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The relationship between ward social climate, ward sense of community and incidents of disruptive behaviour: A study of a high secure psychiatric sample

Ignazio Puzzo [1], Luke Aldridge-Waddon[2], Emma Bush[3] & Catherine Farr [4]

1. City University of London
2. Brunel University of London
3. Cardiff University
4. Broadmoor Hospital (West London Mental Health Trust)

Social Climate, Community and Assaultive Behaviour

Abstract

Assaults and seclusions within ~~psychiatric services~~ the UK impede patient recovery, and carry a combined UK cost of £126 million a year. Research has identified low ward social climate as a factor that contributes to such institutionalised disruptive behaviour. A related concept, sense of community, has been associated with disruptive behaviour in non-clinical communities, but has not been studied in forensic or psychiatric settings – and thus its contribution to disruptive behaviour in secure psychiatric care is unknown. The current study investigates the relationship between self-reported sense of community and social climate scores with incidents of disruptive behaviour (i.e. assaults and seclusions) within a UK high secure psychiatric hospital. Findings reveal that both social climate and sense of community predict incidents of disruptive behaviour, with hierarchical modelling suggesting that sense of community is the better predictor of disruptive behaviour. This study argues that sense of community should be monitored in high secure hospitals.

Social Climate, Community and Assaultive Behaviour

Introduction

Social climate is a fundamental factor within the treatment of mentally disordered offenders residing in secure psychiatric settings (Tonkin et al., 2012). In clinical environments, social climate can be viewed as a multidimensional construct which describes the therapeutic milieu of the ward environment encompassing the material, social and emotional conditions of a ward as well as the interactions between these components (Moos, Shelton, & Petty, 1973; Bressington, Stewart, Beer and MacInnes 2011). Social climate is typically measured by the Ward Atmosphere Scale (WAS; Moos, 1989*)* or the Essen Climate Evaluation Schema (EssenCES; Schalast, Redies, Collins, Stacey, & Howells, 2008). The EssenCES has "received the most empirical support" (Tonkin, 2016, p. 2) and measures social climate on three dimensions: *Therapeutic Hold* (the perception of the ward as supportive of patients' therapeutic needs and the quality of therapeutic relationships), *Experienced Safety* (perceived safety from aggression and violence) and *Patients' Cohesion and Mutual Support* (the extent that community members offer positive support and are cohesive in each other's rehabilitation and recovery). Research shows that social climate is associated with patient treatment engagement and discharge (Beech and Hamilton-Giachritis, 2005; Moos et al., 1973) as well as staff and patients' satisfaction with the ward (Rossberg & Friis, 2004). Moreover, high social climate scores are negatively correlated with behavioural disturbance, showing the importance of ward atmosphere in reducing assaults and seclusions (Long et al., 2010).

The established relationship between social climate and both therapeutic and organisational outcomes suggests that ward climate is fundamental in facilitating the rehabilitation of mentally disordered offenders and their progression from high security to lower security and

community services. Indeed, Friis (1986) proposed that "The patient perception of the ward milieu must be expected to be a most important indicator of how the milieu affects the patients" (p. 591). This statement highlights the importance of one's individual perception of the ward environment, as opposed to the environment as viewed from an outsider's perspective, in determining the wards influence on treatment engagement and behaviour.

In addition to social climate, an individual's perception of the social and emotional conditions of a group is the key determinant of a related concept – Sense of Community (SOC). SOC is a psychological construct that describes the subjective experience of being part of an interdependent and stable collective (Sarason, 1974). McMillan and Chavis (1986) conceptualised SOC as a "feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together"(p. 9). They emphasised four components that were fundamental to the perception of a SOC: *Membership*, a sense of belonging, identification and emotional safety; *Influence*, a feeling that one can make a difference to the community and that the community can influence its members; *Fulfilment of Needs,* a perception of reward, that one's needs are met as a result of community membership; and *Shared Emotional Connection,* positive affect associated with membership and shared experiences (McMillian & Chavis, 1986; Pretty, Bishop, Fisher, & Sonn, 2006). SOC can be assessed by the SOC index revised (SCI-2; Chavis, Lee, & Acosta, 2008) which creates an overall SOC score - as well as scores for each of the four facets.

Sarason (1974) claimed that a psychological SOC is key to the success of a group and the well-being of its members. Within forensic psychiatric settings, treatment engagement and wellbeing are paramount to the successful rehabilitation of patients - however a literature

search revealed no evidence of SOC being investigated in such environments. Nevertheless, there are several reasons that one might expect a SOC to be related to therapeutic and organisational outcomes within forensic psychiatric services and which would warrant further investigation of SOC in secure hospitals.

Firstly, SOC "provides a buffer against physical and psychological symptoms of illness, and facilitates adjustment" (Pretty et al., 2007, p. 12) within the general population and clinical non-forensic settings. Patients recovering from coronary heart disease rated communication with people who had shared similar experiences and histories, as well as engaging in meaningful roles and activities as most important to rehabilitation – taking precedence over education, diet and exercise (Scuderi, 2005). Similar benefits have been observed in studies of psychological well-being (McLaren, Jude, & McLachlan, 2007). Davidson and Cotter (1991) found that SOC was significantly related to happiness, worrying and personal coping in the general population. Building upon this, Prince and Gerber (2005) found that a sense of belonging, and a greater community presence were associated with subjective well-being and life satisfaction in 92 patients with serious mental disorders (including schizophrenia and personality disorders) receiving treatment from assertive community treatment teams.

SOC is also associated with the engagement and behavioural conduct of group members (Anderson 2009; Talò, Mannarini, & Rochira, 2014). Peterson and Reid (2003) found that members of the general population who scored higher on the SOC index (McMillan, & Chavis, 1986) participated more in substance abuse prevention activities and reported more psychological empowerment than those with a lower SOC. Conversely, a poor or absent SOC is associated with decreased engagement and transgression. Battistich and Hom (1997) found schools with lower student-rated SOC scores had a higher number of problem behaviours

including property damage, possession of a weapon, stealing, verbal threats and intentional harm to others.

Secondly, research into the antecedents of aggression on psychiatric wards, and interventions designed to reduce aggression in such environments, imply that SOC is related to behavioural disturbances in secure psychiatric settings. On an individual level, engagement in aggressive behaviours can result in: Loss of privileges e.g. phone calls, outdoor walks, visitations; ward movement; and containment measures (Bowers, Simpson, & Alexander, 2003), as well as negative staff outcomes such as neuroticism and stress (Inoue et al., 2006; Needham et al., 2005). On a ward-based or community level, aggressive acts can result in: Cancellation of activities, the addition or loss of ward members, property damage, and a negative social ward climate (Van der Helm, 2011). The financial costs of aggression within inpatient psychiatric services are also high; verbal assaults cost the UK an estimated £10 million per year, incurring another £8 million when it escalates to physical aggression towards objects or people (£3 million and £5 million respectively) (Flood, Bowers, & Parkin, 2008) and, of the 68,683 assaults reported by NHS staff in 2013-2014, 69% occurred in mental health care settings (NICE, May 2015). This suggests that aggression within psychiatric services is a financial burden within health services. Furthermore, a meta-analysis of 71 studies investigating aggression and violence in inpatient psychiatric settings identified 'staff-patient interaction' as the most frequent antecedent theme, accounting for 39% of incidents (Papadopoulos et al., 2012). The work of Papadopoulos et al (2012) lays a good foundation for this research, in that it identifies behavioural factors that our research interprets in the context of sense of community: Disputes over medication (corresponds to *Influence* as the patient feels that they have a lack of involvement in their treatment plans), Negative staff attitudes and ordering patients (corresponds to *Shared Emotional Connection* as it emphasises

a lack of positive affect), Miscommunication (corresponds to *Membership* and a lack of identification between staff and patients), Permissive staff and Limiting patients' freedom (both describe either a lack of concern or restrictions and thus correspond to *Fulfilment of Needs*). 'Limiting patients' freedom', which ranged from verbal reminders of boundaries to restrictive containment practices i.e. seclusion and restraint, accounted for 25% of all antecedents. Although vital to maintaining a safe community, setting limits can also trigger further aggression and violent responses from patients (National Institute of Clinical Excellence, 2005; Bjørkly, 1999). Both staff and patients acknowledge that while setting limits is important for safety, it can create hostility because of the way limits are enforced (Meehan, McIntosh and Bergen, 2006; ~~MacQuire~~ Maguire, Daffern and Martin, 2014). Furthermore, containment measures i.e. seclusions, restraints, observations, and medications incur a high financial cost estimated at £106 million per year in the UK (Ward, 2011). Consequently, numerous attempts have been made to develop interventions which reduce the need for restrictive practice.

The core strategies used in most successful seclusion/restraint reduction programmes allude to the importance of SOC in maintaining a safe and therapeutic environment on secure wards. In a systematic review of seclusion-restraint reduction programs, Goulet, Laurue and Dumais (2017) identified 'Post-Seclusion and Restraint Review', 'Patient Involvement' and 'Therapeutic Environment' as key components to reducing seclusions in psychiatric wards. This research, as well as that cited above, paints a picture of social climate and SOC as key factors in understanding disruptive behaviour and how to best manage and reduce incidents within secure psychiatric settings. It is critical then that we understand whether social climate and SOC relate to disruptive behaviour; and whether we can predict frequency of disruptive behaviour based on social climate and SOC measures.

In review of the literature, we propose that the associations between SOC and the well-being and behaviour of group members that have been observed in non-forensic samples (e.g. McMillan, & Chavis, 1986) will also exist in forensic psychiatric settings. We propose that both social climate and SOC will be associated with the frequency of disruptive behaviour in high-secure psychiatric care (HSPC). More specifically, we hypothesise that ward-based SCI-2 score and EssenCES score will ~~predict~~ relate to number of incidents and short-term seclusion hours on the wards within a UK high secure psychiatric hospital. Social climate and SOC complement each other in that they both measure the perception of social and emotional conditions of an environment. However, SOC and social climate are also distinctive in that the EssenCES primarily measures the atmospheric quality of the environment; whereas SCI-2 focuses more on the collective quality of interactions among community members (Pretty, 1990). Based on this, we predict that EssenCES and SCI-2 scores will be positively correlated. Moreover, we expect that both measures will be independently associated with incident and seclusion target achievement when controlling for the other one due to the discrete discrepancies between social climate and SOC as constructs.

Method

Ethics

This research took place in accordance with all research ethics guidelines given by the NHS and the West London Mental Health Trust. This project stemmed from the Commissioning for Quality and Innovation (CQUIN) framework that supports improvements in the quality of services and the creation of new, improved patterns of care. Permission to undertake this study was sought and granted from the clinical governance body within the hospital.

Participants

Participants were recruited for this study via opportunity sampling and recruitment took place on six wards within a high secure psychiatric hospital in the UK. The sample included three high dependency and three assertive rehabilitation wards. High dependency wards provide a highly-structured environment in which to manage a patient's risk and stabilise their mental state and behavioural disturbance - with the aim of progression to a ward of lesser dependency. On assertive rehabilitation wards, patients are encouraged to take individual responsibility for their care and to engage in therapy and rehabilitation activities both on and off ward. Staff and patients were encouraged to take part and asked to complete both questionnaires. One hundred and eleven participants were recruited (69 staff and 42 patients), of which 49 were from high dependency wards and 62 from assertive rehabilitation wards. Not all 111 participants completed both questionnaires: 111 completed EssenCES and 102 completed SCI-2. 30.6% of staff based on the three high dependency wards and 31.5% on the three assertive rehabilitation wards responded. 41.7% of patients on the three high dependency wards and 50.9% of patients from the three assertive rehabilitation wards took part.

Materials

The Essen Climate Evaluation Schema (EssenCES) (Schalast et al, 2008) is a 17-item questionnaire designed to assess social climate. The questionnaire has three subscales: *Therapeutic hold*, *experienced safety*, *patient cohesion* and *mutual support*. High scores suggest a positive social climate.

The SOC Index (SCI-2) (Chavis, Lee & Acosta, 2008) is a revised version of the SOC Index (Chavis, 2008). The questionnaire has four subscales that assess the elements of SOC described by McMillan and Chavis (1986): *Membership*, *influence*, *meeting needs*, and *shared emotional connection*. Higher scores suggest a greater feeling of SOC.

Design

This study adopted a correlation design in which the association between covariates (social climate, SOC scores and disruptive behaviour) was studied using high-dependency and assertive rehabilitation samples. Incident report and seclusion data were accessed as measures of disruptive behaviour.

Incident report: Incident report data (logged independently on the hospital's system) for the six wards was accessed, for the six-month period from 01/05/2016 to 31/10/2016. The hospital has several incident categories; only some of which are relevant to ward SOC. Incident relevant to ward SOC was operationalised as any logged incident describing: Physical assault to staff member by patient, physical assault to patient by patient, ~~verbal~~ non-physical assault towards staff member by patient, non-physical assault towards patient by patient and low staffing levels (which noted restricted patient activity as a result - for example, if the ward has a low number of staff they may not be able to facilitate a planned on-ward activity, which will have an effect on ward morale, patient interest, and sense of community). The incident types were grouped as physical incidents and non-physical incidents, with the former encompassing all physical assaults and the latter including verbal assaults and issues of low staffing levels. These incidents were included irrespective of whether the victim was a staff member or patient, as staff and patients both contribute to a

ward community ~~equally~~, and so their thoughts, feelings, and behaviours as victims ~~with~~ will influence ward environment and SOC in ~~equal~~ similar ways.

Incident report cases were excluded if: The incident occurred in non-communal areas (e.g. patient room), if the incident occurred whilst patient was in seclusion (i.e. through hatch assault), if the incident occurred in resistance to or because of medication administration (as this is not to do with SOC influence, but other extraneous factors), if the incident showed an incident pattern (pattern being frequently occurring at the same day and time, that meant the ward community was expecting the incident to occur e.g. always against particular staff member at every door unlock or at every meal time because the patient always complains about the food). These incidents were excluded because they will not have a describable, and direct, impact upon ward social climate and SOC. Based on this exclusion criteria, 631 incidents were not included in the analysis.

Short term seclusions: Short term seclusion hours' data were sourced for the six wards for the six-month period from 01/05/2016 to 31/10/2016. Short term seclusion is defined as a behaviour management response to a one-off incident on the ward; that means that the patient requires a 'cooling-off period'. Reintegration following short term seclusion may well influence dynamic sense of community. Short term seclusion often lasts a few hours.

Procedure

The three high dependency wards and the three assertive rehabilitation wards were selected and the questionnaire packs (containing EssenCES and SCI-2) distributed to staff. The pack contained an information sheet describing both questionnaires, the purpose of the assessment

and provided contact details for the research team so that staff would have the opportunity to ask questions.

Patients were approached by members of the research team and were asked if they would like to contribute and were given the same materials as staff. They were told that they would receive five pounds as a thank you for their time. These payments were funded as part of a broader Sense of Community initiative within the hospital, and only patients received the payments. Some patients completed the questionnaires independently, whilst others required support.

All questionnaire data collection took place in October 2016. Once all responses had been collected, the incident and seclusion data were accessed for the six months prior to up to the end of questionnaire data collection (data for 01/05/16 – 31/10/16). This meant that there was a month overlap between the two data collection periods. The hypotheses (that EssenCES and SCI-2 scores will predict disruptive behaviour) is relevant, despite the data being structured in this way, as the two constructs are not temporally dependent, and we interpret the disruptive behaviour data to be an accurate illustration of 'business-as-usual' disruptive behaviour within the hospital.

Statistical Analysis

T-tests were run to assess differences in social climate and SOC readings for the high dependency and assertive rehabilitation (ward category) samples. The data did not violate any of the assumptions associated with computing t-tests.

A spearman's rho rank correlation was computed to investigate the extent to which the social climate and SOC scores (EssenCES and SCI-2) correlated with one another.

A series of binary logistic regressions were run to examine whether social climate and SOC scores (EssenCES and SCI-2) predicted incident report and seclusion hours. All assumptions of logistic regression were met. To treat each of these outcome measures as dichotomous (as required for a binary logistic regression) a target per outcome measure was calculated for each ward category. Details of the target setting procedure can be found below.

Incident report (IR1s): This was a method of identifying whether a ward had more incidents of disruptive behaviour per week than average. Incident report was stored for each ward within high dependency (A, B, C) and assertive rehabilitation (D, E, F) samples. The average (median) number of incidents per week per category (high dependency / assertive rehabilitation) was taken, and the median number of incidents per each ward (A, B, C, D, E, F) was also accessed.

The median number of incidents per ward and per category were compared using, for example, the median incident number of the high dependency group and each of the median incident numbers for the wards within the high dependency sample (A, B, C). If the median number of incidents of the ward was less than or equal to the median for its category, it was classed as on target (=0). Whereas, if its median was greater than the median of its category, it was classed as not on target (=1).

(STS): The median number of short term seclusion hours per month was calculated for each ward. In the same way as above, this median value was used to calculate the median number

of short term seclusion hours per month, per ward category. The median short term seclusion hours for each category (high dependency and assertive rehabilitation) was, again, used as a comparison point for each individual ward within each category. Targets were set for median number of short term seclusion hours per month. The rating as on or off target was done in the same way as above.

This research chose to analyse total EssenCES and total SCI-2 scores, rather than look at the subscales individually. It was felt that investigating the relationship between the subscales of these measures and disruptive behaviour was beyond the scope of this manuscript as, given the lack of research in this area, we first need to establish the nature of the relationship between these broad concepts. This approach is aligned with other work in this area (e.g. Howells et al. 2009) that highlights that, for example, the use of EssenCES total score can be appropriate and useful. In doing this though, this research was sure to only include 15 of the 17 items in scoring (as that is what is advised in the questionnaire manual; Schalast et al, 2008).

A chi square analysis was run to test for association between target achievement outcomes. This data set had no missing values.

<div align="center">Results</div>

Questionnaire Scores

The mean social climate and SOC scores, including staff and patient scores, per ward category (high dependency and assertive rehabilitation) are shown in Table 1.

Table 1 *(High Dependency = HD., Assertive Rehabilitation = AR).*

[table 1 about here]

EssenCES and SCI-2 scores were compared using high dependency and assertive rehabilitation samples. T tests revealed a significant difference in EssenCES scores between high dependency ($M = 30.69$, $SD = 7.11$) and assertive rehabilitation ($M = 35.56$, $SD = 8.36$), $t(104) = -3.253$, $p = .002$, samples. The similarity in SCI-2 scores across high dependency and assertive rehabilitation groups should also be highlighted, as it increases comparability between the two samples' state of SOC and indicates that neither group will unduly over-influence the logistic regression modelling.

A spearmans rho rank correlation was computed to investigate whether the SOC measures correlated with one another across the sample. EssenCES scores positively correlated with SCI-2 scores, $r(111) = .308$, $p = .002$.

Target Achievement

The medians of the outcome measures and the targets per category are shown in Table 2.

Table 2.

[table 2 about here]

A series of logistic regression analyses were run to ~~predict~~ examine the relationship between incident data and short-term seclusion target achievement per category (high dependency and assertive rehabilitation). Both measures (EssenCES and SCI-2) were loaded into logistic regression models as predictors.

Incident Report: EssenCES score significantly predicted overall IR1 target achievement, $B =$ .065, Exp(B) = 1.067, p = .032. SCI-2 score also significantly predicted overall IR1 target achievement, B = .050, Exp(B) = 1.051, p = .022. A stepwise hierarchical model (using forward selection via wald criterion) predicting overall IR1 target achievement was computed using both predictors (EssenCES and SCI-2), controlling for EssenCES score, and Wald Criterion indicated that SCI-2 score significantly predicts overall IR1 target achievement when EssenCES score is controlled for, p = .023. When SCI-2 is controlled for, EssenCES score does not predict overall IR1 target achievement, p = .394.

The model predicting non-physical IR1s from EssenCES scores was not significantly different to the constant, $X2(1)$ = 1.493, p = .222, and thus analysis was terminated. The model predicting non-physical IR1s from SCI-2 scores was found to be significant, B = .073, Exp(B) = 1.075, p = .023. Again, a hierarchical model with both predictors loaded, controlling for EssenCES score was run, and again SCI-2 was found to significantly predict non-physical IR1 target achievement, p =.023. When SCI-2 is controlled for, EssenCES score does not predict non-physical IR1 target achievement, p = .626.

The model predicting physical IR1s from EssenCES scores was found to be not statistically different to the constant, $X2(1) = 2.814$, $p = .093$ and thus no further analyses were run. The same can be said for the SCI-2 model, $X2(1) = .718$, $p = .397$.

As a safety measure, and to confirm the usefulness of the approach to filtering the incidents of disruptive behaviour as described above, binary logistic regression models were run but on the full set of incidents (i.e. including the 631 incidents that had previously been excluded). EssenCES score significantly predicted unfiltered overall IR1 target achievement, $B = .069$, $Exp(B) = 1.071$, $p = .009$. SCI-2 score also significantly predicted unfiltered overall IR1 target achievement, $B = .037$, $Exp(B) = 1.038$, $p = .034$. This result is similar to the findings of the analyses that included the filtered incidents, and so suggests that we are justified in taking a filtered approach to incident inclusion (different results would have suggested that filtering was unduly influencing the results). Thus, the remainder of this manuscript will consider the findings of the filtered approach.

Short-Term Seclusion Hours: Predicting STS target achievement, a test of the EssenCES model against a constant only model was not statistically significant, $X2(1) = 2.450$, $p = .118$, and thus no further analyses predicting STS target achievement from EssenCES scores were run. Likewise, the model predicting STS target achievement from SCI-2 scores was not significantly different to the constant, $X2(1) = 3.412$, $p = .065$.

Association between Outcome Measures

Given the categorical nature of the outcome variables, a chi square was computed to investigate the association between overall IR1 target achievement, non-physical IR1 target

achievement, physical IR1 target achievement and STS target achievement. The relation between overall IR1 target achievement and STS target achievement was statistically significant, $X2$ $(1, N =106) = 9.546$, $p = .002$, as it was between physical IR1 target achievement and STS target achievement, $X2$ $(1, N =106) = 4.816$, $p = .028$.

Discussion

We hypothesised that SOC and social climate would independently ~~predict~~ relate to disruptive behaviour target achievement (incidents and seclusions) on wards within a high secure psychiatric hospital. As described in the methods section, target achievement was operationalized as whether a ward met the disruptive behaviour median score for their particular ward category (high dependency and assertive rehab). Our second hypothesis ~~prediction~~, that there would be a positive correlation between SCI-2 (measure of SOC) and EssenCES (measure of social climate), proved to be accurate - confirming that SOC and social climate are related concepts. As independent logistic regression models, SOC and social climate predicted overall incident target achievement, but only SOC (not social climate) predicted non-physical incident target achievement. In line with our hypotheses, the relationship between SOC and incidents remained significant when controlling for social climate. Interestingly, however, and contrary to our expectations, social climate did not predict incident target achievement when controlling for SOC. There are several possible explanations for these findings.

Seclusions

Neither social climate nor SOC was related to seclusion target achievement which was contrary to our predictions. The current study looked at the duration spent in seclusion (number of hours) and not the frequency of seclusions, which might explain this finding. According to staff and patient reports, it is the actual act of restraint and placing a patient in seclusion after or during an assault which causes the most distress to all community members (Binder & McCoy, 1983; Wise et al., 1988; Fisher, 1995). Therefore, one might expect SOC and social climate to be at its lowest during, and shortly after, the incident and seclusion. Conversely, the removal of a high-risk and volatile patient into seclusion may restore a safe and therapeutic ward environment (Plutchik et al., 1978; Wynaden et al., 2001) and thus improve the ward SOC and social climate. Hence, one might expect the number of times that patients are secluded (i.e. the frequency of seclusions) to be most damaging to the SOC - more so than the amount of time spent in seclusion (i.e. the duration of seclusions) which the current study looked at.

EssenCES and SCI-2

There was a positive correlation between SCI-2 and EssenCES, demonstrating that SOC and social climate are related concepts. However, the differences in their predictive value suggest that EssenCES and SCI-2 are tapping into different constructs. The EssenCES is written in the third person and encourages extrospection by focusing on visible observable behaviours, for example 'Staff members take a lot of time to deal with patients'; 'Really threatening situations can occur here'. Whereas, the SCI-2 is written in the first person and uses emotive language, for example 'I get important needs of mine met because I am part of this community'; 'Being a member of this community makes me feel good'. Questions framed in the first person might have stronger associations with disruptive behaviours than questions framed in the third because they require introspection into one's own feelings. Aggression is

most likely to be caused by one's psychological appraisal of situations, and not the external observation of others, particularly among mentally disordered offenders where one's internal perceptions might differ markedly from reality (Nijman, 2002). Thus the SCI-2 might be more ~~predictive of~~ related to incident target achievement than the EssenCES because it is written in the first person and, as a result, taps onto the subjective perception component (as described by Friis (1986)) more than the EssenCES. "The patient perception of the ward milieu must be expected to be a most important indicator of how the milieu affects the patients" (p. 591).

As well as their lexical differences, the two questionnaires are structured differently. Social climate describes the ward's atmosphere as a product of the environmental, material and psychological conditions of the ward (Moos, 1989*)*. The EssenCES aims to address these multiple conditions in only 17 items which provides a shallow insight into the material and psychological conditions (see Tonkin, 2016 for a review*)*. SOC, on the other hand, focuses solely on the psychological conditions of the ward (i.e. the subjective appraisal of the value of group membership and evaluation of interpersonal relationships with other community members). The SCI-2 devotes 24 items to measuring this, thus providing deeper exploration into one of the determiners of social climate - and this deeper exploration may be related to ~~predictive~~ value. Nevertheless, our findings, that when controlling for SCI-2 scores, EssenCES scores did not predict incident target achievement, suggests it is SOC that is more strongly related to incidents in HSPC. Yet, the finding that EssenCES predicts incident target achievement in isolation also implies that it is those questions in the EssenCES which tap into SOC that are most ~~predictive of~~ related to incident target achievement.

Beyond methodology and the nature of the two questionnaires, one reason that the environmental or material conditions of the ward (as in EssenCES) might be less ~~predictive of~~ linked to incident target achievement could be due to the nature of the population studied. The current study was carried out in a high secure psychiatric hospital; an environment characterised by limitations (e.g. possessions, access to the outside areas, phone calls) and routine (e.g. set times for meals, medication, locked door policy at night). Both mean that the demands of the environment and the material conditions of the ward remain relatively consistent, (Dickens et al., 2014) and thus are less likely to dynamically affect the social climate in HSPC - at least in comparison to other populations. Whereas, the wards' psychological conditions (as in SCI-2) are far more dynamic and thus might be associated with feelings of loss or a sense of difference - as patients respond emotionally and socially to changes in personnel on the ward, for example. Furthermore, as part of their symptomatology (paranoia, emotional instability, manipulation), many of the services users are hypersensitive to interpersonal relationships and thus may be acutely aware of changes in a wards psychological conditions and be prone to cognitive distortions in their interpretation of situations in the ward (Nijman, 2002). This research suggests that it is these dynamic changes in ward psychological conditions, and service user sensitivity to these changes, that are more related to ~~driving~~ the disruptive behaviour (as seen in incident and non-physical incident target achievement) associated with HSPC - rather than the more fixed social climate.

Strengths and Limitations

Whilst this research would have been justified in including patient-only responses (as patients are the main perpetrators of ward incidents), we felt that staff perceptions would also play a role in the build-up to such incidents. For example, staff feelings of group membership and

staff perception of social conditions may influence their behaviour and interactions whilst at work - and so affect their interpersonal relationships with patients, a known antecedent of aggression (Duxbury, & Whittington, 2005). Indeed, staff reactivity or hypervigilance to threat may be a product of lower sense of community, as staff members feel isolated and at risk; particularly during periods of short-staffing. Having said that, this research chose not to analyse staff and patient responses separately. Whilst this could be a point of concern, before grouping staff and patient responses, parametric analyses were conducted and confirmed that the questionnaire scores of staff and patient groups were not statistically different to one another and so we felt it appropriate to aggregate responses. Whilst this research has chosen not to analyse staff and patient scores separately, future research could look to do this to see whether staff or patient attitudes towards ward social climate and SOC are more strongly related to incidents ~~predictive~~ of disruptive behaviour.

The current study accessed incident and seclusion data which is reported in line with hospital regulation and is stored in a password protected database. Averaging (via median) routinely reported incidences of disruptive behaviour over a six-month period provided a more representative and a more ecologically valid understanding of disruptive behaviour within a high secure psychiatric hospital. This median was used as a target number of incidents and seclusions and the achievement of this target i.e. the number of incidents at or below the target (yes/no), was the outcome variable. Whilst some might argue that the allocation of target achievement (yes/no) is arbitrary, and that it would have been better to look at the data in continuous, rather than categorical, form (number of incidents of disruptive behaviour over six months), this method was most appropriate given the style of the data. For example, whilst the disruptive behaviour data spanned a six-month period, social climate and SOC scores were collected at one point in one month only - so a linear regression based on two

continuous variables would not have been feasible. Further, by assigning a binary measure (target achievement yes/no) we were sensitive to the differences between high dependency and assertive rehabilitation wards and could assign a target (based on median values) unique to their category. Equally, independent of this research, each ward in the hospital often chooses to assign a target for the number of incidents for the coming month. For example, within the hospital, several of the wards have the number of incidents for the week on display in communal areas, and set goals to motivate staff and patients towards reducing incidents. By framing our analysis in this way then, the results have clear application to how we might be able to help each ward reach their target, through improving ward SOC. Nevertheless, a binary approach is limited in that we do not know how SOC relates to the degree to which a ward is on or off target. Future research could take a linear approach to answer this question.

A final limitation of the present study involves the direction of the findings. Whilst the perspective that low levels of social climate and social community contribute to the likelihood of disruptive behaviour has been forwarded throughout, it is (of course) possible that the reverse of this is also true and that the incidents of disruptive behaviour are influencing social climate and sense of community scores. Indeed, given the way in which the data collection was structured, it could be argued that this perspective is just as likely as the one put forward throughout this article. Having said that, the nature of correlational research is that it is impossible to infer causation, and therefore, further research needs to be undertaken to clarify the direction of the relationship between social climate, sense of community, and disruptive behaviour.

Implications

Further research is needed to investigate the relationships between SOC and other behavioural outcomes such as: nurse burnout, treatment engagement, and engagement in vocational and occupational therapies. Indeed, it may be that these constructs are strongly correlated with ward climate and/or SOC and so (like we have shown with ward climate and SOC) may contribute (alongside several other factors) to ~~also play a role in~~ the disruptive behaviour that is pervasive throughout secure psychiatric services. Likewise, studying each of the four components of a SOC (*membership, influence, needs fulfilment, shared emotional connections*) and their relationships to such behavioural outcomes would also have implications in informing practice standards and the development of interventions. For example, if *shared emotional connection* was most strongly related to disruptive incidents, then that ~~the strongest predictor of incidents then hospitals~~ may guide practitioners towards improving the emotional connection between staff and patients. Although, that is not to say that the relationship between the two is causal, and we are merely suggesting possible strategies that may have some success in changing the way in which shared emotional connection is visible in the day-to-day running of the hospital. ~~may direct more financial resources to mediation sessions after seclusion or restraint episodes where the staff and patients involved can learn from the shared experience.~~

Incidents of verbal and physical aggression are "physically, psychologically, clinically and economically costly and serve to endanger the goals of in-patient psychiatry" (Papadopoulos et al., 2012), and thus the monitoring and maintenance of a therapeutic community is ~~fundamental to~~ part of, alongside other variables, a factor in promoting recovery, and reducing aggressive behaviours. Indeed, a percentage (1.5%) of UK secure forensic service annual income is dependent on the monitoring and measurement of social climate (using tools like the EssenCES) (Tonkin, 2016), and the Royal College of Psychiatrists (2008) has

recommended that this become standard practice in all therapeutic communities. Indeed, this study has highlighted the importance of SOC (in comparison to social climate) by showing that, as a dynamic construct, SOC is more closely related to incidents of disruptive behaviour within secure psychiatric services. The current study has demonstrated that SOC is more strongly related to incident and non-physical incident target achievement in HSPC than social climate and, given the costs associated with monitoring social climate and the costs associated with managing non-physical incidents in the UK (£10 million per annum; Flood, Bowers, & Parkin, 2008), proposes instead that these funds be used to monitor the SOC among ward members. Doing so would optimise financial resources and provide a more valid portrayal of therapeutic community in HSPC.

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