prisoners versus staff |
|  |  |  |  |  |  |  |
| Management) |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| (3 studies) |  | (2 studies) | (0 studies) | (1 study) |  | (2 studies) |
| Higher-order factors (1 |  | Inter-scale correlations (1 |  | Statistically significant |  | Statistically significant |
| study): *Lowest α* = 0.78 |  | study), *r* = 0.05 – 0.63, |  | relationships observed |  | differences in social |
| (Freedom and Choice); |  | EFA (1 study), factor |  | between social climate |  | climate between boot |
| *Highest α* = 0.93 |  | loadings = 0.40 – 0.66, |  | and measures of anxiety |  | camps and ‘traditional’ |
| (Therapeutic |  | CFA (1 study, no further |  | and depression |  | facilities after controlling |
| Environment) |  | statistical details given) |  |  |  | for covariates, but no |
|  |  |  |  |  |  | differences between |
| Scales (2 studies): *Lowest* |  |  |  |  |  | private and public prisons |

51

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *α* = 0.45 (Preparation for |  |  |  |  |
|  | Release); *Highest α* = 0.90 |  |  |  |  |
|  | (Therapeutic Programs) |  |  |  |  |
|  |  |  |  |  |  |
| **PSCS** |  |  |  |  |  |
|  | (0 studies) | (1 study) | (1 study) | (0 studies) | (1 study) |
|  |  | EFA, followed by CFA | Slightly different factor |  | Statistically significant |
|  |  | Factor loadings ranged | structures across UK and |  | differences in climate |
|  |  | from 0.20 – 0.98, with 12 | US samples, but generally |  | scores between UK and |
|  |  | loadings below 0.40 | comparable and |  | US samples |
|  |  | (cross-loadings unclear) | comparable when split- |  |  |
|  |  |  | half performed |  |  |
|  |  |  |  |  |  |
| **EQS** |  |  |  |  |  |
|  | (1 study) | (1 study) | (0 studies) | (0 studies) | (0 studies) |
|  | *Lowest α* = 0.34 | Inter-scale correlations, |  |  |  |
|  |  |  |  |  |  |

52



**FSS**

**Un-named (Harenstam et al., 1998)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (Assistance, initial | mean *r* initial testing = |  |  |  |
| testing); *Highest α* = 0.78 | 0.30 (0.03 – 0.58), mean *r* |  |  |  |
| (Autonomy, follow-up | follow-up testing = 0.34 |  |  |  |
| testing) | (0.01 – 0.63) |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| (1 study) | (1 study) | (0 studies) | (1 study) | (0 studies) |
| *Lowest α* = 0.50 (Finance); | PCA performed but no |  | Statistically significant |  |
| *Highest α* = 0.95 (Staff | statistical details of factor |  | correlations between the |  |
| Interaction) | loadings, percentage of |  | FSS and the Verona |  |
| Total scale *α* = 0.91 | variance explained etc. |  | Service Satisfaction Scale |  |
|  |  |  |  |  |
|  |  |  |  |  |
| (0 studies) | (0 studies) | (0 studies) | (1 study) | (0 studies) |
|  |  |  | Statistically significant |  |
|  |  |  | relationship between |  |

53



**Un-named (Vartiainen & Hakola, 1994)**

**Un-named (Woessner & Schwelder, 2014)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  | social climate and |  |
|  |  |  | physiological measures of |  |
|  |  |  | stress (e.g., cortisol), but |  |
|  |  |  | no relationship with staff- |  |
|  |  |  | resident ratio |  |
|  |  |  |  |  |
|  |  |  |  |  |
| (0 studies) | (0 studies) | (0 studies) | (0 studies) | (1 study) |
|  |  |  |  | Largely non-significant |
|  |  |  |  | changes to social climate |
|  |  |  |  | when CCTV monitoring |
|  |  |  |  | introduced to secure wards |
|  |  |  |  |  |
|  |  |  |  |  |
| (1 study) | (0 studies) | (0 studies) | (1 study) | (0 studies) |
| *Lowest α* = 0.77 (Non- |  |  | Statistically significant |  |

54

|  |  |
| --- | --- |
| Supportive Prison | correlations between |
| Climate); *Highest α* = | social climate and change |
| 0.88 (Restriction of | in dynamic risk pre- to |
| Autonomy) | post-treatment |

*Note.* KR-20 = Kuder-Richardson-20; PCA = Principal Components Analysis; CITC = Corrected Item-Total Correlation Coefficients; CFA = ConfirmatoryFactor Analysis; EFA = Exploratory Factor Analysis.

1. A study is classed as having conducted a test of internal consistency when it reports Cronbach’s α, KR-20 scores, CITC, and / or inter-item / item-subscale correlations.
2. A study is classed as having conducted a test of factor structure when it reports PCA, CFA, EFA, and / or inter-scale correlations.
3. A study is classed as having conducted a test of reliability when it reports test-retest, split-half coefficients, and / or statistical comparisons of factor structure across samples.
4. A study is classed as having conducted a test of responsiveness when it reports comparisons of the social climate between different individuals or different settings that would theoretically be expected to differ in terms of climate.

55

**Endnotes**

1. Where there was insufficient information in the abstract to determine suitability, the full-text article was accessed.
2. Responsiveness is one of several fundamental concepts that should be considered when examining the psychometric properties of a questionnaire, and is defined as the ability of an instrument to detect changes (Fitzpatrick et al., 1998; Urbina, 2004). In the context of the current review, social climate is considered to be a dynamic feature of secure settings that is subject to fluctuation over time and is expected to vary across different settings / with different individuals. Thus, one might test the responsiveness of a given social climate questionnaire by examining whether climate scores alter after notable changes or interventions are administered within a secure setting (e.g., a unit might move to a new building or a new method of working might be adopted). Theoretically, one would expect changes to the social climate after such interventions and, if such changes are not detected, this might suggest that the questionnaire is not responsive. Also, responsiveness might be tested by comparing the social climate scores obtained by different types of individual or in different types of secure setting that would theoretically be expected to differ. For example, one might expect staff and residents to have very different perceptions of the social climate. Likewise, one might expect differences in the social climate of low compared to high security units because of the greater restrictions on personal freedom. Again, if a questionnaire does not detect such differences this might suggest that the questionnaire is not responsive. A lack of responsiveness should be considered a negative feature of a social climate questionnaire.
3. It should be noted that this number contains duplicates.
4. It should be noted that Alderman and Groucott (2012) also examined the factor structure and

internal consistency of the EssenCES with a population from the National Brain Injury Centre, UK, but this study was excluded because it was unclear whether the population studied was exclusively a ‘forensic’ sample.

56

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57