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How do forensic inpatients' interpersonal sensitivity to dominance and perceptions of staff coercion impact upon self-reported anger and aggression and rates of aggression?

Abstract

Coercive practices which are used as means to manage violent/aggressive behaviour in secure forensic settings have come under scrutiny in recent years due to their paradoxical effects on provoking further service user aggression and violence.

Previous research has found relationships between increased service user aggression with both service users interpersonal styles and perceptions of staff coercion (i.e. staff limit setting). In this paper, we aim to investigate whether forensic service users levels of interpersonal sensitivity to dominance increases levels of self-reported anger and rates of aggression towards staff through perceptions of staff coercion.

Background

Forensic psychiatric inpatients are often deemed as “dangerous, violent or having criminal propensities” (Mason, 1993, p. 413). In Bowers and colleague’s review (2011) of 424 international studies, the frequency of violent incidents in secure-care settings was significantly higher compared to general mental health hospitals (Bowers et al., 2011). The consequences of workplace violence have been known to lead to staff absenteeism due to illness, injury and disability (Holmes, 2012). In addition, these workplace violent incidents can also lead to high staff turnover, decreased productivity, decreased work satisfaction, and a lack of staff commitment to work (Holmes, 2012). Not only do these violent incidents have a negative impact upon staff well-being, but also puts other forensic inpatients at risk of physical and psychological harm (The National Institute for Health and Care Excellence (NICE), 2015). For those forensic inpatients committing violence whilst residing in secure settings, their stay in secure care can often be extended (e.g. Castro et al., 2002). Longer lengths of stay in secure care does not only result in high economic burden on these services (e.g. Völlm et al., 2017), but may also impact negatively upon forensic inpatients’ quality of life (e.g. Shaw et al., 2001).

Aggressive behaviour in secure care has centrally been managed by the implementation of coercive measures (American Psychiatric Association, 2006; NICE, 2015). Although coercive measures are most commonly associated with short-term management methods of aggression and violence (through seclusion and restraint), more long-term coercive measures are also used. Szmukler and Appelbaum (2008) outlined in their ‘sliding scale’, how coercive measures can take on various

forms in forensic secure settings including: persuasion (e.g. efforts to influence forensic inpatients' behaviour by emotional reasoning); interpersonal leverage (e.g. where forensic inpatients' relationship with staff is used to put pressure on them, such as pointing out dissatisfaction in forensic inpatient's behaviour); inducement (e.g. conditioning 'good' behaviour through the use of positive rewards); threats (e.g. to lose particular benefits); compulsory treatment (e.g. forensic inpatients having choice taken away and treatment carried out against their will); and physical security features (i.e. locked doors and barred windows).

More recently, the use of coercive practice has been scrutinised, particularly with regards to the impact it has upon forensic inpatients' personal autonomy and human rights (Hui et al., 2013). These issues of concern with regards to the use of coercive practice were raised following investigations that had taken place in mental health care in the UK (e.g. Blom-Cooper, 1992; Fallon, 1999; Bubb, 2014). Consequently a review and reduction in restrictive practices in secure and general mental health care settings has been advocated for (e.g. American Psychiatric Association, American Psychiatric Nurses Association & National Association of Psychiatric Health Systems, 2003; Queensland Government, 2008; MIND, 2013; Department of Health, 2014; NICE, 2015). The need to reduce coercive practices in secure-care settings in order to support forensic inpatient's personal recovery may, however, be more challenging than in general mental health inpatient settings. As highlighted in a UK national briefing paper on "making recovery a reality in forensic settings", there appeared to be a more complex balance between the reduction of forensic inpatients' risk towards themselves and others whilst also ensuring they have autonomy and choice over their own recovery (Drennan and Wooldridge, 2014).

Staff having the ability to understand the way in which forensic inpatients make sense of coercive practice within an inpatient setting (i.e. how they react to the demands placed upon them) may be critical for not only the staff-forensic inpatient therapeutic relationship but may also help to inform more effective ways of reducing and managing aggressive behaviour (Cookson et al. 2012). As highlighted in previous empirical evidence, staff placing restrictions on forensic inpatients through, for example, directing them to do something and/or being inflexible/rigid with rules, was one of the most commonly reported triggers of forensic inpatient aggression (e.g. Bjørkly, 1999; Daffern et al., 2008; Daffern et al., 2003; Hornsveld et al., 2014; Meehan et al., 2006). According to Kiesler's (1987) interpersonal theory, in our interactions with others (our interpersonal behaviour), we are inherently predisposed to establish relationships that reinforce our sense of self; this is done through our attempts to manoeuvre others' reactions through our own behaviour towards them. All people's interactions can be characterised by two dimensions: affiliation (hostile to friendly) and control (dominance to submission). Each person is likely to align more towards one end of these dimensions. For example, an individual with a friendly rather than hostile disposition will be more likely to submit than dominate others; this is known as their interpersonal style. An individual's interactions also tend to complement the interactions of others (i.e. match across the affiliation dimension but oppose on the control dimension). For example, hostile interpersonal styles may typically be met with hostility from others whereas submissive interpersonal styles may typically be met with dominance from others. At times, an individual's personal characteristics can often lead to difficulties in their interactions with others. For example, individuals with low self-esteem may feel frustrated by those who attempt to

dominant them and in turn, may become overly dominant and rarely submissive (BjØrkvik et al., 2009). This may be even more problematic for those with personality disorders with more extreme interpersonal styles who are likely to become ‘stuck’ at one end of the dimensions (e.g. Blackburn, 1998).

Previous research with offenders, confirms the principles of complementarity (i.e. individuals attempt to manoeuvre others in a way that reinforces their own position) which reveals how, when committing a violent offence, an offender’s dominant interpersonal style is likely to elicit victim submission (e.g. Porter and Alison, 2004). This is further supported by research that has shown that forensic inpatients in forensic settings who were more violent were likely to have more dominant, coercive, and hostile interpersonal styles (e.g. Daffern et al., 2010a; Doyle et al., 2006; Vernham et al., 2016; Smith et al., 2013). According to Cookson and colleagues (2012), forensic inpatients with dominant and hostile interpersonal styles are more likely to encounter problems with psychiatric inpatient treatment. More specifically, maladaptive interpersonal functioning often reflects persistent and problematic interpersonal styles and are often associated with aggression (Daffern et al., 2008).

The rules and regulations of the secure care setting (also known as coercive measures implemented by staff) “may challenge a forensic inpatient’s dominance; they may also activate competitive drives where forensic inpatients seek to reassert control and mastery over their environment” (Daffern et al., 2008, p.483). In the context of interpersonal functioning, forensic inpatients may react in an acomplementary (e.g. dominant) rather than complementary (e.g. submissive) manner to assert their interpersonal dominance; this can lead to staff typically responding to aggression by

attempting to improve control and order thus ensuring the integrity and security of the facility (Daffern et al., 2010a). It is possible that, in turn, forensic inpatients perceive staff's attempts to restore order as threatening and exploitative, which thus leads to preventative actions by forensic inpatients to restore dominance (Lillie, 2007); this is also known as the 'aggression-coercion cycle' (Goren et al., 2003). Previous research has indicated how conflictual staff-forensic inpatient interactions is a factor leading to aggression on psychiatric wards (Papadopoulos et al., 2012; Whittington and Richter, 2005). Previous studies have reported how nurses and other ward staff who, given the time exposed to forensic inpatients and the nature of their role, were most likely to be doing the limit setting and were therefore most likely to be the victims of forensic inpatient aggression (e.g. Daffern et al., 2010a; Meehan et al., 2006). More specifically, Winje and colleagues (2018) found that forensic inpatients in a secure care setting were more likely to be aggressive due to irritability that is caused by staff making restrictions over their behaviour. According to Horowitz and colleagues (2006), the complementary behaviour displayed by forensic inpatients can be explained in the context of them viewing staff behaviour as irritating as it frustrates the forensic inpatients' own interpersonal motives. For example, those who value being in control are likely to be most frustrated by others who are bossy and act superior (Henderson and Horowitz, 2006). This theoretical notion suggests that people are differentially sensitive to specific forms of others' interpersonal behaviour due to a variance in their own interpersonal styles/motives, also known as interpersonal sensitivities. Therefore, it may be possible that some forensic inpatients residing in secure care settings may be less sensitive to, for example, the rules and regulations of the hospital and/or staff limit setting. This, in turn, may result in forensic inpatients

being less likely to display aggressive behaviour towards staff as there may not be a need to assert their interpersonal dominance.

As highlighted above, previous research indicates that forensic inpatients residing in forensic settings are more likely to have dominant interpersonal styles and, in turn, may react in an complementary manner (aggressively) to staff implementing the more long-term coercive measures (i.e. persuasion, limit setting). However, there seems to be a gap in the literature that looks at whether forensic inpatients' interpersonal sensitivities to others' dominance is related to their perceptions of staff coercion and whether these, in turn, impact upon levels of anger and rates of aggression towards staff.

Research question. Do forensic inpatients' levels of interpersonal sensitivity to dominance affect levels of self-reported anger and aggression and rates of recorded incidents towards staff through perceptions of staff coercion?

Hypotheses. It was hypothesised that interpersonal sensitivity to dominance (sensitivity to control) was related to self-reported anger and aggression and rates of recorded aggression towards staff (hypothesis 1), that interpersonal sensitivity to dominance is related to perceptions of staff coercion (hypothesis 2), and that perceptions of staff coercion are related to self-reported anger and aggression and rates of recorded aggression (hypothesis 3). It was also hypothesised that the relationship between interpersonal sensitivity to dominance and self-reported anger and aggression and rates of recorded aggressive incidents towards staff are mediated by perceptions of staff coercion (hypothesis 4).

Method

Sample. The sample consisted of male and female adults (18 > years) who were forensic inpatients detained under the Mental Health Act (Her Majesty's Stationery Office [HMSO], 1983) at a U.K. high-security or medium-security hospital.

Design. A cross-sectional quantitative study design was used to examine whether the relationship between forensic inpatients' levels of interpersonal sensitivity to dominance and self-reported anger and rates of aggression is mediated through perceptions of staff coercion.

Measures. Basic Psychological Needs Satisfaction Scale (BPNSS) (Autonomy subscale). This is a 21-item self-report questionnaire measuring general needs satisfaction which is an innate, psychological and essential for well-being and all three basic needs of autonomy, relatedness, and competence must be fulfilled for it to occur (Deci and Ryan, 2000). The autonomy sub-scale (7 items, $\alpha = .69$) specifically refers to the need to feel that one's behaviour and outcomes of the behaviour are self-determined as opposed to being influenced or controlled by outside forces. Although not explicitly measuring perceptions of staff coercion, the BPNSS autonomy sub-scale was thought to be the most appropriate measure to capture perceptions of staff coercion as it would be assumed that those who scored lower on autonomy would feel more controlled/influenced by outside forces within their current environment. Forensic inpatients were asked to rate how true a statement is for them currently (e.g. "In my daily life, I frequently have to do what I am told"). These statements were rated on a 7-point Likert scale from (1) "Not at all true" to (7) "Very True". This questionnaire has not been validated with forensic

populations however it has been used across a wide variety of participant groups and shown to have adequate internal consistency (Johnston & Finney, 2010).

Interpersonal Sensitivity Circumplex (ISC) (Hopwood et al., 2011) (dominant octant scale) – The Interpersonal Sensitivity Circumplex is a 64-item self-report questionnaire with content that represents behaviours that would bother most people to some extent (e.g., “It bothers me when a person is hostile”). These behaviours were rated on a 7-point Likert-type scale ranging from (1) “not at all, never bothers me” to (7) “Very much, bothers me most of the time.” Items cohere into eight 8-item scales (i.e., octant scales) that each represent an interpersonal sensitivity (e.g., sensitivity to control (dominance)). The higher the score on the dominant octant scale, the more bothered an individual is by those who display controlling behaviour. The scale has been found by the study authors to show adequate internal consistency ($\alpha = .89$, Range = .72–.92, dominance: $\alpha = .84$, Mean=6.04, SD=1.06).

Brief Aggression Questionnaire (BAQ) (Webster et al., 2014) is a brief version of the Buss-Perry Hostility inventory used to measure trait aggression and includes 4 subscales to assess physical aggression (e.g. “If I have to resort to violence to protect my rights, I will”), verbal aggression (e.g. “when people annoy me I may tell them what I think of them”), anger (e.g. “I have trouble controlling my temper), and hostility (e.g. “When people are especially nice, I wonder what they want”). Each item was measured on a 7-point response scale ranging from (1) “extremely uncharacteristic of me” to (7) “extremely characteristic of me”. All items in the measure made up a total trait aggression score (BAQ score) – the higher the score the higher an individual’s overall trait aggression. This questionnaire has not been validated with forensic populations

however has been used across a wide variety of participant groups. Test–retest reliability correlations were found by the study authors to show strong and significant total score reliability ($\alpha = .81$) with scores ranging from .68 to .81 among the four subscales.

Procedure. NHS Ethics Approval was sought and granted by a National Health Service (NHS) Research Ethics Committee.

An a priori power analysis was conducted using G*Power (3.1.9.2) to determine the estimated sample size (Faul et al., 2007). Assuming we needed a power of 0.8 to detect a medium effect size of $F^2=0.15$ with $\alpha = 0.05$, a total sample size of 70 forensic inpatients needed to be obtained. Forensic inpatients were recruited using a convenience sampling approach as it aimed to recruit forensic inpatients who were accessible, available and willing to take part in the research study. Researchers contacted the lead responsible clinician/s (the mental health professional responsible for someone’s care and treatment while they are sectioned under the Mental Health Act) and ward manager from each ward within the three units. The researchers visited each ward and liaised with the ward manager or nurse in charge before approaching each of the forensic inpatients identified. Forensic inpatients were provided with a participant information sheet and were given a brief description of the research.

Of those forensic inpatients who agreed to take part in the research, written informed consent was obtained. Each participant completed three questionnaires in total. Forensic inpatients who had difficulties with literacy were offered support by the researchers with reading and writing during the completion of the questionnaires.

Completion of questionnaires took between 30-60 minutes. Forensic inpatients were paid £5 for their participation in the research study.

With consent from the forensic inpatients, information was sought from their electronic-based clinical notes with regards to age, gender, ethnicity, diagnosis, index offence, and length of stay in current unit. Permission was also sought to obtain information from the hospital incident forms (IR1's) on the amount of times they had been verbally or physically aggressive to staff over the past 12 months. These notes were accessed by the researcher who had an honorary contract with the Trust for the purposes of data collection.

Analysis. Descriptive statistics were carried out on demographic (age, gender, ethnicity), clinical (diagnosis), and forensic (index offence, length of stay in current unit) characteristics of the study sample. Descriptive statistics were calculated for the mean, standard deviation, and coefficient alpha (Cronbach, 1951) for all study variables. In addition, prior to analysis of study variables, the raw data was inspected for the presence of non-normal distribution and potential outliers by a Shapiro-Wilk's test ($p = <0.00$) and a visual inspection of histograms and box plots. There was no missing data for the study variables.

Preliminary relationships between variables were investigated through Bivariate Pearson Correlational statistical analysis (hypotheses 1-3). Non-parametric statistical tests (Spearman's Rank Correlation Coefficient) were run on the correlations that involved the rates of recorded aggressive incidents towards staff due to the non-normal distribution of the data.

Mediation analysis was conducted using PROCESS (Version 31) (Hayes, 2012) through SPSS to investigate the relationship between interpersonal sensitivity to dominance and self-reported anger and aggression and rates of recorded aggressive incidents, with perceived staff coercion as a mediator (hypotheses 4). The indirect effect was tested using a bootstrap estimation approach based on 10000 samples (Preacher and Hayes, 2008).

Results

Sample description. From a total sample of 267 forensic mental health forensic inpatients, 222 were approached to take part in the study. The 44 not approached were deemed by their responsible clinician as either too mentally unwell or too risky to take part in the research study. Out of the 222 who were approached, 152(68.5%) declined, leaving 70(31.5%) forensic inpatients in the final sample.

The 70 forensic inpatients who took part in the study were predominantly male (94%) with a mean age of 38.19 years (SD=11.0, range=23-66 years). Most forensic inpatients were White British (41.4%) or Black/Caribbean/African/Black British (27.1%), and a majority had an index offence of violence including GBH/assault (50%) or homicide (22.9%). The most prevalent International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) (World Health Organisation, 1992) primary diagnoses were paranoid schizophrenia or delusional disorder (44.3%), personality disorder (antisocial and borderline: 24.3%), or a dual diagnosis of paranoid schizophrenia/delusional disorder and personality disorder (21.4%). Fifty-four (77.1%) of the study sample were residing in a high-secure

hospital. With regards to ward types, 40(57.1%) were based in assertive rehabilitation wards, 13(18.6%) were in admission wards, 10(14.3%) were in high dependency wards, and 7(10%) were in hybrid wards (wards set up for forensic inpatients who have dual diagnosis (personality disorder and mental health). The mean overall length of stay in the current unit was 452.44 days (SD=410.88; range= 15-1909 days, median=303 days).

Description of outcome data. Cronbach's alpha coefficient for the ISC dominant domain was .79 which indicated adequate internal consistency. The mean ISC Dominance score was 4.59 (SD=1.50). A Shapiro-Wilk's test ($p = >0.05$) and a visual inspection of histograms and box plots suggested that ISC dominance scores were normally distributed. Cronbach's alpha coefficient for the BPNSS Autonomy sub-scale was .66 indicating questionable internal consistency. The mean BPNSS Autonomy score in the participant sample was 4.23 (SD=.84). Cronbach's alpha coefficient for BAQ total score reliability was .69. The mean BAQ total score in the participant sample was 3.33 (SD=.84). A total of 308 aggressive incidents were recorded against staff within the past year. Two-hundred and twenty-four (72.7%) of the incidents recorded were verbal assaults against staff, 66 (21.4%) were physical assaults against staff, and 18 (5.8%) were attempted physical assaults against staff. These offences were committed by 28 (40%) of the 70 forensic inpatients who took part in the study. Twenty-one (30%) participants had been the assailant for more than one incident and one participant was responsible for 81 (26.3%) of the incidents recorded. Incident data was missing for 7 (10%) participants due to them not giving permission for the research team to access this information. Table I shows the descriptive statistics for all outcome measures.

[Insert Table I]

Results of correlational analysis. Bivariate Pearson Correlational statistical analysis showed that there was significant positive correlation between interpersonal sensitivity to dominance and self-reported anger ($r = .42^{**}$, $p < .01$) (See Table II). There were no associations between interpersonal sensitivity to dominance and rates of recorded aggressive incidents towards staff or perceptions of staff coercion. There were also no associations found between perceptions of staff coercion and self-reported anger and aggression or rates of recorded aggressive incidents towards staff.

[Insert Table II]

Results of mediation analysis. In order to test the mediating effect of perceptions of staff coercion on the relationship between interpersonal sensitivity to dominance and self-rated anger and aggression, model 1 was tested (see Figure 1). A significant direct pathway was found between interpersonal sensitivity to dominance and self-rated anger and aggression (the BAQ total score) ($p < .001$). The indirect effect confidence interval contained zero (-.02 and .02) which indicates that there was no evidence to support the idea that perceptions of staff coercion mediates the relationship between interpersonal sensitivity to dominance on self-rated anger and aggression. The R^2 value tells us that interpersonal sensitivity to dominance explains 18% ($R^2 = .18$) of the variance in self-rated anger and aggression. The positive coefficient (b value) tells us that as interpersonal sensitivity to dominance increases, self-rated anger and aggression also increases.

[Insert Figure 1]

In order to test the mediating effect of perceptions of staff coercion on the relationship between interpersonal sensitivity to dominance and rates of recorded aggressive incidents toward staff, model 2 was tested (see Figure 2). Interpersonal sensitivity to dominance did not significantly predict perceptions of staff coercion and perceptions of staff coercion did not predict rates of recorded aggressive incidents towards staff. Interpersonal sensitivity to dominance did not predict rates of recorded aggressive incidents towards staff when perceptions of staff coercion was or was not in the model. Table III contains the indirect (mediation) path statistics, confidence intervals and overall model fit statistics.

[Insert Figure 2]

[Insert Table III]

Discussion

The results from this study indicated a significant relationship between interpersonal sensitivity to dominance and self-reported rates of anger, where forensic inpatients' who had higher levels of interpersonal sensitivity to others' dominance were likely to report higher rates of anger. There were, however, no significant relationships found between all other study variables. Furthermore, the relationship between forensic inpatients' interpersonal sensitivity dominance and self-reported anger/recorded rates of aggression towards staff were not found to be mediated by their perceptions of staff coercion.

The significant relationship found between interpersonal sensitivity to dominance (control of others) and self-reported anger may be associated with the findings of previous qualitative research whereby the controlling nature of staff was a factor perceived by forensic inpatients to contribute to repetitive acts of aggression (Meehan et al., 2006). This finding also aligns with existing research that has found dominant and coercive forensic inpatient interpersonal styles have been shown to significantly correlate with aggressive and violent behaviour (e.g. Daffern et al., 2010b; Doyle et al., 2006; Vernham et al., 2016). The influence of interpersonal sensitivities on this relationship, in that it was hypothesised that those who value personal authority and being in control, to be more frustrated by the coercive behaviours of others, was not demonstrated (Henderson and Horowitz, 2006).

In the current study's findings, there was no significant relationship found between actual rates of aggression towards staff and other study variables; it is therefore possible that actual aggressive incidents may have been directed outside of the staff-forensic inpatient relationship. Aside from anger and aggression towards staff, in the context of a forensic inpatient population, there may be a need to further consider how forensic inpatients' maladaptive behaviours can manifest in such coercive environments. For example, given the repercussions for forensic inpatients who do display increased aggression (i.e. increased restrictions such as loss of escorted or unescorted leave), perhaps there is a need to restore a sense of control by directing aggression elsewhere, such as bullying towards other forensic inpatients who may be considered more weaker and/or vulnerable (e.g. Ireland, 2006) or even through acts of self-neglect and/or self-harm (e.g. Jeglic et al., 2005).

The fact that perceptions of staff coercion was not found to be a mediator between interpersonal sensitivity to dominance and self-reported anger and/or rates of aggression, challenges previous notions that coercive practices can have a counter-therapeutic effect upon increased cycles of aggression and violence (Goren, 1993). The current findings also contrast with previous quantitative research which have suggested that forensic inpatients are more likely to respond to coercive practices in an assertive (acomplementarity) manner as opposed to a submissive (complementary) manner (Daffern et al., 2010a). Consistent with Hopwood and colleagues (2011) research into interpersonal sensitivities, forensic inpatient participants may have been more sensitive to interpersonal styles that are opposite to their own. For example, those who have more dominant interpersonal styles may more likely be sensitive to or bothered by the passivity and submissiveness of others (Hopwood et al., 2011). Surprisingly, the forensic inpatient sample scored similar levels of perceived autonomy to the comparative norm population, suggesting that forensic inpatient participants didn't actually perceive reduced autonomy in a secure care environment., It may, however, be worth considering the appropriateness of using a proxy measure for perceived coercion (autonomy sub-scale in the BPNSS) and whether this impacted upon the non-significance of this mediator. Aside from the appropriateness of the measure used for perceived coercion, it may also be important to consider forensic inpatients' perceptions of 'good coercion' which coincide with their own best interests and act as an important measure to protect them from their own impulses (Lorem et al., 2015).

Implications and recommendations for policy and practice. Based on the study findings there are some implications for the management of violence and aggression of forensic patients. In future clinical practice, it may be important to consider autonomy as relative to forensic inpatients' experiences within the secure-care environment where for example, those residing on assertive rehabilitation wards are likely to feel much less restricted than when first admitted into hospital. Perhaps coercive practices are respected by forensic inpatients where, although they may be interpersonally sensitive to others' dominance, in the context of staffs' duty of care, it is understood that rules, boundaries, and restrictions are in the secure-care environment for a purpose. As suggested by Drennan and Wooldridge (2014), staff and forensic inpatients need to work together to develop an organisational culture in which there is a balance between safety and recovery. Rather than coercive practice being an antithesis to forensic inpatients' autonomy and human rights (Hui et al., 2013), perhaps a more dialectical stance needs to be taken when conceptualising coercive practices within policy and practice. There is therefore a need to focus on how coercive practice in secure settings is not only something that is of benefit for forensic inpatients but that it also a responsibility that they can share with staff in ensuring that themselves and others are kept safe whilst having autonomy in the secure care environment.

Echoing previous research (Hopwood et al., 2011), forensic inpatients' interpersonal sensitivities may be context specific. Therefore, building upon this idea, forensic inpatients may only feel bothered by coercion when it does not feel necessary and/or relevant. For instance, the difference between a member of staff who used coercive practices for the purposes of forensic inpatients and staffs' safety versus a member of staff who was overly dominant on a consistent (and perhaps unnecessary) basis. The

latter may be what can lead to repetitive acts of aggression and violence by forensic inpatients as this type of coercion may be perceived to be a way to belittle them. As suggested by the findings of this research, whereby most forensic inpatients perceived some sense of autonomy in their current environment, it may be that the use of coercive practices within a secure-care setting is not seen by forensic inpatients to unnecessarily restrict them on a day to day basis. As suggested in a document on 'Positive and Proactive Care' (Royal College of Nursing, 2016), "avoiding assumptions, threats and provocations adds to positive outcomes" (pp. 7). This approach may respond to the interpersonal motives of those forensic inpatients who may be more interpersonally sensitive to others' dominance whereby the implementation of coercive practices within secure-care settings should take place in the context of mutually respected and positive relationships between staff and forensic inpatients (Department of Health, 2014). Furthermore, with collaborative empowerment as central to care, psychosocial interventions such as persuasion and negotiation should be made a transparent part of everyday communication between staff and forensic inpatients. As suggested by Winje and colleagues (2018), perhaps enhanced methods for communicating restrictions on forensic inpatients' behaviour (e.g. remaining calm with self-assured expressions) needs to be incorporated into staff training. This coincides with previous research that suggests good clinical practice cannot be separated from the formal, moral evaluation of coercion (i.e. was it necessary and was it implemented with open communication and empathy) (Lorem et al., 2015).

Recommendations for future research. Future research should attempt to widen the participant sample to those who are possibly seen as 'riskier', such as those in seclusion or who are residing on higher dependency wards. This may help to provide

more variance and/ or extremities in forensic inpatients' views of their current environment where, for example, there are lower perceptions of autonomy and higher levels of self-rated anger. Assuming interpersonal relationships between forensic inpatient and staff are more problematic (particularly considering that 40% of the sample had displayed violent behaviour in the past year), it would also be assumed that interpersonal sensitivities would be more extreme and possibly directed to their current circumstances.

Aligned with a limitation of the current study, the absence of validated assessments of coercive practices, including how these are experienced by forensic inpatients, is also an area for research development. This is in line with the recent foci on reducing restrictive practices and trauma informed care within forensic mental health practice.

Given that individuals may be more sensitive to interpersonal styles that are opposite to their own (Hopwood et al., 2011), future research would benefit from looking more explicitly at the relationship between interpersonal styles and interpersonal sensitivities. For example, it would be useful to find out whether, in a forensic inpatient population, if forensic inpatients' reactions to staff coercion are more submissive (complementary) or dominant (acomplementary). The complementarity of their reactions to coercion therefore needs to not only consider whether others' controlling behaviour is bothering to the person (their interpersonal sensitivity) but also how they are then predisposed to react to the coercion of others (their interpersonal style). In addition, as interpersonal theory relies on the way in which individuals establish relationships with others (Kiesler, 1997), it may be useful to investigate staff's own interpersonal styles and sensitivities. This would inform how staff practices interact

with forensic inpatients own sense making and reactions to such coercive measures (i.e. it may be more about the way in which coercive practices are implemented).

Study Limitations. The alpha coefficients for both the BPNSS and the BAQ both did not meet satisfactory criteria for internal consistency in the current research study. The reliability of reported autonomy and self-reported anger needs to be considered alongside the study findings.

Although the target sample size of 70 participants was reached, in consideration of the small effect sizes shown through some of the statistical outputs, a bigger sample size was required to detect statistical power between study variables. In addition, while common place in inpatient settings research, there was a high decline rate with only 31.5% of forensic inpatients approached taking part in the research. It is therefore important to consider sampling bias implications. Forensic inpatients that declined may be more at odds with their admission, which may be influenced by the restrictive nature of the secure environment. 'Harder to reach' forensic inpatients were also more likely to be deemed not suitable to participate, by their clinical teams, and would therefore be less representative in the study sample.

The retrospective nature of the recorded aggressive incidents towards staff needs to be considered with caution. The retrospective nature of the recorded aggressive incidents towards staff is a further limitation in that self-reported autonomy at the time of the study may have changed over time as participants' experiences of care and recovery change. However, the fact that the recorded incidents were used alongside forensic inpatients' self-reported anger meant that observational (incident) data could

circumvent the problems of impression management – an approach lacking in previous studies.

Conclusion

In conclusion of the study's findings, perceptions of staff coercion (perceived autonomy) was not found to mediate the relationship between interpersonal sensitivity to dominance and self-reported anger and rates of aggression towards staff. A significant relationship found between interpersonal sensitivity to dominance and self-reported anger, which has practical implications for the relational security between staff and forensic inpatients. There was no relationship between interpersonal sensitivity and actual rates of aggressive incidents towards staff. It is important to also consider the non-significant findings in the context of clinical practice, where it may not be coercive responses that are necessarily increasing rates of aggression (as indicated by previous research) but may be the way in which coercive practices are implemented. These non-significant findings may also, in part, be due to some of the study's limitations. For example, the use of measures which had not been validated in a forensic population, the unavailability of measures that accurately captured study variables (i.e. perceptions of staff coercion), and the possible need for a larger sample size.

Summary of implications for practice:

- It may be important to consider autonomy as relative to forensic inpatients' experiences within the secure-care environment (e.g. being on an admissions ward compared to an assertive rehabilitation ward);
- Although some forensic inpatients may be interpersonally sensitive to others' dominance, in the context of staffs' duty of care, perhaps it is understood that rules, boundaries, and restrictions are in the secure-care environment for a purpose;

- Forensic inpatients may only feel bothered by coercion when it does not feel necessary and/or relevant which then potentially leads to acts of aggression and violence.

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