



Exploring relational security, social ward climate  
and factors playing a role in patient-staff interaction  
within high secure forensic psychiatric care

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**Table of contents**

<b>Chapter 1</b>	General introduction	7
<b>Chapter 2</b>	Social ward climate in a high secure forensic psychiatric setting: comparing two instruments	27
<b>Chapter 3</b>	Social ward climate within a high secure forensic psychiatric hospital: perceptions of patients and nursing staff and the role of patient characteristics	45
<b>Chapter 4</b>	Staff's perception of patients' affiliation and control in a highly secure psychiatric setting	69
<b>Chapter 5</b>	Surface acting is related to emotional exhaustion among staff members working in high secure forensic psychiatric care	93
<b>Chapter 6</b>	See, Think, Act Scale: validation of the Dutch version of a measure of relational security in high secure forensic psychiatric care	111
<b>Chapter 7</b>	General discussion	135
<b>Appendix</b>	Nederlandse samenvatting	165
	Description of research data-management	169
	Curriculum Vitae	171
	Dankwoord	173
	Donders Graduate School	175







## Maintaining safety in forensic care

The main aim of forensic psychiatric care is protecting society by preventing crime and diminishing patients' risk of recidivism. Within high secure forensic psychiatric care, patients are contained in a closed facility, often for relatively long periods of time, and treated as a way to protect society. Patients' stay within a high secure forensic psychiatric hospital is mandatory and includes restricted freedom of both choice and space. Within this restricted context, forensic services need to strive towards an optimal level of freedom and facilities that resembles society while maintaining safety (Boone et al., 2016).

Within forensic psychiatric care, three domains of security are used in order to maintain safety of staff members and patients through the recovery process, namely physical security, procedural security and relational security. This threefold is also referred to as the Trinitarian model of therapeutic security, developed by the Reed Committee of the Department of Health in England (Crichton et al., 2009; Kennedy, 2002; 2022; de Pau et al., 2020). Physical security refers to elements in the environment such as perimeter fences, buildings, and electronic alarm systems. Procedural security refers to policies and practices such as regulation of visits, unit and room searches or drug controls. Relational security has been divided into two aspects, a quantitative and qualitative one (Kingsley, 1998). Quantitative relational security includes variables such as the staff-to-patient ratio, and the amount of time spent in face-to-face contact. Qualitative relational security includes frequency of risk- and treatment plan reviews, specialist treatment skills, inter-agency work, and recreational programs (Kennedy, 2002).

Whereas physical and procedural security are rather clearly defined, or even tangible, relational security seems harder to define. Hence, in the literature and in clinical practice there are several definitions of relational security found, showing both variance and overlapping issues. Looking at the definitions of relational security the important role staff members play in it seems however undebated. Tighe and Gudjonsson (2012) focused in their definition of relational security on the quality of the therapeutic relationship clinicians have with their patients and the way this relationship is used to maintain safety through the recovery process. The Department of Health (DoH) in the United Kingdom (2010) referred to relational security as the knowledge and understanding staff have of a patient and of the environment, and the translation of that information into appropriate responses and care. Hence, using knowledge of patients' risks and needs, enables tailored security measures, as levels of restriction and supervision can be varied according to the needs of the patient while maintaining the safety of others (Arsuffi, 2017; Collins and Davies, 2005). Kennedy (2022) describes that relational security in general, relates to maintaining a therapeutic relationship with trust, while managing

boundaries so that risk is recognized and managed, also implying a need for in depth knowledge about patients. In an integrative review of the literature on relational security, Fletcher (2018) identified therapeutic relationship, ward climate and team dynamics as the three main themes playing a role in relational security. Based on her findings Fletcher (2018 pg. 73) describes relational security as: “...the detailed clinical knowledge of a patient and the translation of this knowledge into safe management of their care. It is also the organization of the wider ward, including the management of increased acuity and the therapeutic program. Finally, it is the understanding of staff dynamics and the impact this has on effective communication within the team and the translation of clinical knowledge to the delivery of patient care.”

According to the Trinitarian model of therapeutic security, physical, procedural and relational security can be used to differentiate between different levels of therapeutic security (low, medium, high). Meaning that a facility with a high security level has higher levels of physical, procedural and relational security compared to a low secure facility. However, there are indications that relational security levels vary in practice, but not in correlation to physical and procedural security features (Chester et al., 2017; de Pau et al., 2020). Chester and colleagues (2017) for instance found lower relational security in medium secure services compared to low secure services. It can be argued that an adequate level of relational security is needed in every setting from high to low security and even outpatient care. Besides therapeutic relationship and team dynamics, social ward climate has been identified as one of the main themes playing a role in relational security (Fletcher, 2018).

## Social ward climate

It has long been recognized that social ward climate, plays an important role in the efficacy of treatment in psychiatric hospitals (World Health Organization, 1953). The Dutch government underlines the importance of a safe and humane climate that encourages self-reliance and a safe return to society, in its policy for correctional settings. Hence, all correctional settings need to strive towards a least restrictive, humane and stimulating ward climate for legal, moral and goal directed reasons (Boone et al., 2016).

Stemming from the idea that behaviour is a joint function of both the person and the environment, Moos and Houts (1968) argue that social atmospheres of psychiatric wards might generate certain behavioural effects in the majority of people that are exposed to the atmosphere, and at the same time these atmospheres may have differential effects on individuals with different needs. They describe that

individuals have an unique and private perception of their ward, but that people do tend to share common interpretation. This point where the private world merges with that of others, the experiences that are mutually shared and consensual, is what Moos and Houts (1968) intend to grasp when looking at the social atmosphere of a ward.

Although the terminology used to refer to ward climate varies, (for instance *social atmospheres* or *ward atmosphere* (Moos, 1974; Moos and Houts, 1968), *social climate* (Langdon et al., 2004; Schalast et al., 2008; Long et al., 2011; Day et al., 2011; Tonkin 2015), *living group climate* (Van der Helm et al., 2011; Van der Helm et al., 2012; Stams and van der Helm, 2017), or *institutional climate* (Ros et al., 2013) these terms seem to refer to a comparable construct. Mostly described as a dynamic and multifactorial construct, a set of properties, that describes how a given ward is perceived by its residents or by staff, that is assumed to influence feelings and behaviour (Doyle et al., 2017; Milsom et al., 2014; Ros et al., 2013; Schalast et al., 2008; Tomlin and Tonkin, 2022; Tonkin, 2015). Kanyeredzi and colleagues (2019) use the term ward atmosphere and describe atmospheres as in-between or ‘quasi-things’ that fluctuate and that appear to have their own existence whilst also being dependent on the relations out of which they are constituted.

Within this dissertation, the term ‘social ward climate’ will be mostly used. Besides the terminology, the conceptualization of social ward climate is complex and the essential elements of the construct remain debated (Boone, et al., 2016; Brunt and Rask, 2007; Doyle et al., 2017; Kanyeredzi, 2019; Tonkin, 2015). Components of social ward climate that are mentioned often in the literature are experiencing safety from aggression and violence, the supportiveness of staff and other patients and opportunities for growth, learning skills and prosocial behaviour (Tonkin, 2015). According to Moos (1989) the properties of the ward that, in interaction with each other, construe a ward climate can be social and emotional but also physical. Stams and van der Helm (2017) also include the physical environment in their description of living group climate in residential care, they refer to it as: *the quality of the social and physical environment with regard to adequate and essential conditions for physical and mental health, recovery and personal growth of residents, respecting their human dignity, human rights and also their personal autonomy (within the possibilities of the legal measure), aimed at successful participation in society.*

One could easily assume that the physical structure of a forensic psychiatric ward, affects the therapeutic or social environment. The physical environment is often designed in line with organizational goals related to managing risks of for instance self-harm and harm to others, which impacts on staff and patients (Kanyeredzi, 2019). There are studies supporting the idea that the physical environment can be health promoting. Among others, features such as ventilation, windows, view on

nature, comfortable furnishing, noise reducing designs and accessible gardens are found to have positive effects on well-being or are found to reduce stress and the risk of aggressive behaviour in psychiatric care (Karlin and Zeiss, 2006; Ulrich et al., 2008; 2018). The transition of patients to new buildings for forensic psychiatric care, designed with a person centred philosophy, delivering care in close cooperation with the patient and the patients' family have been studied. Results indicate that these newly designed facilities can support everyday living, well-being, can create comfort and have a positive impact on patients' perceptions of quality of care and patient satisfaction (Alexiou et al., 2016; Olausson et al., 2021).

In general, instruments developed to measure social ward climate in forensic psychiatric institutions do not measure aspects of the physical environment and its effect on staff or patients directly. There are several instruments developed aimed at measuring social ward climate in forensic psychiatric institutions, showing both variance and overlapping issues. The oldest measures are the Ward Atmosphere Scale (WAS) and its correctional version, the Correctional Institutions Environment Scale (CIES: Moos, 1968; 1975). These measures are frequently used, however there are mixed findings concerning the psychometric properties (Schalast et al., 2008; Tonkin, 2015). The CIES has 90 items and 9 scales with 3 higher order factors. The WAS has 100 items, 10 scales and 3 higher order factors. The first factor is 'Relationship' including (1) Involvement, (2) Support, (3) Spontaneity; The second factor is: 'Personal Growth' including (4) Autonomy, (5) Practical Orientation, (6) Personal Problem Orientation, (7) Anger and Aggression (excluded from the CIES); The third factor is: 'System Maintenance' including (8) Order and Organization, (9) Clarity, (10) Staff Control. A more novel and shorter scale that is often used to measure social ward climate is the Essen Climate Evaluation Schema (EssenCES: Schalast et al., 2008). This scale measures three aspects of social ward climate, namely 'Therapeutic Hold', referring to the extent to which the unit is perceived as supportive of patients' therapeutic needs; 'Experienced Safety', representing freedom from the threat of aggression and violence; and 'Patient Cohesion and Mutual Support', indicating the extent to which characteristics of a therapeutic community are approximated on a unit. Another example of a scale is the Group Climate Instrument revised (GCI-r), an instrument derived from the Prison Group Climate Inventory (PGCI: van der Helm, et al., 2011). The GCI-r assesses four dimensions of ward climate, namely 'Support', referring to responsiveness of staff members to the needs of the patients; 'Growth', reflecting facilitation of learning and preparation for a meaningful life both within and outside the closed facility; 'Atmosphere', capturing the degree to which the physical and social environment fosters feelings of safety and trust among inmates; and 'Repression', which measures a negative side of ward climate encompassing perceptions of strictness and control, unfair rules and boredom, and lack of flexibility on the ward.

Despite differences in terminology and conceptualisation, social ward climate is considered an important concept playing a role in therapeutic or patient outcomes as well as organizational outcomes. To be more precise, it is found to play a role in therapeutic outcomes like drop out-, release-, and re-admission rates (Moos et al., 1973), patient satisfaction (Bressington et al., 2011; Middelboe et al., 2001; Nasset et al., 2009; Røssberg and Friis, 2004), treatment readiness (Gaab et al., 2020), motivation for treatment (van der Helm et al., 2014), treatment engagement and therapeutic alliance (Long et al., 2011). Social ward climate can be seen as an aspect of program responsivity that enhances treatment effects (Howells and Day, 2003; Ward et al., 2004). It has also found to be a determinant of staff well-being, playing a role in staff performance and morale (Moos and Schaefer, 1987), job satisfaction (Bressington et al., 2011; Middelboe et al., 2001; Røssberg and Friis, 2004), and occupational stress (Kirby and Pollock, 1995).

The relationship between social ward climate and organizational- and therapeutic outcomes underlines the importance of establishing and maintaining a safe environment in which therapeutic progress is encouraged and that supports the ability of staff to deliver responsible high quality care for their patients. However, in order to use social ward climate in clinical practice as a factor for delivering high quality care more insight is needed into the definition of the concept, its components, the underlying factors, their relationships, and the mechanism leading to effects on for instance well-being, safety and treatment progress.

## Monitoring social ward climate

Off course there are research endeavours aimed at gaining more insight in the concept of social ward climate and the presence of the concept in clinical practice. As in the Netherlands, international institutions put effort into monitoring ward climate as a standard practice to inform ongoing quality improvement (Day et al., 2011; Milsom et al., 2014; Schalast and Laan, 2017; Tonkin, 2015). The reason to measure social ward climate can be enhancing the therapeutic effect, enhancing control, quality of life, or getting insight in dynamic- and static factors of social ward climate (Boone et al., 2016). For forensic services, before deciding on a how to monitor social ward climate, more insight is needed in the performance of monitoring instruments in daily practice within their setting.

One of the results that is found repeatedly when monitoring social ward climate, is that on group level staff members and patients differ in their perception of ward climate (Caplan, 1993; Day et al., 2011; Dickens et al., 2014; Howells et al., 2009; Livingston et al., 2012; Long et al., 2011; Moos, 1975; Rossberg and Friis, 2004; Schalast et al., 2008; Morrison et al., 1997; Verstegen et al., 2021). Different roles



and positions that staff and patients have within a closed setting and restrictions of patients' liberty are mentioned as potential explanations for differences in perceptions (Caplan, 1993; Goffman, 1961; Langdon, et al., 2004; Røssberg and Friis, 2004). When striving to keep patients in a responsive therapeutic environment which is designed to address their needs, it is important to have insight in how the climate is actually perceived and where differences in perception originate from. It has been suggested that different populations benefit from different treatment atmospheres (Duxbury et al., 2006). In clinical practice you often see that patients who are considered as being more vulnerable, sensitive for external stimuli such as sounds or who suffer from psychosis are placed together on wards. On these wards staff strive towards a calm, predictable and nurturing social climate, that is assumed to be beneficial for safety and well-being for these 'vulnerable' patients. Neimeijer and colleagues (2021) suggest that for individuals with mild intellectual disabilities or borderline intellectual functioning in secure forensic care, formulating a uniform climate might be impossible, as the needs vary greatly between patients and fluctuate within time. Moos and Houts (1968), argued that individuals have an unique and private perception of their ward but that there is also a common shared experience. Maybe the more individuals differ in their needs, the more variance is found within the experiences of social ward climate and the more customized care is needed from staff. Neimeijer and colleagues (2021) describe that staff members need to be alert for subtle and ambivalent signals from all individual patients, interpreted them correctly and react accordingly, endorsing social ward climate as a dynamic concept.

Gaining more insight into patients' and staff's perception of social ward climate could be highly informative and promotes the discovery of potentially meaningful discrepancies between individuals and groups, that could stimulate quality improvement. There has been some indications that providing staff with feedback on discrepancies between their real and ideal social ward climate, resulted in changes in several ward procedures and in the reduction of the discrepancy between actual and ideal social ward climate. These results were seen in the group of staff that received written feedback on measurements of social ward climate but were even stronger in the group of professionals who had the opportunity to discuss the written feedback they received (James et al., 1990).

## Interactions between staff and patients

Another result that has become apparent from social ward climate research, is that the therapeutic relationship between staff and patients has been regarded as one of the most prominent aspects of social ward climate from both staff and patients' perspectives (Doyle et al., 2017). According to the Safe Wards Model, staff's relationships with patients is a key factor for enhancing social ward climate, the reduction of conflict and the promotion of prosocial behaviour (Bowers et al., 2015). Ros and colleagues (2013) found that patients who felt less supported by staff members were involved in more incidents of aggression than patients who felt more supported by staff.

However, interactions between staff and patients can be challenging and emotionally demanding in this complex context and require skills and attitudes that need to develop through training, education and experience (Tema et al., 2018; Rask et al., 2018). Aspects that are indicated in research as being important for the therapeutic relationship between staff and patients are communication, boundary management, respect, containment and validation (Doyle et al., 2017). Austin and colleagues (2009) describe several factors that challenge professionals in behaving authentic in their relationships with patients, for instance: power imbalance, risk for personal safety and negative judgements of mental disorders and criminal acts. Staff members need to assess and manage risks while building and maintaining a therapeutic relationship with patients. Hence, having a role in both the control aspects of inpatient treatment as well as in care aspects is frequently mentioned as one of the most challenging and troubling aspects of the role of forensic psychiatric care professionals (Dikec et al., 2017; Gildberg et al., 2010; Hörberg et al., 2012; Martin, 2001; Martin and Street, 2003; Mason, 2002; Mason et al., 2008; Meehan et al., 2006; Vollm et al., 2018).

How professionals reconcile their 'dual role', affects interpersonal conflicts and the professional-patient relationship (Austin et al., 2009; Gildberg et al., 2021; Gildberg et al., 2012). Power and powerlessness are reported as dominant concepts for both patients and staff members (Hörberg and Dahlberg, 2015; Lammie et al., 2010; Livingston and Rossiter, 2011). Söderberg and colleagues (2022) found that patients experience participation in care, in situations when staff care for the patient and his needs and do not let the coercive part of their role be predominant. Jacob (2014), argues that forensic psychiatric nurses may experience dissonance as a result of their dual role in care and custody. They try to resolve the unpleasant feelings related to the dissonance and justify their own distancing behaviours by (re) conceptualising patients as dangerous individuals. When not handled adequately, this dual role and the possible conflicting emotions, lead to risks of staff becoming emotionally blunted or exhausted. Which could effect motivation and the well-being of

both staff and patients (Bakker and Heuven, 2006). Also, there are studies suggesting that dealing with conflicting emotions by using emotional labour strategies might generate feelings of competence and work satisfaction (Brotheridge and Grandey, 2002; Kinman et al., 2011).

## Emotional labour and staff well-being

As staff members working in high secure forensic psychiatric care are exposed to emotionally demanding interpersonal interactions, the management of emotions can be seen as an important part of the professional skills and role (Cramer et al., 2020; Grandey et al., 2013; Hammarström et al., 2019, 2022). In their qualitative study on nurses' lived experiences of encounters with patients in forensic inpatient care Hammarström and colleagues (2019) identified four key themes: 'Being frustrated' (including fighting resignation and being disappointed), 'Protecting oneself' (including to shy away, being on your guard and being disclosed by patients), 'Being open-minded' (including being confirmed by colleagues and patients, developing trust and developing compassion), and 'Striving for control' (including sensing mutual vulnerability and regulating oneself). Lingiardi and colleagues (2015) argued that emotional reactions within therapists, such as feeling overwhelmed, disorganized, helpless and frustrated, could lead to problems in managing the therapeutic relationship. Hammarström and colleagues (2019) describe that staff members try to control the emotions that are evoked in daily encounters with patients, to avoid acting on their initial feelings of for instance fear and anger. They may step back, trying to get a grip on themselves in order to continue an interaction, based on compassion and attenuated to patients' needs (Hammarström et al., 2019). The process described by Hammarström and colleagues (2019), relates to the concept of emotional labour.

The framework of emotional labour has been suggested as being useful for studying the relationship between emotionally charged work and well-being of healthcare staff (Hochschild, 1983). Emotional labour refers to the process of regulating one's emotions to produce organizationally desired emotional displays (Hochschild, 1983; Grandey, 2000; Diefendorff and Richard, 2008). Especially in the context of emotionally charged interactions, professionals might use emotion regulation strategies like deep acting (which involves exerting effort to modify feelings in order to feel and express required emotions) and surface acting (which involves faking required emotions, modifying emotional displays without shaping inner feelings), in order to manage their experience and expression of emotions (Brotheridge and Grandey, 2002; Grandey et al., 2013; Hochschild, 1983). Deep acting has been labelled as the healthier emotional regulation strategy (Hülshager and Schewe, 2011; Schmidt and Diestel, 2014).

As well-being of professionals is key for organizational outcomes it is important to study the challenges faced in staff-patient interactions, coping mechanisms and the potential effects on well-being and professional care, as this could guide the development of effective support for staff in fulfilling their professional task (Hammarström et al., 2019; Jacobs, 2014; Lammie et al., 2010; Marshall and Adams, 2018; Tema et al., 2018).

## Maintaining relational security

It has been argued that in secure and forensic mental health settings the humanistic values that underpin nursing can be in conflict with actual practice. The dual role that staff members have in therapy and control, combined with the need for personal safety for professionals, might result in adapting more custodial and restrictive than care related attitudes and practice (Jacob et al., 2008; Hammarstrom et al., 2019). For instance, distancing yourself as professional from patients has been mentioned as a way to cope with relational difficulties (Vincze et al., 2015). However, in order to enable recovery, relationships and environments that provide hope, empowerment, choices, and opportunities for fulfilling an individual's potential are required (Office of Mental Health and Substance Abuse Service, 2005). Relational security could support forensic mental health professionals in finding balance in managing safety and risks and patients' recovery and care (Markham, 2022).

The Department of Health (2010) in the United Kingdom published "See Think Act (STA)," a handbook including a model that could help professionals working in forensic care in evaluating and maintaining relational security. The STA model is based on an analysis of a series of ward incidents in low- to high-secure forensic services in the United Kingdom. It was found that most incidents were related to a break down in the interpersonal and risk-management aspects of care, that one could categorize as relational security aspects (Tighe and Gudjonsson, 2012). The purpose of the STA handbook is to help staff understand what relational security means. It offers structured guidance for clinical teams that encourages relational security by the maintenance of security and vigilance while promoting patient recovery (Drennan et al., 2012).

However, there is a need for studies into the actual impact of relational security on for instance, risk incidents on the ward, social ward climate, treatment outcomes and patient satisfaction as there are no results yet that underwrite the potential beneficial effects (Arsuffi, 2017). There is a lack of data on the implementation of relational security in inpatient settings (Fletcher, 2018, Markham, 2022). The lack of studies concerning this topic could be related to the challenges in defining the

concept of relational security and isolating the essential elements. In an attempt to fill this gap, Tighe and Gudjonsson (2012) developed a measure of qualitative relational security (the See Think Act scale, STA scale) as perceived by forensic staff members. The STA scale is based on the content presented in the STA DoH practice guidelines (2010). The original English version of the STA scale has been found to have high levels of internal consistency and moderate to good convergent validity with instruments partly addressing aspects of relational security such as social ward climate (Tighe and Gudjonsson, 2012; Arsuffi, 2017, Schalast et al., 2008). It would be interesting to translate and study a Dutch version of this instrument in order to make a step towards measuring this complex concept in clinical practice.

## To conclude

Forensic staff members in high secure forensic care, work in a complex context with a challenging population. They work with patients who suffer from a variety of psychiatric illnesses and who have committed serious offences. Staff members have a professional responsibility in the secure recovery of the patients on their wards. Within the forensic psychiatric context, relational security, social ward climate, and having supportive therapeutic relationships are seen as important factors for safety, well-being and treatment effects. However, interactions between staff members and patients in the forensic context can be challenging and emotionally demanding. Therefore, it is important to obtain sufficient insight in underlying factors and processes that play a role in relational security and social ward climate and its most important factor, therapeutic contact between nursing staff and forensic psychiatric patients. Further knowledge is desired on potential underlying mechanisms that play a role in interactions between staff and patients in clinical practice. Furthermore, research on the role of patient- and staff characteristics, emotional reactions and emotion regulation strategies among staff are pivotal. The aim of this line of research is to gain more insight in these relevant but somewhat understudied themes in high secure forensic care. Hence, giving professionals such a complex responsibility in secure recovery, asks for proper monitoring, guidance and support in fulfilling this difficult task. Findings of this line of research could guide future development of instruments and support for professionals in the forensic psychiatric field. Hopefully, subsequently leading to enhancement of (relational) security, treatment effects, recovery of patients, and well-being of both patients and staff.

## Aim and outline of this thesis

This thesis is a collection of research papers exploring several elements that play a role in the task of professionals working in day-to-day care in high secure forensic psychiatric care, namely social ward climate, interaction with patients, emotional responses and relational security. Together these studies provide more insight in the complex work of staff members in high secure forensic psychiatric care and hopefully offer suggestions for staff support in daily practice. In **chapter 2**, the psychometric properties and the differences and overlap of two instruments developed to measure social ward climate (the EssenCES and the GCI-r) are compared. **Chapter 3** provides more insight into the differences between patients' and staff's perceptions of social ward climate, and into the relationship between patient characteristics and perceived social ward climate. In **chapter 4** a study is described giving more insight into the patient- and staff characteristics that play a role in how staff members perceive the interpersonal style of patients, and whether these perceptions are related to patients' evaluations of social ward climate and their satisfaction with daily staff. Subsequently, in **chapter 5** the interplay between emotional job demands and emotional exhaustion, and the possible moderating role of workplace social support was explored. Finally, in **chapter 6** the psychometric properties of an instrument developed to measure relational security was studied. In **chapter 7** a general overview is provided, summarizing and discussing key findings from all chapters.



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## CHAPTER 2

Social ward climate in a high-secure forensic psychiatric setting: comparing two instruments



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## Abstract

The psychometric properties and associations between the Essen Climate Evaluation Schema (EssenCES) and the Group Climate Instrument-revised (GCI-r) were examined. These self-report questionnaires assessing ward climate were filled out by 123 male patients, residing in 3 high-secure forensic psychiatric facilities. Good internal consistency was found for all subscales of both instruments. The original factor structure was confirmed for the EssenCES, but not for the GCI-r. Bivariate correlation analyses indicated that the instruments measure related concepts. The results of this study call for further development and validation and for finding common grounds in the definition and operationalization of ward climate.

## Introduction

It has long been recognized that ward climate or atmosphere plays an important role in the efficacy of treatment in psychiatric hospitals (World Health Organization, 1953). However, in residential climate research there is still a lack of conceptual clarity, no consensus on the definition, on the appropriateness of the terminology used and on the essential elements of the construct (Doyle, Quayle, & Newman, 2017; Tonkin, 2015). Ward climate or social climate is often used as a term to refer to the material, social, and emotional conditions of a particular unit and the interaction between such factors (Moos, 1989), which may influence the mood, behavior and self-concept of the people involved (Milsom, Freestone, Duller, Bouman, & Taylor, 2014; Schalast, Redies, Collins, Stacey, & Howells, 2008). It is seen as a dynamic and multifactorial construct, which describes the social and emotional experience of a unit by its staff or residents (Schalast et al., 2008; Tonkin, 2015).

Having an optimal ward climate has been described as a prerequisite for fostering program responsiveness and enhancing patient treatment readiness (Howells & Day, 2003; Ward, Day, Howells, & Birgden, 2004). There is a growing body of research on ward climate, demonstrating that positive ward climate often co-occurs with positive organizational and therapeutic outcomes in inpatient forensic psychiatric care. For instance, the quality of ward climate is found to be related to motivation to engage in treatment, coping, and therapeutic alliance (Beazley & Gudjonsson, 2011; Day, Casey, Vess, & Huisy, 2011; Long et al., 2011; van der Helm, Beunk, Stams, & van der Laan, 2014), staff and patient satisfaction (Bressington, Stewart, Beer, & MacInnes, 2011), self-reported aggression and aggressive incidents (van der Helm, Stams, van Genabeek, & van der Laan, 2012; Ros, van der Helm, Wissink, Stams, & Schaftenaar, 2013; de Decker, Lemmens, van der Helm, Bruckers, Molenberghs, & Tremmery, 2018), and recidivism (Schubert, Mulvey, Loughran, & Losoya, 2012). It is important to note that the studies referred to above do not present an unidirectional causal relationship between ward climate and therapeutic outcomes. Despite the lack of insight in causality, the relationships found between ward climate and therapeutic and organizational outcomes make ward climate an important concept for forensic psychiatric facilities to monitor. Moreover, the Dutch government underlines the importance of a safe and humane climate that encourages self-reliance and a safe return to society, in its policy for correctional settings (Boone, Althoff, & Koenraadt, 2016). As in the Netherlands, international institutions put effort into monitoring ward climate as a standard practice to inform ongoing quality improvement (Day et al., 2011; Milsom et al., 2014; Schalast & Laan, 2017; Tonkin, 2015). Nowadays, relatively short questionnaires are preferred and used to monitor and compare ward climate and to guide clinical practice.

One example of this type of instrument is the Essen Climate Evaluation Schema (EssenCES: Schalast et al., 2008). The EssenCES was developed for use in forensic psychiatric units. The EssenCES is also available for correctional and prison settings and has been translated into different languages (Schalast & Tonkin, 2016). The psychometric quality of the EssenCES in correctional settings and forensic psychiatric hospitals has been studied and supported several times. However, additional research on its suitability is required for specialized settings such as female units, facilities for juvenile offenders, and forensic facilities for individuals with learning disabilities (Bell, Tonkin, Chester, & Craig, 2017; Tonkin, 2015). The EssenCES measures three aspects of ward climate, namely “Therapeutic Hold”, referring to the extent to which the unit is perceived as supportive of patients’ therapeutic needs; “Experienced Safety”, representing freedom from the threat of aggression and violence; and “Patient Cohesion and Mutual Support” (further referred to as Patient Cohesion), indicating the extent to which characteristics of a therapeutic community are approximated on a unit.

A second example of a relatively short questionnaire developed to monitor ward climate is the Group Climate Instrument revised (GCI-r) derived from the Prison Group Climate Inventory (PGCI: van der Helm, et al., 2011). The PGCI was developed to measure group climate in youth prisons and secure residential treatment facilities. There are several versions of the PGCI available for different age categories. It has been translated into several languages, and is used in youth prisons, secure youth care facilities, forensic mental hospitals, adult prisons, and residential care facilities for individuals with learning disabilities (Stams & van der Helm, 2017). The psychometric quality of the PGCI has been studied and confirmed in, for instance, German youth prison (Heynen, van der Helm, Stams, & Korebrits, 2014) and Dutch youth prison and adult psychiatric prison (van der Helm et al., 2011). The GCI-r assesses four dimensions of ward climate, namely “Support”, referring to responsiveness of staff members to the needs of the patients; “Growth”, reflecting facilitation of learning and preparation for a meaningful life both within and outside the closed facility; “Atmosphere”, capturing the degree to which the physical and social environment fosters feelings of safety and trust among inmates; and “Repression”, which measures a negative side of ward climate encompassing perceptions of strictness and control, unfair rules and boredom, and lack of flexibility on the ward. The sum of the scale scores on the GCI-r is also used as a broad indicator for ward climate (higher-order factor).

Both the EssenCES and the GCI-r are developed to assess ward climate. However, it has yet to be determined whether and to what extent these two instruments diverge or overlap in the aspects of ward climate that they intend to measure. The main goal of the present study was to examine the psychometric properties of the EssenCES and the GCI-r, and the overlap between the instruments, in a Dutch

high-secure forensic psychiatric setting. First, statistical indicators for internal consistency of the original subscales were calculated, and confirmatory factor analyses were conducted to test the three-factor structure of the EssenCES (Howells et al., 2009; Milsom et al., 2014; Schalast & Laan, 2017; Schalast et al., 2008; Tonkin, Howells, Ferguson, Clark, Newberry, & Schalast, 2012) and the four-factor structure of the GCI-r (van der Helm et al., 2011; Heynen et al., 2014). Second, the overlap between the instruments was investigated through the pattern of correlations between the subscales. A strong positive relationship was expected between the Therapeutic Hold scale of the EssenCES and the Support scale of the GCI-r, because both factors represent the quality of the relationship between patients and staff members in terms of responsiveness to patients’ needs. The Atmosphere scale of the GCI-r seems to assess elements of both the Experienced Safety and Patient Cohesion scale of the EssenCES, therefore a positive association between these scales was expected. A negative relationship was expected between the Repression scale of the GCI-r and the Therapeutic Hold scale of the EssenCES, as repression measures among other things unfair, repressive behavior by staff members. Because repression is the only aspect aimed at a negative side of ward climate, negative relationships between the Repression scale of the GCI-r and all other scales (especially with the Support scale of the GCI-r and the Therapeutic Hold scale of the EssenCES) were expected. As possibilities for growth are not explicitly measured by the EssenCES, relatively low correlations were expected between the Growth scale of the GCI-r and the subscales of the EssenCES.

## Material and methods

### Subjects

Data were collected in three facilities of the Pompestichting, one regular in-patient high security forensic psychiatric hospital (RFPC), and two facilities for long-term forensic psychiatric care (LFPC) in the Netherlands. Patients that reside within these facilities are admitted by means of a TBS order (Terbeschikkingstelling: “disposal to be treated on behalf of the state”). All TBS patients are convicted for a serious violent offense but are considered to have diminished responsibility for their crime because of severe psychopathology. Therefore, mandatory stay (and treatment) within a high-secure forensic psychiatric setting is imposed. In the RFPC the focus lies on treatment and rehabilitation. In case multiple treatment attempts in one or more RFPC hospital(s) fail to reduce a patient’s risk of recidivism to safely return to society, patients are transferred to a LFPC facility. Within the LFPC the focus mainly lies on stabilization of psychiatric problems and enhancement of quality of life.



In this study, the overall response rate was 49%, as 123 of the total of 253 patients that resided within the facilities participated. The response rate was 55% for the RFPC facility (as 40 of the total of 140 patients that resided within the hospital participated), and 41% for both LFPC facilities (9 participants from a total of 22 patients; and 37 from a total of 91 patients). Of the respondents, 63% ( $n = 77$ ) resided in RFPC and 37% ( $n = 46$ ) resided in LFPC. The participants resided on 24 different units; 2 admission units, 8 treatment units, 4 rehabilitation units, and 10 units for long stay. All participants committed at least one serious violent or sexual offence and were diagnosed with a serious mental disorder either on Axis I and/or Axis II using the Diagnostic and Statistical Manual of Mental Disorders, version IV-TR (American Psychiatric Association, 2000). See Table 1 for demographic and clinical characteristics.

**Table 1.** Demographic and clinical characteristics of the participants

Characteristic	Result
Gender: male (%)	123 (100%)
Age, years: mean ( <i>SD</i> ; range)	49 (11.1; 19-73)
Length of stay within facility years: mean ( <i>SD</i> ; range)	4 (4.09; 0-16)
Main diagnosis: axis I (%)	72 (59.0)
schizophrenia (%)	28 (22.8)
pedophilia (%)	23 (18.5)
pervasive developmental disorders (%)	10 (8.1)
other (%)	11 (8.9)
Main diagnosis: axis II (%)	51 (41)
personality disorder NOS* (%)	22 (17.7)
antisocial personality disorder (%)	16 (12.9)
borderline (%)	7 (5.6)
other (%)	6 (4.8)
Offense which led to mandatory stay (%)	
(attempted) murder	26 (21.1)
(attempted) manslaughter	18 (14.5)
(attempted) aggravated assault	11 (8.9)
sexual offences (e.g. rape, sexual assault)	50 (40.3)
of which child abuse	28 (22.6)
other offences (e.g. arson, robbery)	18 (14.5)

\* NOS = not otherwise specified

## Procedure

Data collection was part of the yearly evaluation of ward climate within the Pompestichting and took place in 2015 and 2016. Based on an evaluation of ethical criteria (no negative consequences were associated with participation, participation was voluntary, and filling out two self-report questionnaires was assumed to require minimal effort of the participants), the study protocol was not required to be submitted to an external medical ethic committee. Instead, the protocol was evaluated and approved by the internal review board (Scientific Committee) of the Pompestichting.

The study was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013). Participation was voluntary and the assessments were anonymized to ensure that participants were not able to be identified from the data. The researcher gave oral and written information concerning the data collection, the study aims, and objectives. Patients signed an informed consent before taking part and were rewarded with €2,35 (payment equal to one working hour within the Pompestichting). All patients received a printed version of the EssenCES and the GCI-r with a return envelope. After filling out the questionnaires participants returned them to the researcher by posting the envelope in a sealed (mail)-box located on the ward. Data on patient characteristics (age, disorder, type of offence) were extracted from the clinical records.

## Measures

The Essen Climate Evaluation Schema (EssenCES; Schalast et al., 2008) is a 17-item questionnaire. Examples of items representing the different factors are “The patients care for each other” (Patient Cohesion); “Really threatening situations can occur here” (Experienced Safety); and “On this ward, patients can openly talk to staff about all their problems” (Therapeutic Hold). Several studies provide good empirical support for the psychometric properties of the EssenCES (Schalast et al., 2008; Howells et al., 2009; Tonkin et al., 2012). Tonkin (2015) reported mean Cronbach’s alphas of .82 (PC), .77 (ES), and .81 (TH) in a review of ten studies examining the internal consistency of the EssenCES. In previous research the alpha-coefficients of the Dutch translation of the EssenCES (Bulten & Fluttert, 2007), were very similar: .82 (PC), .76 (ES), and .84 (TH) (de Vries, Brazil, Tonkin, & Bulten, 2016). Ratings were obtained using a 5-point Likert scale ranging from “I do not agree” (0) up to “totally agree” (4).

The Group Climate Inventory revised (GCI-r; based on the PGCI, van der Helm et al., 2011) consists of 29 items. Examples of items representing the different factors are: “I get attention from staff members” (Support); “I learn the right things here” (Growth); “We trust each other here” (Atmosphere); “You have to ask permission for everything here” (Repression). The GCI-r has not yet been validated, because it is

a relatively new and shorter version of the validated PGCI (Heynen et al., 2014; van der Helm et al., 2011). Ratings were obtained using a 5-point Likert scale ranging from “I do not agree” (1) up to “totally agree” (5).

### Statistical analyses

Internal consistency of the original subscales was examined using Cronbach's alpha and Corrected Item Total Correlation (CITC) coefficients. Confirmatory factor analysis (CFA) was used to examine whether the questionnaires' internal structures are retained within this sample. For the EssenCES, a three-factor CFA was tested by loading the items from each measure into their respective factors. For the GCI-r, a model with four first-order factors and one second-order factor representing overall climate was fitted to the data. The robust maximum likelihood (MLR) estimation procedure was used to account for non-independence and non-normality (Muthén & Muthén, 1998-2011). The fit of the two models was examined using the Root Mean-Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), and the Tucker–Lewis Index (TLI). The following fit index cut-off values are indicative of good model fit: CFI and TLI >0.90 and RMSEA <0.05 (Kline, 2005).

Concurrent validity was assessed by calculating correlations between the scales of the EssenCES and the GCI-r. For the correlation analyses, Pearson's correlations of .10–.30 were seen as weak, .30–.50 moderate and > .50 were seen as strong (Cohen, 1988). SPSS version 20 (IBM, SPSS Statistics) and Mplus v.7 (Muthén & Muthén, 1998-2011) were used for statistical analyses.

### Auxiliary analyses

Because the sample included patients from different facilities, a one-way multivariate analysis of variance (MANOVA) was performed using facility (RFPC and LFPC) as independent variable, and scores on the subscales of the EssenCES and the GCI-r as dependent variables. This was done to check for potential differences between facilities in the distribution of the scores. A power analyses for MANOVA anticipating on a medium effect size ( $f^2$ ) of .25, a desired statistical power of .95 at a probability level of .05 (based on Dickens, Suesse, Snyman, & Picchioni, 2014) suggested that a minimum sample size of 66 was required.

## Results

### Auxiliary analysis

In order to see whether data from the patients living in the RFPC and LFPC could be combined for further analysis a MANOVA was conducted. There were no significant differences between the RFPC and the LFPC facilities on the subscales of the EssenCES and the GCI-r (Pillais' Trace =.08,  $F(7,95) = 1.19$ ,  $p = .316$ ).

### Internal consistency

Cronbach's alpha reliability coefficients of the original scales were good for all factors in both instruments (see Table 2). Within the total sample, Cronbach's alpha of the EssenCES ranged from .78 to .81, Cronbach's alpha of the GCI-r ranged from .74 to .95. According to Helmstadte (1964) removal of an item would be wise in case of a CITC below .20, for the EssenCES this was the case for one item of the Patient Cohesion scale (Most patients don't care about their fellow patients' problems). For the other items of the EssenCES the CITC ranged from .47 to .71. One item of the Repression scale of the GCI-r (You have to ask permission for everything here) had a CITC<.20. For the other items of the GCI-r the CITC ranged from .34 to .81.

**Table 2.** Descriptive statistics EssenCES and GCI-r

	n	Mean	SD	Range	alpha
EssenCES* Patient cohesion	118	10.2	4.4	1 – 20	.78
EssenCES Experienced Safety	116	11.4	5.1	0 – 20	.78
EssenCES Therapeutic Hold	119	10.8	5.1	0 – 20	.81
GCI-r** Support	113	3.4	.93	1 – 5	.92
GCI-r Growth	119	3.2	1.1	1 – 5	.85
GCI-r Repression	121	3.1	.86	2 – 5	.74
GCI-r Atmosphere	120	3.3	1.0	1 – 5	.81
GCI-r Total score	110	3.2	.84	1 – 5	.95

\* the minimum and maximum total scores that can be obtained for the subscales of the EssenCES are: 0 –20 .

\*\* the minimum and maximum mean scores that can be obtained for the subscales of the GCI-r are: 1 – 5.

### Confirmatory factor analysis

The model results indicated satisfactory fit for the EssenCES three-factor model: CFI = .93, TLI = .92, and RMSEA = .05. All items loaded significantly on their target factors (see Table 3), with the exception of item 8 (Most patients don't care about

their fellow patients' problems). A revised model leaving item 8 out showed an improved fit: CFI = .95, TLI = .94, and RMSEA .05.

Regarding the GCI-r, model results indicated relatively poor fit: CFI = .82, TLI = .81, and RMSEA=.08. All items loaded significantly on their target factors, with the exception of item 3 (You have to ask permission for everything here). A revised model leaving item 3 out did not improve the model fit: CFI = .82, TLI = .81, and RMSEA = .08.

**Table 3.** Item loadings for the EssenCES following confirmatory factor analysis

Item	PC	ES	TH
The patients care for each other	.84*		
Even the weakest patient finds support from his fellow patients	.80*		
Most patients don't care about their fellow patients' problems	.17		
When a patient has a genuine concern, he finds support from his fellow patients	.77*		
There is good peer support among patients	.74*		
Really threatening situations can occur here		.64*	
There are some really aggressive patients on this ward		.58*	
Some patients are afraid of other patients		.67*	
At times, members of staff are afraid of some of the patients		.77*	
Some patients are so excitable that one deals very cautiously with them		.52*	
On this ward, patients can openly talk to staff about all their problems			.78*
Staff take a personal interest in the progress of patients			.73*
Staff members take a lot of time to deal with patients			.66*
Often, staff seem not to care if patients succeed or fail in treatment			.62*
Staff know patients and their personal histories very well			.63*

Note. PC=Patient Cohesion, ES=Experienced Safety, TH=Therapeutic Hold, \*  $p < .001$ .

### Concurrent validity

Correlational analyses showed significant relationships between all subscales of the EssenCES and the GCI-r (see Table 4). There was a significant positive relationship between the Therapeutic Hold scale of the EssenCES and the Support scale of the GCI-r. The Therapeutic Hold scale of the EssenCES correlated negatively with the Repression scale of the GCI-r. There was a significant positive relationship between the Experienced Safety scale of the EssenCES and Atmosphere scale of the GCI-r.

The highest correlation for the Patient Cohesion scale of the EssenCES was with the Atmosphere scale of the GCI-r. The highest correlation for the Growth scale of the GCI-r was with the Therapeutic Hold scale of the EssenCES. The relationship between the subscales within one instrument ranged for the EssenCES from  $r = .36$  to  $r = .43$ . The correlations between the subscales of the GCI-r measuring the positive aspects of ward climate (Support, Atmosphere, Growth) ranged from  $r = .56$  to  $r = .70$ . The Repression scale of the GCI-r (measuring a negative aspect of ward climate) correlated negatively with the positive GCI-r subscales, the range was between  $r = -.63$  to  $r = -.71$ .

**Table 4.** Pearson Correlations between the subscales of the EssenCES and the GCI-r

	PC	ES	TH	Support	Growth	Repression	Atmosphere
PC	1	.36*	.43*	.37*	.36*	-.39*	.60*
ES		1	.41*	.49*	.28*	-.46*	.71*
TH			1	.83*	.63*	-.72*	.58*
Support				1	.70*	-.71*	.66*
Growth					1	-.63*	.56*
Repression						1	-.66*
Atmosphere							1

Note. PC=Patient Cohesion, ES=Experienced Safety, TH=Therapeutic Hold, \*  $p < .001$

### Discussion

This study examined the psychometric properties of the EssenCES and the GCI-r, and the overlap between these instruments, in a high secure forensic psychiatric setting. The results indicate good internal consistency of the subscales of the EssenCES and the GCI-r. For the EssenCES, the factor structure was confirmed within this sample. However, further research is needed into the structural psychometric properties of the GCI-r, as the original factor structure was not replicated within this sample. The results of this study empirically confirm the existence of both overlap and differences between the EssenCES and the GCI-r, and provide further specification of the nature of both the commonalities and the discrepancies.

For the EssenCES, almost all items of the EssenCES reached high factor loadings on their expected dimension. The exception was item 8 (Most patients don't care about their fellow patients' problems), similar to what was reported in previous studies (Howells et al., 2009; Schalast & Laan, 2017). Milsom et al. (2014) reported



that they revised and reworded this item in their study and found that item 8 was strongly inter-correlated with the other items within the Patient Cohesion scale. The proposed factor structure of the GCI-r was not confirmed by factor analysis. Bivariate correlation analyses showed that the GCI-r and the EssenCES were strongly related. As expected, a strong positive relationship was found between the Support scale of the GCI-r and the EssenCES' Therapeutic Hold scale. Also, a strong positive relationship between the Atmosphere scale of the GCI-r and the Experienced Safety and Patient Cohesion scales of the EssenCES was found. However, it should be noted that strong correlations were found between the Atmosphere scale of the GCI-r and all the other scales (both of the EssenCES and GCI-r). When looking at the factor loadings of the items on the Atmosphere scale of the GCI-r, item 1 (The atmosphere is fine here) and item 4 (I feel fine here) have the highest loading coefficients, it could be argued that these two items might reflect a general result of ward climate as a whole.

In line with our expectations, the Repression scale of the GCI-r showed strong negative relationships with all other scales (both of the EssenCES and GCI-r). The highest correlation was with the Therapeutic Hold scale of the EssenCES and the lowest with the Patient Cohesion scale of the EssenCES. This finding supports the notion that the Repression scale measures a concept reflecting negative transactional processes (structure, power, coercion) between staff members and patients in closed setting (de Valk, Kuiper, van der Helm, Maas, & Stams, 2016). However, the items that make up the Repression scale of the GCI-r seem to be less homogeneous than the other scales (e.g., "You have to ask permission for everything", "I sometimes get really bored here", "Sometimes the surroundings are dirty", "The surroundings make me depressed"). Heynen and colleagues (2016) argued that the PGCI (from which the GCI-r is derived) needs further development, and they proposed to conceptually separate deprivation (unsatisfactory living conditions, such as a lack of privacy and boredom) and repression. De Valk et al., (2016) pointed out that repression is an important factor to take into account because of the risk closed settings bear (involuntary stay, unequal power distribution between staff and patients), and the supposed threat of repression to the rehabilitative goal. Feelings of powerlessness and repression are part of the subjective experience of receiving forensic mental health services (Livingston & Rossiter, 2011). Subsequently, it seems important to further investigate this concept, its definition, operationalization, contribution to ward climate, and effect on treatment efficacy.

Our expectation that the Growth scale of the GCI-r would show relatively low correlations with the subscales of the EssenCES was not supported. The Growth scale of the GCI-r was strongly related to the Therapeutic Hold scale of the EssenCES. It is plausible that focusing on facilitation of learning and preparation

for a meaningful life both within and outside the closed facility is an important element of therapeutic holding. Compared to the moderate relationships found among the three subscales of the EssenCES, relatively high correlations were found between all four subscales of the GCI-r. More research is needed to further explore whether the subscales of the GCI-r measure different aspects of ward climate. The relatively high correlations between the subscales of the GCI-r could be a potential explanation why the proposed factor structure of the questionnaire was not found within this study.

One issue that became evident from our study is that more attention needs to be paid to the characteristics of the instruments. Specifically, the items of the EssenCES and GCI-r differ in the perspective from which they are formulated. For instance, 72% of the items making up the scales of the GCI-r are formulated from a first-person perspective (21 of the 29 items), e.g.: "I learn the right things here", or "I trust the group workers". The items of the EssenCES are formulated from a more general perspective, inviting respondents to take the experience of other group members into account: "Even the weakest patient finds support from his fellow patients", or "At times, staff members are afraid of some of the patients". It remains unclear how exactly these differences in perspective have an impact on how the questionnaires are filled out. In the future, the effects of the perspective required for answering the items needs to be examined carefully to determine which approach is more suitable for measuring ward climate. Another caveat is that construct validity could not be fully tested, as there was no measure included that could be used to address discriminant validity. Also, although we used a robust non-parametric estimation procedure within the CFA, replication with larger sample is recommended, especially to test the original four-factor structure of the GCI-r. Finally, it could be the case that individuals that did not participate in the assessment have other views on ward climate than individuals that did participate. As the response rate per unit was relatively low it was not possible to generate "mean" climate scores for the units in order to explore variation in the evaluation of ward climate on a group level. In future research it would be interesting to compare instruments on their ability to detect variation in climate between units. Our findings illustrate the importance of considering how instruments may differ in the definition and operationalization of ward climate. Hence, instruments used in clinical practice seem to differ in the aspects of ward climate they aim to measure and the amount of empirical support that they do so in a valid way (see also Tonkin, 2015 for a review). Nursing staff and management within the high-secure forensic setting could use the knowledge derived from this and other studies in their choices related to monitoring ward climate. Our results are most favorable for the EssenCES as an instrument to monitor aspects of ward climate in samples similar to the one used in the current study. The EssenCES will invite individuals to

evaluate topics like safety, support, and cohesion on a group level (while taking other group members into account in their evaluation). Furthermore, the EssenCES can be used to measure how ward climate is perceived by both staff members and patients. Taking the perception of both staff and patients into account when monitoring ward climate is important, as their general perception of ward climate may differ (de Vries et al., 2016; Tonkin, 2015).

The GCI-r requires patients to reflect on their own personal experiences on the ward and will provide management and forensic nurses insights concerning whether patients personally feel supported, are given possibilities for growth and whether they experience negative aspects of ward climate. Until now, most validation studies were conducted in youth prisons using the PGCI (Heynen et al., 2014; van der Helm et al., 2011), and our study is among the first to investigate this instrument's psychometric properties in adult forensic patients. Importantly, the findings highlight that researchers and practitioners should be cautious when using the subscales of the GCI-r in similar populations as used within the present study, as the factor structure was not confirmed. Note that this does not imply that the use of the GCI-r should be avoided in forensic samples. For instance, there are indications that the GCI-r might be suitable to assess the perception of ward climate for clients with mild intellectual disability or borderline intellectual functioning in secure psychiatric forensic care, as the factor structure of the GCI-r has been supported there (Neimeijer et al., 2018). Taken together, this pattern of results pinpoints that the suitability of these self-report measures differs depending on the characteristics of the (sub)-populations being targeted.

A critical note is that although both the EssenCES and the GCI-r are relatively easy to use in clinical practice, both instruments draw a simplified picture of ward climate. There are studies advocating a more in-depth definition and operationalization of ward climate (Boone et al., 2016; Doyle et al., 2017). Alongside routine monitoring using short self-report measures, it has been recommended that more detailed information should be gathered by using more lengthy questionnaires (Tonkin, 2015), by means of focus groups, or through individual interviews with patients and staff (Boone et al., 2016; Doyle et al., 2017).

To conclude, the EssenCES and the GCI-r are instruments to measure partially overlapping aspects of ward climate. However, as the instruments differ in several ways further development and validation is needed. There are some important considerations that require attention, such as finding an appropriate definition of ward climate, determining which elements are important within adult forensic psychiatric setting, and determining which respondent types we are interested in. Ultimately, addressing these issues will help determine which instrument is best suited to measure this complex construct in clinical practice.

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## CHAPTER 3

Social ward climate within a high secure forensic psychiatric hospital: perceptions of patients and nursing staff and the role of patient characteristics



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## Abstract

Within this study the relationship between patient characteristics (age, length of stay, risk, psychopathy) and individual perceived ward climate ( $n = 83$ ), and differences between staff's and patient perceptions of climate ( $n = 185$ ) was investigated within a high secure forensic hospital. Results showed that therapeutic hold was rated higher among staff compared to patients, while patients held a more favorable view on patient cohesion and experienced safety. Furthermore, patient characteristics (age, risk and psychopathy) were found to be related with individual ratings of ward climate. The findings underline the importance of assessing ward climate among both patients and staff in clinical practice.

## Introduction

Ward climate is an important factor within the treatment of inpatients in secure settings and has been studied for almost 50 years. Ward climate can be seen as a multifactorial construct including the material, social, and emotional conditions of a given ward and the interaction between these factors (Moos, 1989; Tonkin, 2015). Ward climate is found to play a role in therapeutic outcomes like drop out-, release-, and re-admission rates (Moos, Shelton, & Petty, 1973), patient satisfaction (Bressington, Stewart, Beer, & MacInnes, 2011; Middelboe, Schjødtt, Byrting, & Gjerris, 2001; Nettet, Rossberg, Almvik, & Friis, 2009; Røssberg & Friis, 2004), motivation for treatment (van der Helm, Beunk, Stams, & van der Laan, 2014), treatment engagement and therapeutic alliance (Long et al., 2011). Climate can be seen as an aspect of program responsivity that enhances treatment effects (Beech & Hamilton-Giachritsis, 2005; Howells & Day, 2003; Ward, Day, Howells, & Birgden, 2004). Ward climate has also found to be a determinant of staff well-being, playing a role in staff performance and morale (Moos & Schaefer, 1987), job satisfaction (Bressington et al., 2011; Middelboe et al., 2001; Røssberg & Friis, 2004), and occupational stress (Kirby & Pollock, 1995).

The relationship between ward climate and organizational- and therapeutic outcomes underlines the importance of establishing and maintaining an environment in which therapeutic progress is encouraged and that supports staff ability to deliver responsible high quality care to their patients. However, creating an optimal climate within a high security forensic setting can be very challenging due to the complex patient population, involuntary admission within a closed setting and the balance between security needs and treatment goals (Burrows, 1991; Camping, Davies, & Farquharson, 2004; Howells, Krishnan, & Daffern, 2007). Moreover, patients and staff members working within forensic psychiatric settings seem to evaluate ward climate differently (Caplan, 1993; Day, Casey, Vess, & Huisy, 2011; Dickens, Suesse, Snyman, & Picchioni, 2014; Howells et al., 2009; Livingston, Nijdam-Jones, & Brink, 2012; Long et al., 2011; Moos, 1975; Morrison, Burnard, & Phillips, 1997; Røssberg & Friis, 2004; Schalast, Redies, Collins, Stacey, & Howells, 2008). For instance, Howells et al. (2009) found that patients in a high secure hospital service in the United Kingdom (UK) evaluated cohesion among patients more favorably than staff members. Another study found that patients in open, low and medium secure wards of a psychiatric hospital in the UK evaluated the ward climate as safer than staff members (Dickens et al., 2014). In both studies, staff members evaluated the therapeutic hold (how much the environment is supportive of therapy and therapeutic change) more favorably compared to patients. Caplan (1993) found that staff and patient perceptions differed with regard to several scales of the Ward Atmosphere Scale (WAS; Moos & Houts, 1968; Moos, 1989,

1974), including order and organization, program clarity and staff control. Possible explanations given in previous research for the divergent perceptions between nursing staff and patients are, the different roles and functions that staff and patients have within a forensic institution (Caplan, 1993; Goffman, 1961; Røssberg & Friis, 2004), and the restrictions to the liberty and personal freedom of incarcerated patients (Langdon, Cosgrave, & Tranah, 2004). Patients' restricted liberty could also be a potential explanation for the finding that the perception of climate differs as a function of the level of security (Dickens et al., 2014; Long et al., 2011; Milsom, Freestone, Duller, Bouman, & Taylor, 2014).

It follows that gaining insight into patients' and staff's perception of ward climate is highly informative and promotes the discovery of potentially meaningful discrepancies between the groups. Friis (1986) has argued that the patient's perception of the ward milieu can be seen as a most important indicator of how the milieu affects the patient. When striving to keep patients in a responsive therapeutic environment which is designed to address their needs (in order to enhance treatment efficacy), it is important to have insight in how the climate is actually perceived by patients. Forensic nurses could use this information in their daily work, actively discussing the different views on ward climate within their team and with their patient group. Together they could identify different needs, create opportunities for improvement of the treatment milieu and subsequently improve treatment success.

Importantly, however, ward climate perception is also dependent on other factors. Recent research by Dickens et al. (2014) revealed associations between patient characteristics and mean evaluation scores of ward climate. They found that female gender positively predicted patient cohesion and perceived safety measured with the Essen Climate Evaluation Scale (EssenCES; Schalast et al., 2008) among patients residing in open, low and medium secure forensic settings. Furthermore, higher perceived risk measured with the Historical, Clinical and Risk Management 20 (HCR-20; Webster, Douglas, Eaves, & Hart, 1997) was associated with lower perceived patient cohesion, a diagnosis of personality disorder or psychosis according to the ICD-10 (WHO, 2010) was related to higher experienced safety, and higher levels of engagement (i.e., the number of programmed therapeutic sessions attended over a two-week period) was associated with greater therapeutic hold. While not accounting for all relationships presented above, the relationship between ward climate and various environmental, social and individual characteristics might reflect the interplay between patients' (security) needs and climate. Hence, individuals at high risk of showing violence or who are suffering from severe psychiatric problems might have higher security needs, leading them to be more exposed to physical, procedural and relational security, ultimately influencing their (perception of) ward climate. Norton (2004) describes how five functional properties of a ward (containment, support, structure, involvement and validation)

can also reflect the patient's changing needs, and how the emphasis on these factors can change during a treatment process (and during crisis situations).

In contrast to the study of Dickens and colleagues (2014) there is also research showing that patient characteristics have a small or no impact on ward climate (Moos, 1997; Pedersen & Karterud, 2007). Pedersen and Karterud (2007) found no substantial associations between patient characteristics (gender, age, level of education, self-reported symptom distress, interpersonal problems, diagnosis) and individual ratings of treatment milieu. Data were collected from patients (71% women) suffering mainly from personality, mood and anxiety disorders who had been admitted to day-treatment units. Pedersen and Karterud (2007) argue that since differences between patients' views on ward climate cannot be attributed to patient characteristics they must be largely idiosyncratic. Alternative explanations for the discrepant findings with regard to the role of patient characteristics might be found in differences in methodology (using the EssenCES versus the WAS for assessing climate), and different clinical setting/samples used in the studies of Dickens et al. (2014) and Pedersen and Karterud (2007).

Contradictory findings highlight the importance of conducting more research in order to disentangle the possible relationships between patient characteristics and ward climate within secure forensic settings. Gaining more knowledge about these relationships could be beneficial for clinical practice by providing guidance for active management of ward climate. Hence, when striving to keep patients in a therapeutic environment designed to address their needs, taking into account individual patient characteristics is essential. In order to do so, more research is needed, demonstrating whether or not certain personal characteristics are related to the perception of ward climate. When relationships and underlying mechanisms are clearer, this knowledge could be used to guide assessment, evaluation, assignment to specific wards, composing patient groups and staff training.

Since there are very few studies of the relationship between ward climate and patient characteristics this study contributes to an under-explored but important area. The aim of this current study is to provide more insight into the relationship between patient characteristics and perceived ward climate. Based on previous findings, the demographic characteristics that might be related to perception of ward climate targeted in the present study were patients' age (Campbell, Allan, & Sims, 2014; Middelboe et al., 2001; Pedersen & Karterud, 2007), length of stay within the facility (van der Helm et al., 2014), and risk of violence (Dickens et al., 2014). With respect to pathological personality features, there are reports that psychopathy may be a key determinant of climate in forensic therapeutic settings (Harkins, Beech, & Thornton, 2012). Psychopathy is a severe condition characterized by a combination of personality characteristics entailing disturbed interpersonal-affective functioning combined with high anti-sociality (Neumann, Hare, &

Newman, 2007). Therefore, the impact of having psychopathic features on the perception of ward climate was also assessed. This study has an explorative nature, since the literature provides inconclusive findings and therefore precludes the formulation of clear hypotheses.

As very little research on ward climate has been conducted outside of the US and the UK, this study also aims to assess whether the differences between patients' and staff's perceptions of ward climate can be found in the high secure forensic setting in the Netherlands. Based on previous findings, we hypothesized that patients should report higher levels of experienced safety and patient cohesion compared to staff members and that staff members should report higher levels of therapeutic hold compared to patients. To conclude, the aim of this current study is to provide more insight into the differences between patients' and staff's perceptions of ward climate, and into the relationship between patient characteristics and perceived ward climate.

## Materials and Methods

### Subjects

Data were collected within a high secure forensic psychiatric institution in the Netherlands. In the Netherlands, offenders who have committed a serious crime, (partly) due to a psychopathological condition (Diagnostic and Statistical Manual of Mental Disorders, version IV-TR axis-I and/or axis-II disorder; American Psychiatric Association, 2000), can be assigned to a measure to be treated on behalf of the state (Ter Beschikking Stelling; TBS). TBS is not a punishment, but an entrustment act for offenders with mental disorders, which aims to protect society against the risk of recidivism through incarceration and treatment.

Between 2007 and 2012 a total of 1399 measurements of the EssenCES were obtained (891 EssenCES scored by staff members and 508 by patients, including repeated measures). In order to include as many participants as possible within the analysis of this present study two sub-samples were extracted from this total dataset. One sample was used to compare staff members and patients' views on ward climate. Therefore, only wards where at least half of the staff members and half of the patients participated during the same measurement point, were selected. A response rate of at least 50% seemed sufficient to obtain a climate profile (Dickens et al., 2014). Schalast et al. (2008) argue that it is not necessary for all patients and staff to fill in the questionnaire to get a realistic or valid view. This method resulted in a sample of 72 patients and 113 staff members from 13 wards. In order to investigate the reliability of the scale within this Dutch forensic sample and in order to look at the role that individual patient characteristics play in the

perception of ward climate, the first measurement from each participant (excluding repeated measures), was extracted from the total dataset to form a second sample. This resulted in a sample of 373 participants, 154 patients and 219 staff members. Demographic and clinical characteristics of the participating patients are shown in Table 1. All participating patients were male and were diagnosed with one or more diagnoses on Axis I and/or Axis II defined according to the DSM IV/V (American Psychiatric Association, 2000).

### Procedure

The data collection was part of routine evaluation of the ward climate within the institution. Staff members working on the wards and patients that resided on the wards were routinely (three times per year) asked to complete the EssenCES. The researcher gave oral and written information concerning the data collection, the study aims and objectives. Staff members completed the measures during work hours, patients were rewarded with €2.35. The completed questionnaires were returned to the researcher, after which the scores were entered into SPSS version 20 (IBM, SPSS Statistics) for analyses.

Data on patient characteristics (age, length of stay, disorder, risk, and psychopathy) were extracted from the clinical records of the patients and added to the SPSS database. Collection of data about, e.g., mental disorders (DSM IV/V) and level of risk (HCR-20) is important and mandatory upon admission to the forensic mental health system. As the HCR-20 (and in some cases the PCL-R) are administered multiple times in order to monitor a patient's risk, the assessment that had taken place most closely to the assessment of climate was used in this study.

### Measures

#### Climate

The Essen Climate Evaluation Schema (EssenCES; Schalast et al., 2008) is a 17-item questionnaire measuring three aspects of climate in forensic services (therapeutic hold (TH), experienced safety (ES), and patients' cohesion and mutual support (PC)). The first and final items of the questionnaire are not scored, since they are meant to start and end the questionnaire with a positive note. Examples of items representing the different factors are 'The patients care for each other' (PC), 'Really threatening situations can occur here' (ES), 'On this ward, patients can openly talk to staff about all their problems' (TH). The Dutch translation of the EssenCES was used (Bulten & Fluttert, 2007). Ratings were obtained using a Visual Analogue response Scale (VAS) ranging from 'not at all' (0) up to 'very much' (100). The scores on items 3, 6, 8, 9, 12, 13, 15 were reversed prior to analyses, as a result high scores reflect a positive perceived ward climate. Several studies provide good empirical support for the psychometric properties of the EssenCES

(Howells et al., 2009; Schalast et al., 2008; Tonkin et al., 2012). Tonkin (2015) reported in a review ten studies on the internal consistency of the EssenCES, the mean Cronbach's alpha's ranged from: .82 (PC), .77 (ES), and .81 (TH).

### Risk for violence

The HCR-20 (Webster et al., 1997) is a risk assessment tool broadly used by clinicians to assess risk of future violence. The HCR-20 reliably predicts future violence (Douglas & Webster, 1999). The HCR-20 consists of 20 items (rated on a three-point scale 0 = criteria is not present, 1 = possibly present and 2 = definitely present) divided into three subscales, historical, clinical, and risk management that relate to risk factors in the past, present and future.

### Psychopathy

The Hare Psychopathy Checklist – Revised (PCL-R; Hare, 2003) is a clinical tool for assessing psychopathy. The 20 items are scored (as 0, 1 or 2) by two independent trained raters based on a semi-structured interview and case-history information. Sum scores can be obtained for four facets, reflecting interpersonal problems, affective problems, impulsive behavior lifestyle and antisocial behavior (Hare, 2003; Hare & Neumann, 2005).

### Statistical Analyses

Mean scores and standard deviations on the EssenCES subscales were calculated. Internal consistency was examined using Cronbach's alpha ( $\alpha$ ) and corrected item total correlation (CITC) coefficients. Internal consistency was examined for the sample as a whole, as well as for staff and patients separately. A one-way multivariate analysis of variance (MANOVA) was conducted to see whether scores on the subscales of the EssenCES differed between respondent types (staff, patient). The subscores on PC and TH of two staff members and the subscore of one staff member on ES could not be taken into account due to missing items on the EssenCES. To assess the relationship between patient characteristics and ward climate path analyses were conducted using Mplus v7.0 (Muthen & Muthen, 1998). Age, length of stay, the four facet scores of the PCL-R and the scores for the three scales of the HCR-20 were entered as predictors, while the scores on the three scales of the EssenCES served as mutually related dependent variables. Not all patients had a score on the PCL-R (PCL-R Interpersonal scale: 37 missing values; Affective scale: 46 missing values; Lifestyle scale: 48 missing values; Antisocial scale: 55 missing values). Also not all the HCR-20 scores were available (HCR-20 Historical scale 33 missing values; Clinical scale: 23 missing values; Risk scale: 24 missing values).

Eighty three patients had scores on all variables and were included in the analyses. A Bayesian estimator was used with 5 Markov chain Monte Carlo (MCMC) chains and 75000 iterations using the default Gibbs sampler (PX1) in Mplus. The Bayesian estimator has been found to outperform traditional maximum likelihood estimators (Muthén, 2010) and provides reliable results even in relatively small samples (e.g.,  $n = 50$ ) (Scheines, Hoijtink, & Boomsma, 1999). As is common in Bayesian analyses, the first half of the MCMC iterations was discarded to reduce the effect of the initial values found by the chains (burn-in trials). Model fit was determined using three different fit indexes for Bayesian testing: i) chi-square tests to conduct posterior predictive checking (95% credibility interval; CI), ii) the posterior predictive P-value (PPP-value) and iii) convergence according to the Gelman-Rubin criterion based on the potential scale reduction (PSR) factor for each parameter (Gelman & Rubin, 1992; Gelman, Carlin, Stern, & Rubin, 2004, pp. 296–297). In general, the 95% CI for the chi-square posterior predictive checking should include the value 0 (in contrast to non-Bayesian frameworks), the PPP-value should be close to the value 0.50 and convergence is achieved when the PSR is below 1.05 (Muthen & Muthen, 1998). Significance of the regression weights were determined based on the 95% CIs of the Bayesian posterior distribution. Regressor CIs not containing the value 0 were considered significant.

## Results

From the patient group ( $n = 154$ ) demographic and clinical characteristics are displayed in Table 1.

### Internal Consistency

The internal consistency of the EssenCES was assessed using Cronbach's alpha ( $\alpha$ ) and corrected item total correlation (CITC) coefficients. Within the total sample Cronbach's  $\alpha$  ranged from .73 to .84 (see Table 2). CITC ranged from .45 to .74. According to Helmstadte (1964) a CITC above .50 is considered high and  $\alpha$  should exceed .70. Furthermore, removal of an item would be wise in case of a CITC below .20.

Within the patient sample Cronbach's  $\alpha$  ranged from .76 to .84. CITC ranged from .37 to .74. Within the staff sample CITC ranged from .30 to .76 and Cronbach's  $\alpha$  ranged from .67 to .85. No CITC values below .20 were found and almost all Cronbach's alpha values exceed .70, except for TH in the staff sample ( $\alpha = .67$ ). These findings indicate satisfactory internal consistency for the Dutch translation of the EssenCES. Since Cronbach's alpha values are sensitive to the length of a scale, it is common to find lower  $\alpha$  values (around .5) for short scales like the EssenCES (Cortina, 1993).



**Table 1.** Demographic and clinical characteristics of the patient sample<sup>1</sup>.

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Range</i>
Age (in years)	154	39.25	10.02	22 - 67
Length of stay (in months)	154	29.20	24.87	0 - 145
EssenCES* Patient cohesion	154	258.79	110.20	0 - 500
EssenCES Experienced Safety	154	266.10	113.79	0 - 494
EssenCES Therapeutic Hold	154	230.16	124.49	0 - 500
PCL-R Total score**	120	19.65	7.05	6 - 36
PCL-R Interpersonal scale	117	3.19	2.00	0 - 8
PCL-R Affective scale	108	5.24	2.21	0 - 8
PCL-R Lifestyle scale	106	5.15	2.44	0 - 10
PCL-R Antisocial scale	99	5.22	2.80	0 - 10
HCR Final risk judgment***	132	3.01	1.41	1 - 5
HCR Historical scale	121	14.01	2.53	6 - 18
HCR Clinical scale	131	4.60	1.95	0 - 9
HCR Risk management scale	130	4.81	2.40	0 - 10

\* the minimum and maximum scores that can be obtained for the subscales of the EssenCES using a Visual Analogue Response scale are: 0-500.

\*\* the minimum and maximum scores that can be obtained for the PCL-R are: Total: 0-40; Interpersonal and Affective scale: 0-8; Lifestyle and Antisocial scale: 0-10.

\*\*\* the minimum and maximum scores that can be obtained for the HCR-20 are: Final risk judgment: 0-5; Historical scale: 0-20; Clinical scale: 0-10; Risk management scale: 0-10.

### Patient Perception Versus Staff Perception of Climate

A MANOVA was conducted to compare patients and staff in terms of their scores on the subscales of the EssenCES (see Table 3). A statistically significant MANOVA effect was obtained, Pillais' Trace = .31,  $F(3, 178) = 27.16$ ,  $p < .001$ . The univariate  $F$  tests showed that there was a significant difference between staff and patients on all subscales of the EssenCES, PC:  $F = 8.07$ ,  $df = (1,180)$ ,  $p = .005$ ; ES:  $F = 21.23$ ,  $df = (1,180)$ ,  $p < .001$ ; and TH:  $F = 37.24$ ,  $df = (1,180)$ ,  $p < .001$ .

<sup>1</sup> Mean scores and standard deviations of the sub-sample used in the path analysis are comparable with the scores reported here. Descriptives are available from the first author on request.

**Table 2.** Internal consistency (Cronbach's  $\alpha$ ) of the EssenCES.

Scale	Patients ( <i>n</i> =154)	Staff ( <i>n</i> =219)	Total ( <i>n</i> =373)
Patient Cohesion	.82	.85	.84
Experienced Safety	.76	.70	.73
Therapeutic Hold	.84	.67	.84

**Table 3.** Results of the MANOVA analysis.

Statistic	Patients <i>n</i> = 72	Staff <i>n</i> = 110	<i>F</i> ( <i>df</i> )	<i>p</i>
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )		
Multivariate test			27.16 (3,178)	< 0.001
Univariate tests				
Patient cohesion	250.19 (111.98)	209.69 (80.24)	8.07 (1,180)	.005
Experienced safety	268.15 (101.11)	208.72 (72.81)	21.23 (1,180)	< 0.001
Therapeutic hold	241.51 (127.18)	327.23 (60.34)	37.24 (1,180)	< 0.001

### Patient Characteristics Predicting Perceived Ward Climate

The model as a result of the Bayesian path analysis is displayed in Fig. 1. Age, length of stay, the 4 facet scores of the PCL-R and the scores for the 3 scales of the HCR-20 were entered as predictors, while the scores on the 3 scales of the EssenCES served as mutually related dependent variables. The item of the HCR-20 measuring psychopathy was left out when computing the historical scale since psychopathy was assessed in this study with a fine grained psychopathy measure, the PCL-R. Regarding model fit, the 95% CI of the chi-square check of the posterior predictive ranged from -24.01 to 29.38, PPP-value was 0.43 and the PSR was below 1.05. Thus, all model fit indexes indicated good model fit. Results showed (see Table 4) that patient cohesion was negatively predicted by the antisocial facet of the PCL-R ( $\beta = -.32$ ) and positively by the historical factor of the HCR-20 ( $\beta = .30$ ). Experienced safety was positively predicted by the historical factor of the HCR-20 ( $\beta = .33$ ). Therapeutic hold was positively predicted by age ( $\beta = .27$ ), the interpersonal facet of the PCL-R ( $\beta = .23$ ), and negatively by the clinical factor of the HCR-20 ( $\beta = -.34$ ). PC was related to TH  $r = .35$ , and ES  $r = .39$ .

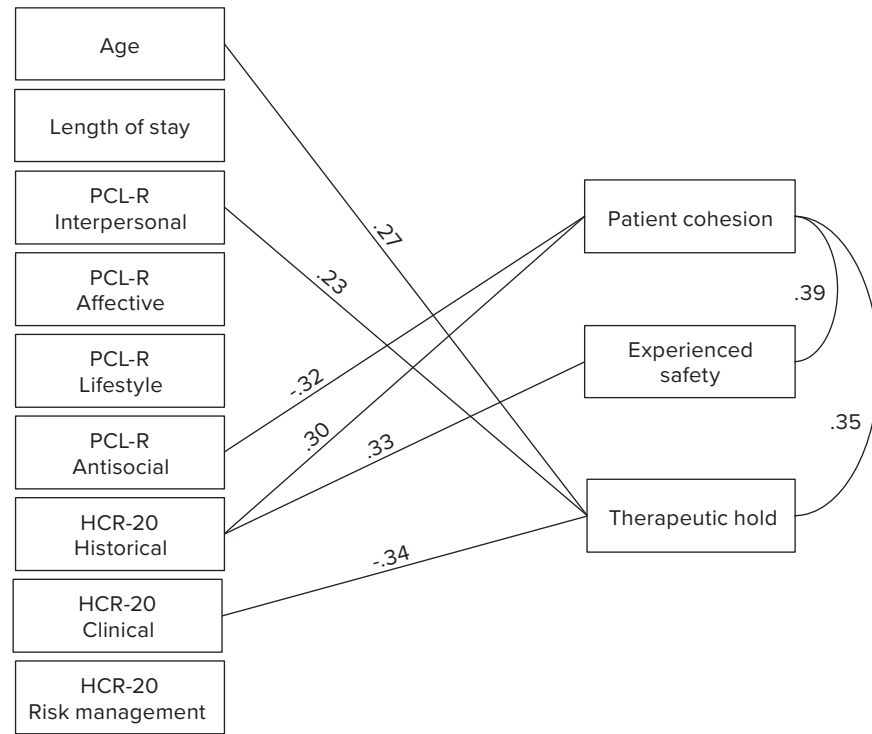


Fig. 1. Bayesian path analysis, only significant relationships are displayed, estimate ( $\beta$ ).

Table 4. Standardized results of the Bayesian path analysis.

Dependent variables	Predictor	Estimate ( $\beta$ )	95% C.I.	
			Lower 2.5%	Upper 2.5 %
Patient Cohesion	Age	-0.005	-0.209	0.203
	Length of stay	-0.035	-0.234	0.166
	PCL-R Interpersonal	-0.039	-0.274	0.199
	PCL-R Affective	0.165	-0.086	0.396
	PCL-R Lifestyle	0.051	-0.206	0.308
	PCL-R Antisocial	-0.324	-0.611	-0.003 *
	HCR-20 Clinical	0.027	0.251	0.302
	HCR-20 Historical	0.301	0.001	0.575 *
	HCR-20 Risk management	0.090	-0.180	0.348
Experienced Safety	Age	0.153	-0.053	0.342
	Length of stay	0.099	-0.100	0.288
	PCL-R Interpersonal	-0.016	-0.245	0.217
	PCL-R Affective	0.137	-0.106	0.368
	PCL-R Lifestyle	0.183	-0.074	0.425
	PCL-R Antisocial	-0.194	-0.485	0.118
	HCR-20 Clinical	-0.027	-0.295	0.245
	HCR-20 Historical	0.333	0.037	0.593 *
	HCR-20 Risk management	-0.114	-0.363	0.151
Therapeutic Hold	Age	0.265	0.070	0.440 *
	Length of stay	0.027	-0.163	0.214
	PCL-R Interpersonal	0.229	0.001	0.438 *
	PCL-R Affective	-0.047	-0.276	0.183
	PCL-R Lifestyle	0.155	-0.094	0.389
	PCL-R Antisocial	-0.109	-0.396	0.193
	HCR-20 Clinical	-0.344	-0.581	-0.076 *
	HCR-20 Historical	0.131	-0.151	0.399
	HCR-20 Risk management	0.037	-0.214	0.285
Patient cohesion	Experienced safety	0.393	0.172	0.577 *
Patient cohesion	Therapeutic hold	0.353	0.126	0.545 *
Experienced safety	Therapeutic hold	0.229	-0.007	0.443

## Discussion

The aim of this present study was to provide insight into the relationship between patient characteristics and perceived ward climate, and to see whether the differences between patients' and staff's perceptions of ward climate previously found in the US and the UK can be found in a high secure forensic setting in the Netherlands.

The results show that staff and patients from high secure forensic wards differ in the way they evaluate climate. Therapeutic hold was rated higher among staff members compared to patients, which is consistent with previous research (Dickens et al., 2014; Howells et al., 2009; Long et al., 2011; Schalast et al., 2008). The consistency of this finding across different facilities, ranging from open to high security, indicates that this is quite a stable difference in perception between these two groups. With regard to the other two subscales of the EssenCES (PC and ES), patients held a more favorable view compared to nursing staff. These results are in line with previous studies, reporting differences between staff's and patients' perceptions on ES (Dickens et al., 2014) and PC (Howells et al., 2009).

The finding that staff members and patients differ on all three subscales of the EssenCES supports the notion that the different roles and functions that staff and patients have within a forensic institution influence their perception of the ward climate. In line with that argumentation, a potential explanation for the difference on therapeutic hold is perceived lack of control of patients on the therapeutic environment (Brunt & Rask, 2007; Dickens et al., 2014). In their study, Brunt and Rask (2007) interpreted patients' negative statements about personal qualities of staff as an indication of experiences of repressiveness in a coercive system. Another possible mechanism explaining the difference found between patients' and staff's perception of ward climate could be an interpretation bias. Research on self-serving bias indicates that being observer or actor of a task influences the attributions made (Campbell & Sedikides, 1999). Since therapeutic hold targets mostly staff's work and patient cohesion and safety could be interpreted as more influenced by actions of the patient group, the differences are understandable. However, in order to disentangle the specific factors playing a role in the differences in perceptions between patient and staff further research is needed. In the future, it would be beneficial to administer a measure of socially desirable responding or a measure of attribution bias or locus of control alongside the EssenCES, which could then be controlled for in any subsequent analyses. Furthermore, qualitative research (in-depth interviews with patients and staff) might help to gain more insight into the underlying processes. However, these kinds of methods/measures assume that people are capable of introspection, and that they are motivated and willing to report their attitudes and beliefs accurately.

Assuming that this is not always the case, another interesting direction might be found in more implicit measures. Future research could focus on implicit associations or automatic responses staff members might have toward specific patients or their attitude toward several treatment orientations. There are some indications that implicit attitudes are related to nursing behavior. Hence, medical visit communication between nurses and patients and patients' perceptions of care seem to be associated with both implicit attitudes about race and stereotyping (Cooper et al., 2012). Furthermore, implicit prejudice is found to mediate the relationship between experiences of job stress and intention to change jobs among drug and alcohol nurses (von Hippel, Brener, & von Hippel, 2008).

With regard to the relationship between patient characteristics and ward climate, the results of this current study show that high scores on the patient cohesion subscale are negatively associated with the antisocial facet of the PCL-R, and positively with the historical factor of the HCR-20. Contrary to this finding, Dickens et al. (2014) found a negative predictive value of the HCR-20 total-score on the level of cohesion on a ward. The explanations given by Dickens and colleagues are that individuals with a higher level of risk of future violence influence cohesion among patients negatively or that the risk of violence might be lowered by more cohesion on a ward. It is important to note that the operationalization of the outcome measures used in the present study and the study of Dickens and colleagues differs. While Dickens focused on how patient characteristics are represented on a ward and how this relates to ward climate as a group score (mean of all patients' scores), this current study used individual scores on patient characteristics as predictors and individual perceived ward climate as an outcome measure. Also, there are several other differences between the study of Dickens and colleagues and our study that could possibly account for the different findings. For example, 62% of the data collected by Dickens et al. (2014) came from low security wards while the data of this study were collected within a high secure forensic setting. Risk was also operationalized differently, while Dickens and colleagues used the total score of the HCR-20, this current study uses the three subscales of the HCR-20, historical, clinical, and risk management in order to get more detailed insight into the relationships between risk and climate.

The results show that differentiating between the three risk scales of the HCR-20 is useful in the prediction of climate. Hence, in predicting individual perceived climate the historical scale of the HCR-20 is found to positively predict patient cohesion and experienced safety. A potential underlying mechanism explaining the relationship between the historical risk factor and patient cohesion might be that the current environment (within the clinic) might be significantly better compared to patients' past environment with regard to the amount of support and safety. It might be that patients scoring high on the historical risk factors have

experienced low levels of support during their life and evaluate even a little amount of support more positively than patients who are used to living in a supportive environment. With regard to safety, patients scoring high on the historical risk factors might be less susceptible to feeling a lack of safety due to their history of violence and/or personality disorder. It could also be the case that they are the more aggressive/intimidating patients on a ward, which causes other patients to feel unsafe.

A potential underlying mechanism of the negative predictive value of the antisocial facet of the PCL-R in patient cohesion might be that these antisocial patients find it difficult to interact with other patients. With regard to the relationship between psychopathy and social functioning and adaptation in a normal population, Baird (2002) demonstrated that primary psychopathy (egocentricity, manipulateness, deceitfulness, and having a lack of remorse) is not detrimental but also does not benefit social functioning. Moreover, it was found that secondary psychopathy (antisocial behaviors and an unstable, self-defeating lifestyle) was related to a lack of success in social functioning. Furthermore, patients scoring high on the anti-social facet of the PCL-R might have difficulties adhering to clinic/ward rules, leading them to be either frequently secluded or socially isolated from the group. In research among juvenile psychiatric inpatients, psychopathy has been associated with poorer institutional adjustment in the form of increased number of intensive supervision placement as a result of fighting, refusing to attend school or other mandatory activities, hurting oneself or others (Taylor, Kemper, & Kistner, 2007). A link between psychopathy and removal for serious non-compliance and rule violation has also been found in incarcerated female offenders in a substance abuse treatment program (Richards, Casey, & Lucente, 2003).

Therapeutic hold was predicted by three of the nine included patient characteristics. This result differs from results found in previous research where age was not found to be related to the perception of ward climate (Campbell et al., 2014; Middelboe et al., 2001; Pedersen & Karterud, 2007). In our study there was a positive relationship between age and therapeutic hold. A potential underlying mechanism might be that with increasing age patients become wiser, and calmer. Patients might get more notion of, and respect for the intentions of staff members for their recovery. There is research demonstrating that age is an important factor in the early formation of a therapeutic relationship. For example, Rosen and colleagues (2012) found that matching out-patients from mental health and substance abuse services and therapists on age positively affected the intake process.

The interpersonal facet of the PCL-R was positively- and the clinical factor of the HCR-20 was negatively related to the perception of therapeutic hold. One interpretation is that individuals scoring high on the interpersonal factor of the PCL-R might have more positive contact with staff members due to their charm

and manipulative behavior. In line with this, a study in a non-forensic sample found that individuals with relatively high scores on interpersonal and affective aspects of psychopathy did not show impairments in social adaptation (Baird, 2002). On the other hand it could also be that their grandiose sense of self-worth influences their perception of the therapeutic holding by staff. Patients scoring high on the clinical factor of the HCR-20 (having more problems) tend to evaluate the climate as less therapeutic. It could be that their negative attitude and lack of insight resonates in their evaluation of the therapeutic holding on a ward. In order to see whether the relationship between the interpersonal factor of the PCL-R, the clinical risk factor of the HCR-20 and therapeutic hold is a result of the environment that differs as a function of patient needs, or whether the explanation lies more within the perception of the patient, it would be desirable to incorporate measures giving more insight into patients' (security) needs and the therapeutic contact between staff and patients (for instance the frequency, perceived quality, and duration of the time spent with each other) in the future.

The present study demonstrates that there are patient characteristics associated with individual ratings of ward climate. However, the precise mechanisms underlying the relationships between patient characteristics and individual perceived ward climate requires further examination. As mentioned before, the relationship between patient characteristics and the perception of ward climate might reflect the interplay between patients' (security) needs and the environment/ climate. As climate needs to be adaptive and responsive to patients' needs it would be interesting to conduct longitudinal research to assess the perception of ward climate at regular intervals during several years, to see whether the perception of climate changes as a function of changes in (security) needs of patients.

The findings of this study add and underline the importance of assessing ward climate among both patients and staff in clinical practice. Since ward climate is perceived differently between these two groups, the perception of the staff cannot be regarded as a valid indicator of how the climate is perceived by patients. Detailed feedback differentiating between patients' scores and staff scores could provide insight into potential discrepancies between groups. When discrepancies between staff and patients' views are clear on a ward, interventions (for example active discussion between staff and patients or staff training) can take place aimed at fine-tuning climate on a ward. Given that staff and patients differ in their perceptions of the ward climate, suggests that interventions designed to improve the perceived climate on a ward should target different aspects when delivered to staff compared to when they are delivered to patients. Service managers could choose or design interventions to improve perceptions of climate in both staff and patients.



Research has shown that active participation of staff (and patients) is a key factor in the process of improving perceptions of ward climate (James, Milne, & Firth, 1990; Moos, 1973). Nessel et al. (2009) indicate for instance that a 3-week staff training program concerning important aspects of treatment milieu (with a particular focus on the relationship between patients and nursing staff and staff members' behavior and their attitudes toward the patients), can improve ward climate as perceived by patients within a forensic psychiatric ward. After the intervention, patients reported an increase in a number of WAS scales, including involvement, support, practical orientation (how much patients learn practical skills and are prepared for release from a program), order and organization (the importance of order and organization in a program), as well as a lower level of anger and aggressive behavior. Another potential important aspect for management of ward climate, described by Norton (2004), is that patients know what they can expect from the environment (nurses) and what is expected from them. Norton argues that the overall therapeutic objectives of a ward need to be clear. These objectives can for instance be documented for staff and patients, accompanied with methods used on a ward to achieve them. Although additional research into the relationships between patient characteristics and individual perceived climate is needed, this knowledge could potentially be beneficial for active management of ward climate. Knowledge on the relationship between patient characteristics and the perception of climate on a ward could for instance assist service managers in the composition of patient groups. Furthermore, insights could be implemented in staff's training programs, informing them what they can expect from patients with regard to their perception of climate (for instance, which patients might be susceptible for feelings of unsafety or for perceiving lower levels of therapeutic hold).

There were various limitations to this study that should be noted. Firstly, the sample was drawn from a single high secure forensic hospital in the Netherlands, limiting generalizability of the results. Replication of these results is needed in other high secure forensic hospitals. A second limitation would be missing data as a result of the participation of patients on voluntary base. It could be that individuals that did not participate in the assessment have other views on climate than individuals that did participate. Nevertheless, in order to gain a valid and realistic assessment, we aimed at intrinsically motivated, spontaneous participation. Therefore, in line with recommendations of the authors of the EssenCES, assessment took place by inviting instead of urging staff members and patients to fill in the questionnaire. Also, not all information from clinical files was available for the researchers for several reasons. For instance, some participants were administered to and discharged from the clinic before routine assessment of risk became obligatory, some clinical files were not (yet) up to date and sometimes missing items on a scale resulted in missing scores on subscales. The possibility that

individuals with missing data (that were thus excluded from the path analysis) would change the results when included can therefore not be ruled out. Third, our study only entails a couple of patient characteristics that could be related to the perception of ward climate. Other characteristics that would be worth adding in future research are for instance, type of offence, treatment engagement, and amount of leave taking.

Despite the limitations of this study, the findings further our knowledge about an under explored topic, namely the relationship between patients' characteristics on individual perceived climate, using sophisticated statistical techniques. Also, this study extends earlier research conducted mostly in the US and the UK to the high secure forensic setting in the Netherlands. This study is the first to demonstrate differences between staff members and patients on all three factors of climate measured with the EssenCES within a high secure forensic setting. Nursing staff and management within the forensic setting could use the knowledge derived from this study in their challenging task of setting and maintaining a ward climate supportive of treatment success for the whole group as well as for the individual patient.

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## CHAPTER 4

Staff's perceptions of patients' affiliation and control in a high secure forensic psychiatric setting



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## Abstract

Effective interactions between patients and staff have been associated with positive ward climate and therapeutic effects, but also pose a challenge in high secure forensic psychiatric settings. The goal of this study was to gain more insight into i) the characteristics that play a role in how staff members perceive the interpersonal style of patients, and ii) whether these perceptions are related to patients' evaluation of ward climate and satisfaction with daily staff. Staff members (n = 69), rated the interpersonal style of 102 male patients. Satisfaction with daily staff and ward climate were rated by 45 patients. Results show that patient characteristics (primary diagnosis, patient age, disruptive behavior, recent problems with symptoms of major mental disorder and recent problems with treatment or supervision response) were related to how staff perceived the interpersonal style (i.e., affiliation and control) of patients. Furthermore, the level of affiliation was positively related to patients' satisfaction with daily staff. Patients that were seen as more controlling by staff were less satisfied with the safety on their ward (as a factor of ward climate). The results indicate that perception of patients' interpersonal style entails patient related information and can be relevant for staff to use in their work.

## Introduction

Staff members in high secure forensic psychiatric care work in a complex social context with patients with severe mental and behavioral problems, who have committed serious offences. An important aspect of the work of staff on a closed unit is to care for patients, support them and stimulate pro-social behavior through daily interaction. However, patient-staff interactions can be challenging and require skills that need to develop through education and experience (Rask et al., 2018). Personality disordered patients and aggression and violence have been identified as clinical problems that give forensic psychiatric nursing staff the most difficulties in their work (Mason et al., 2008). One challenging aspect of dealing with personality disordered patients involves managing deviant, pervasive, and inflexible interpersonal behavioral styles (American Psychiatric Association, 2013). The Interpersonal theory (Leary, 1957) postulates that individuals develop relatively consistent styles of self-presentation that are maintained by the particular reactions they elicit from others. An extreme style (as seen in personality disordered individuals) is maladaptive, as it is characterized by reliance on a narrow range of interactions (Blackburn, 1998; Kiesler, 1986; Leary, 1957). Blackburn (1998) examined the association between personality disorders and (observer ratings of) interpersonal style in male forensic psychiatric patients. In general, patients with narcissistic and antisocial personality disorders tended to exhibit a hostile-dominant interpersonal style, those with schizoid and avoidant personality disorders had a hostile-withdrawn interpersonal style, and individuals with dependent personality disorder had a submissive-nurturing style.

It has been suggested that therapists can make diagnostic and therapeutic use of the internal responses that personality disordered patients elicit in them, as these responses contain information about the (interpersonal style of) patients (Betan et al., 2005; Colli and Ferri, 2015; Colli et al., 2014; Rosenberg et al., 2007). Daffern et al. (2010) argue that interpersonal style should be taken into account, for instance, in risk management of potentially aggressive patients. They found that in a high secure psychiatric setting, patients who were perceived as being both hostile and dominant were more aggressive during treatment compared to patients with other interpersonal styles. Several inventories have been developed to gain insight in patients' interpersonal styles. One of these scales, the Impact Message Inventory-Circumplex (IMI-C; Kiesler and Schmidt, 2006) differs from other scales in that it combines features of self-report scales with observational- behavioral assessment scales. The IMI-C measures the interpersonal style of a target individual, by asking a respondent how he/she experienced interacting with this individual (how interacting with the target individual made the respondent feel, think, and behave). These reactions are used to score two dimensions: affiliation (friendliness- hostility)

and control (dominance-submission) of the target individual. These dimensions are found to be the most reliable- and most useful dimensions for capturing interpersonal interactions in clinical practice (Hafkenscheid and Rouckhout, 2009).

As most research on interpersonal style is aimed at patients with personality disorders, little is known about how staff members working on forensic psychiatric units perceive the interpersonal style of other patient groups. This is problematic because a big proportion of patients within secure forensic setting are diagnosed with schizophrenia, psychotic disorders or paedophilia (Neijmeijer et al., 2012). Moreover, in a study exploring how forensic nurses develop, maintain and express respect for patients, Rose et al. (2011) found that empathy, trust and fear are described by nurses as facilitating the enactment of respect. Empathy was described by most nurses as putting yourself in the shoes of the other, emotionally or cognitive and was found to be more likely demonstrated towards patients with an Axis I disorder (e.g., schizophrenia) compared to patients with an Axis II disorder (e.g., antisocial personality disorder).

Lingiardi et al. (2015) found that clinicians of different therapeutic approaches, gender, age, profession and level of experience, tend to show similar emotional responses (such as a feeling of being overwhelmed, disorganization, helplessness, and frustration) in treating patients characterized by high levels of symptom severity. These findings suggest that clinicians' characteristics do not affect counter-transference patterns in the treatment of patients with serious psychiatric disturbances.

However, there are also studies demonstrating that there are individual differences in staff members with regard to their emotional responses to patients. De Vogel and Louppen (2016) found that characteristics of staff (both gender and level of experience) play a role in the feelings staff members reported to have towards their most challenging patients. Moreover, studies testing the inter-rater reliability of scales measuring interpersonal style (IMI-C) suggested that characteristics of the rater played a role in the perception of interpersonal styles, as generalizability of perceived interpersonal style seemed to differ between raters (Hafkenscheid, 2003, 2005; Hafkenscheid and Rouckhout, 2009).

Interpersonal style and emotional responses of staff members towards their patients are important to study, as they may have an impact on therapeutic relationships and treatment (Sophia, 2000). Lingiardi et al. (2015) argued that emotional reactions within therapists, such as feeling overwhelmed, disorganized, helpless and frustrated, could lead to problems in managing the therapeutic relationship. According to the Safe Wards Model, the staff's relationships with patients is a key factor for enhancing ward climate, reduction of conflict and promotion of prosocial behavior (Bowers et al., 2015). In line, Ros et al. (2013) found that patients who felt less supported by staff members were involved in more

incidents of aggression than patients who felt supported by staff. It is important to note that the studies referred to above concern bi-directional relationships, as it remains difficult (practically and ethically) to test these kind of associations in a controlled and experimental manner. Nevertheless, it is important to further our knowledge concerning the underlying mechanisms playing a role in staff-patient interactions in a forensic setting.

The goal of this study was to gain more insight into i) the characteristics that play a role in how staff members perceive the interpersonal style of patients, and ii) whether these perceptions are related to patients' evaluations of ward climate and their satisfaction with daily staff. Based on prior studies, a variety of staff characteristics (age, gender, years of experience), and patient characteristics (age, length of stay, disruptive behavior within the facility, clinical risk) were examined in relation to interpersonal style in this study. Based on previous research, it was expected that patients diagnosed with antisocial personality disorder were characterized by staff members as having a more dominant and hostile interpersonal style compared to patients with paedophilia and patients with psychotic disorders. A positive association was expected between disruptive behavior within the facility and a controlling interpersonal style. Also, it was expected that how staff members perceive patients' affiliation was positively related to patients' satisfaction with daily staff and with patients' evaluation of therapeutic holding (as an aspect of ward climate).

## Methods

### Participants

Data were collected at the Pompestichting, a high secure forensic psychiatric institution for male patients in the Netherlands. Staff members working on the units in the day to day care of patients were asked to participate. In the Netherlands these staff members are referred to as 'sociotherapists' (sociotherapeuten). In general the educational background of sociotherapists is higher education (e.g. Social Work, Nursing). Of the 218 staff members working on the units, 203 were asked to participate (15 staff members could not be reached due to illness and/or leave). The response rate was 39%, data from 10 staff members could not be used due to missing values. One patient was left out of the analyses as she was the only female in the sample. Ultimately, staff (n = 69), generated 130 ratings concerning 102 unique patients. As each staff member is a case manager for 1–4 patient(s), they were asked to fill out the Impact Message Inventory-Circumplex short (IMI- CS; Sodano et al., 2014) for the patient(s) they manage. Diagnoses were provided by means of psychiatric forensic evaluation, using a semi- structured

**Table 1.** Demographic (and clinical) characteristics of staff and patients

Characteristic	Result
Raters (staff members) <i>N</i> =69	
Gender: female (%)	37 (54%)
Age, years: mean ( <i>SD</i> ; range)	41 (12; 22-66)
Length of employment as forensic nurse years: mean ( <i>SD</i> ; range)	9 (5; 0-29)
Targets (patients) <i>N</i> =102	
Gender: male (%)	102 (100%)
Age, years: mean ( <i>SD</i> ; range)	45 (11; 23-82)
Length of stay, months: mean ( <i>SD</i> ; range)	67 (51; 8-183)
Main diagnosis	
Schizophrenia/psychotic (%)	41 (40%)
Pedophilia (%)	16 (16%)
Antisocial personality disorder (%)	20 (20%)
Other	25 (25%)
Autism	8
Personality disorder NOS	11
Borderline	2
Drug elicit psychosis	2
Other	2
Main dimensions IMI-CS	
Control IMI-CS: mean ( <i>SD</i> ; range)	.05 (1.44; -3.16-3.95)
Affiliation IMI-CS: mean ( <i>SD</i> ; range)	.45 (2.00; -4.49-5.16)
EssenCES subscales	
Experienced safety: mean ( <i>SD</i> ; range)	11.14 (5.33; .00-20.00)
Therapeutic Hold: mean ( <i>SD</i> ; range)	9.31 (5.00; .00-19.00)
Patient Cohesion: mean ( <i>SD</i> ; range)	8.48 (.3.67; .00-14.00)
HCR-20 clinical subscales	
Insight: mean ( <i>SD</i> ; range)	1.42 (.54; .00-2.00)
Mental disorder: mean ( <i>SD</i> ; range)	.53 (.43; .00-1.33)
Violence: mean ( <i>SD</i> ; range)	.43 (.68; .00-2.00)
Instability: mean ( <i>SD</i> ; range)	.85 (.70; .00-2.00)
Response: mean ( <i>SD</i> ; range)	1.08 (.66; .00-2.00)

**Table 1.** Continued

Characteristic	Result
FQL Daily staff: mean ( <i>SD</i> ; range)	3.46 (.78; 1.53-4.73)
Disruptive behavior (during six months)	
Rule violation: mean ( <i>SD</i> ; range)	1.12 (2.13; 0-11)
Acting out: mean ( <i>SD</i> ; range)	1.32 (3.67; 0-27)
Sexual harassment: mean ( <i>SD</i> ; range)	.17 (.75; 0-6)
Hostage taking: mean ( <i>SD</i> ; range)	.01 (.10; 0-1)
Threatening: mean ( <i>SD</i> ; range)	.18 (.52; 0-3)

diagnostic interview. All patients were diagnosed by a psychiatrist as necessary condition for treatment within the Pompestichting, using the Diagnostic and Statistical Manual of Mental Disorders, version IV-TR (American Psychiatric Association, 2000). See Table 1 for descriptive statistics. A subgroup (*n* = 45) of the 102 patients scored by staff members on the IMI-CS filled out the Essen Climate Evaluation Schema (EssenCES; Scholast et al., 2008) and the subscale Daily Staff (DS), part of the Forensic in-patient Quality of Life questionnaire (FQL; Vorstenbosch et al., 2007).

## Measures

### Interpersonal style

The IMI-CS (Sodano et al., 2014) based on the Impact Message Inventory-Circumplex (IMI-C; Schmidt et al., 1999) is a 32-item self-report inventory that assesses the covert emotional experience or reactions of the respondent (i.e., a staff member) based on the interactions between the respondent with the person being evaluated (i.e., a patient). The IMI-CS aims to reflect the interpersonal style of the target individual by tapping into the reactions of the respondent. Examples of items of this instrument are: 'When I am with him... he makes me feel bossed around'; '... distant from him'; '... that I should tell him to stand up for himself'. Items are rated on a 4-point Likert scale ranging from 'not at all', to 'very much so'. In the current study, scores on the two axis of the interpersonal circle were used, reflecting level of control (dominance-submission) and affiliation (friendliness-hostility). The scores from the eight subscales of the IMI-CS: Dominant (D); Friendly- Dominant (FD); Friendly (F); Friendly-Submissive (FS); Submissive (S); Hostile-Submissive (HS); Hostile (H); Hostile-Dominant (HD), are used to calculate the two axis scores using a mathematical formula as described in the IMI guidelines (CONTROL = D - S + 0.707 (HD + FD) - 0.707 (HS + FS), AFFILIATION = F - H + 0.707

(FD + FS) - 0.707 (HD + HS)) (Kiesler and Schmidt, 2006). Overall satisfactory internal consistency was found within this sample (N = 130) with a mean alpha of 0.63. Since Cronbach's alpha values are sensitive to the length of a scale, it is common to find lower  $\alpha$  values (around 0.50) for short scales (Cortina, 1993). Seven out of eight scales had an alpha  $\geq$  0.50 (range 0.50 till 0.75). One subscale (S) had an  $\alpha$  value below 0.50, namely 0.37. If one of the four items of the S scale was deleted (item 6: when I am with him he makes me feel in charge) a value of that subscale would increase to 0.65.

#### Ward climate

The EssenCES (Schalast et al., 2008; Bulten and Fluttert, 2007) is a 17-item questionnaire. Ratings were obtained using a 5-point Likert scale ranging from 'I do not agree' up to 'totally agree'. Examples of items representing the different factors are 'The patients care for each other' (Patient Cohesion); 'Really threatening situations can occur here' (Experienced Safety); 'On this ward, patients can openly talk to staff about all their problems' (Therapeutic Hold). Within this sample the Cronbach's alpha values of the three subscales of the EssenCES were good, Patient Cohesion  $\alpha=0.73$ , Experienced Safety  $\alpha=0.83$ , Therapeutic Hold  $\alpha=0.83$ .

#### Disruptive behavior

As mandated by organizational policies, the occurrence of disruptive behavior among patients (including rule violation, acting out and threatening behavior) is registered by staff members using an internal registration system. In order to decide whether or not particular patient behavior is deemed as disruptive and to determine whether registration is needed, staff members rely on their personal experience and professionalism, and consult their colleagues within the team during handover. Subsequently, registrations made by staff members are checked and need to be approved by team leaders. Disruptive behaviors that took place within six months before the assessment with the IMI-CS were included (see Table 1 for descriptive statistics). For each patient the total amount of incidents of disruptive behavior within that period, was computed. The time period was chosen as incidents in general do not happen on a daily basis, but a time frame of six months is sufficient for incidents to occur. Also taking a longer period would have had consequences for the sample size as some patients were relocated after six months.

#### Daily staff

The subscale DS, part of the FQL (Vorstenbosch et al., 2007), was used to assess patients' perception of the quality of interaction with daily staff. The DS subscale consists of 16 items. Ratings were obtained using a 5-point Likert scale ranging from 'total disagreement' up to 'total agreement'. Examples of items representing

this concept are 'Are you appreciated by the ward staff?', 'Are you treated with respect by the daily staff?', 'Do you feel you can turn to the daily staff with your problems?'. Within this sample the Cronbach's alpha of the DS subscale was 0.90.

#### Clinical risk

The Historical Clinical Risk Management-20 V3 (HCR-20 V3; Douglas et al., 2013) is a risk assessment tool broadly used by clinicians to assess risk of future violence. In this study, the Clinical (C) scale of the HCR-20 V3 was used as an indicator of patients' current risk within the facility. The C-scale consists of 5 items: recent problems with insight (subitems: mental disorder; violence risk; need for treatment), recent problems with violent ideation or intent, recent problems with symptoms of major mental disorder (subitems: psychotic disorders, major mood disorders, other mental disorders), recent problems with instability (subitems: affective, behavioral, cognitive instability) and recent problems with treatment or supervision response (subitems: compliance, responsiveness).

#### Procedure

Data collection was part of the yearly evaluation of ward climate (among patients and staff) within the Pompestichting and took place in 2016. The study was approved by internal review board (Scientific Committee) of the Pompestichting and was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013). The researcher gave oral and written information concerning the data collection, the study aims and objectives. Participation was voluntary, staff members were asked to fill out an online questionnaire, including questions concerning age, work experience, gender, followed by the IMI-CS.

Patients received a printed questionnaire (EssenCES and the Daily Staff) with a return envelope. After filling out the questionnaires, patients returned them to the researcher by posting the envelope in a sealed box located on the ward. Patients signed an informed consent before taking part and were rewarded with €2.35 (payment equal to one working hour within the Pompestichting). Data on patient characteristics (age, disorder, length of stay within the institution, clinical risk) were extracted from the clinical records. Before analyzing, assessments were anonymized to ensure that participants could not be identified based on the data.

#### Statistical analyses

Statistical analyses were conducted using SPSS version 25 (IBM, SPSS Statistics), JASP (JASP Team, 2018) and Mplus v.7 (Muthén and Muthén, 1998-2011). Missing data on the IMI-CS (which was less than 2% of the dataset) were imputed using the Expectation Maximization method (Dempster et al., 1977), after concluding that data were missing completely at random (chi-square=1178.03 (df=1152; p = 0.29))



using the Missing Completely at Random test (Little and Rubin, 2002). Missing data were imputed per subscale.

Bayesian methods were used as it is a flexible method, relying on probability theory, capable of dealing with statistical challenges such as violation of the assumption of normality (Etz and Vandekerckhove, 2018). Firstly, Bayesian One-way ANOVA was used to test differences between diagnostic groups with regard to the main dimensions of the IMI-CS. As can be seen in Table 1, the sample included patients with a variety of (main) diagnoses. Patients residing within the Pompestichting often show comorbidity, but patients' primary diagnosis is commonly used to determine the main psychiatric condition. The primary diagnosis was also used within this study to form groups of patients, which allowed us to explore whether the groups differed on the main dimensions of the IMI-CS. All diagnoses were extracted from patients' clinical records. For patients without a clear primary diagnosis, a small team (including a psychiatrist, a psychologist and a researcher) judged each patient's clinical record. This procedure resulted in three groups, which clearly differed in the diagnosis, that could be used within the analysis and a group of patients that were left out of the group comparison because of the heterogeneity. Group 1 ( $n = 41$ ), included patients with diagnose of schizophrenia, psychotic- or schizoaffective- disorder, and 17 of these patients were also diagnosed with a personality disorder other than their primary diagnosis; group 2 ( $n = 20$ ), included patients with an antisocial personality disorder (exclusion criterion for this group was a diagnosis of schizophrenia, psychotic- or schizoaffective-disorder); group 3 ( $n = 16$ ), included patients with paedophilia, and 4 of these patients were also diagnosed with an antisocial personality disorder. Twenty-five patients were not included in the analysis as they had other primary diagnoses, such as a personality disorder NOS ( $n = 11$ ) or autism ( $n = 8$ ) (see Table 1). The strength of evidence supporting the presence of differences between groups (H1) was based on the estimate of the Bayes factor (BF; a natural ratio to compare the marginal likelihoods between a null and an alternative hypothesis, for commonly used thresholds to define significance of evidence, see Wetzels and Wagenmakers (2012)). A  $BF > 1$  indicates that the data supports H1 over H0, while  $BF < 1$  reflects more support for H0 relative to H1.

A Bayesian path analysis was conducted to assess the association between patient and staff characteristics, and staffs' perception of patients' interpersonal style. Characteristics of staff members (age, gender, years of experience) and patients characteristics (age, length of stay, disruptive behavior within the facility, and the 5 facets of the clinical factor of the HCR-V3), were entered as predictors, while the provide reliable results even in relatively small samples (e.g.,  $n = 50$ ) (Scheines et al., 1999). Three different fit indexes for Bayesian testing were used to determine model fit (chi-square tests to conduct posterior predictive checking

(95% credibility interval; CI); the posterior predictive P-value (PPP-value); and convergence according to the Gelman- Rubin criterion based on the potential scale reduction (PSR) factor for each parameter (Gelman and Rubin, 1992; Gelman et al., 2004, pp. 296–297). In contrast to non-Bayesian frameworks, the 95% CI for the chi-square posterior predictive check should include the value 0, convergence is reached with a PSR below 1.05 and the PPP-value should be close to the value 0.50 (Muthén and Muthén, 1998-2011). Significance of the individual predictors was determined based on the corresponding 95% CI (which should not contain 0; see also Brazil et al., 2017).

Bayesian correlations were used to study the association between how staff members perceive the interpersonal style of their patients, how patients perceive ward climate, and patients' satisfaction with daily staff. Significance was based on the 95% CI of each variable pair being correlated. For each pair of variables, the mode (i.e., most frequent value) of the posterior distribution was used as point estimates for the correlation. A correlation was considered significant if the 95% CI did not contain the value 0.

## Results

### One-way ANOVA

There was substantial evidence for H0 (H0: no differences between the diagnostic groups) with regard to the affiliation dimension of the IMI-CS ( $BF_{10}=0.12$ )<sup>2</sup>. See Table 2 for statistics. There was substantial evidence for H1 (differences between the diagnostic groups) with regard to the control dimension ( $BF_{10}=5.87$ ). Post Hoc comparisons indicated strong evidence for differences between group 1 and 2 on the control dimension ( $BF_{10}=20.07$ ). There was anecdotal<sup>3</sup> evidence that group 1 and 3 did not differ on the control dimension ( $BF_{10}=0.32$ ), and there was anecdotal evidence for differences between group 2 and 3 on the control dimension ( $BF_{10}=1.36$ ).<sup>4</sup>

2 ANOVA using traditional frequentist approach yielded similar results, indicating no group differences ( $F(2, 95)=0.23, p=0.79$ ).

3 Bayes factor between 1 and 3 and between 1/3 and 1 is interpreted as anecdotal evidence, also known as: 'worth no more than a bare mention' (Jeffreys, 1961; Wetzels and Wagenmakers, 2012).

4 An alternative analysis (ANOVA) using traditional frequentist approach yielded similar results, suggesting the presence of group differences on the control dimension ( $F(2, 95)=5.10, p=0.01$ ). Post Hoc comparisons using Tukey HSD test indicated that the mean score on the control dimension from group 1 patients ( $M=-0.22, SD=1.28$ ) was significantly different ( $p=0.01$ ) from group 2 patients ( $M=0.73, SD=1.16$ ). The mean score on the control dimension from group 1 patients ( $M=-0.22, SD=1.28$ ) was not significantly different ( $p=0.76$ ) from group 3 patients ( $M=0.00, SD=1.41$ ). The mean score on the control dimension of group 2 patients ( $M=0.73, SD=1.16$ ) was not significantly ( $p=0.13$ ) different from group 3 patients ( $M=0.00, SD=1.41$ ).

**Table 2.** Main dimensions of the IMI-CS control and affiliation per patient group

	Control			Affiliation		
	Mean	SD	N	Mean	SD	N
Group 1	-0.23	1.28	50	0.25	2.15	50
Group 2	0.73	1.16	28	0.58	1.87	28
Group 3	0.00	1.41	20	0.46	2.31	20

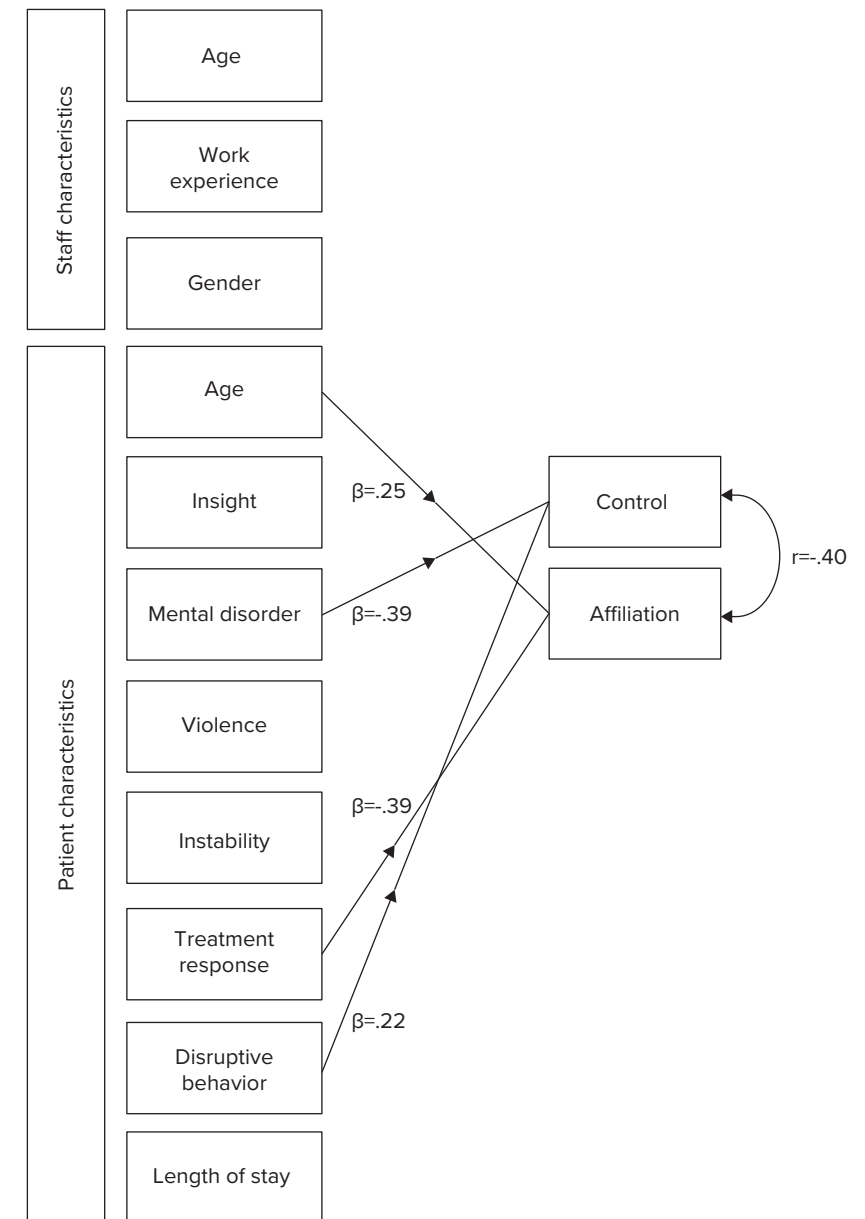
Note: Group 1: Schizophrenia/psychotic; Group 2: APD (Antisocial personality disorder); Group 3: Pedophilia.

### Path analysis

In the path analysis (see Fig. 1), the 95% CI of the chi-square check of the posterior predictive ranged from -21.18 to 23.31, PPP-value was 0.47 and the PSR was below 1.05. Thus, all model fit indexes indicated very good fit. The results showed that affiliation was positively predicted by patients' age ( $\beta=0.25$ ) and negatively by recent problems with treatment response ( $\beta=-0.39$ ) (see Table 3 for complete results). Control was positively predicted by disruptive behavior ( $\beta=0.22$ ), and negatively by recent problems with symptoms of psychiatric illness ( $\beta=-0.39$ ). Control was negatively related to affiliation  $r=-0.40$ .

### Correlation analyses

Scores on the control dimension were not correlated with patients' evaluation of therapeutic hold ( $r=-0.22$ , 95% CI -0.47 to 0.07). Affiliation and therapeutic hold were also not correlated ( $r = 0.04$ , 95% CI -0.25 to 0.32). Scores on the control dimension were related with another factor of ward climate namely experienced safety ( $r=-0.38$ , 95% CI -0.60 to -0.10). There was also an association between affiliation and satisfaction with daily staff ( $r = 0.35$ , 95% CI 0.05 to 0.59).



**Fig. 1.** Bayesian path analysis ( $n = 115$ ), patient and staff characteristics on affiliation and control, only significant associations are displayed.

**Table 3.** Standardized results of the Bayesian path analysis ( $n=115$ ).

Dependent variables	Predictor	Estimate ( $\beta$ )	95% C.I.	
			Lower 2.5%	Upper 2.5 %
Control	Age staff	-0.093	-0.329	0.148
	Experience staff	0.028	-0.190	0.246
	Gender staff	0.039	-0.130	0.205
	Age patient	0.016	-0.186	0.218
	Length of stay patient	0.166	-0.038	0.360
	Disruptive behaviour	0.223	0.016	0.416*
	Insight	0.090	-0.156	0.332
	Mental disorder	-0.390	-0.567	-0.187*
	Violent ideation or intent	0.021	-0.153	0.195
	Instability	0.097	-0.133	0.320
Affiliation	Age staff	0.131	-0.114	0.366
	Experience staff	-0.053	-0.271	0.169
	Gender staff	-0.104	-0.269	0.067
	Age patient	0.251	0.042	0.444*
	Length of stay patient	0.010	-0.195	0.212
	Disruptive behaviour	-0.041	-0.246	0.167
	Insight	0.132	-0.120	0.372
	Mental disorder	0.027	-0.177	0.228
	Violent ideation or intent	-0.092	-0.264	0.087
	Instability	0.071	-0.163	0.298
Control	Responsiveness	-0.385	-0.632	-0.106*
	Affiliation	-0.397	-0.549	-0.218*

Note. \* marks significant estimate.

**Table 4.** Bayesian Correlations

			Control	Affiliation	DS	ES	TH	PC
Control	Posterior	Mode	<b>-0.36</b>	0.12	<b>-0.38</b>	-0.22	-0.19	
		Mean	-0.35	0.11	-0.35	-0.20	-0.17	
		Variance	0.01	0.02	0.02	0.02	0.02	
	95% CI	Lower bound	<b>-0.50</b>	-0.19	<b>-0.60</b>	-0.47	-0.45	
		Upper bound	<b>-0.20</b>	0.40	<b>-0.10</b>	0.07	0.11	
	<i>N</i>		130	40	44	45	44	
Affiliation	Posterior	Mode		<b>0.35</b>	0.18	0.04	-0.07	
		Mean		0.33	0.16	0.04	-0.07	
		Variance		0.02	0.02	0.02	0.02	
	95% CI	Lower bound		<b>0.06</b>	-0.12	-0.25	-0.35	
		Upper bound		<b>0.59</b>	0.44	0.32	0.22	
	<i>N</i>			40	44	45	44	
DS	Posterior	Mode			0.01	<b>0.63</b>	0.19	
		Mean			0.01	0.60	0.18	
		Variance			0.02	0.01	0.02	
	95% CI	Lower bound			-0.29	<b>0.41</b>	-0.12	
		Upper bound			0.31	<b>0.79</b>	0.47	
	<i>N</i>				39	40	39	
ES	Posterior	Mode				<b>0.34</b>	<b>0.46</b>	
		Mean				0.32	0.43	
		Variance				0.02	0.02	
	95% CI	Lower bound				<b>0.06</b>	<b>0.19</b>	
		Upper bound				<b>0.57</b>	<b>0.66</b>	
	<i>N</i>					44	43	

Note. DS=FQL Daily Staff, ES=Experienced Safety, TH=Therapeutic Hold, PC=Patient Cohesion

## Discussion

The findings from this study indicate that patient characteristics play a role in how staff members perceive the interpersonal style of their patients. Primary diagnosis, patient age, engagement in disruptive behavior, problems with symptoms of major mental disorder and problems with treatment or supervision response were found to be associated with the perception of affiliation or control. No associations were found between characteristics of staff members and their perception of patients' affiliation or control.

The hypothesis that patients with an antisocial personality disorder are perceived by staff as being more dominant and less affiliative (more hostile) compared to other patient groups was only partly supported. Patients diagnosed with an antisocial personality disorder are perceived as being more dominant (high score on the control dimension) compared to patients with schizophrenia or a psychotic- or schizoaffective- disorder. With regard to the affiliation dimension, there were no indications for differences between patient groups. An important point to reflect on is the comorbidity that was present among patients within this sample. Although patients were carefully assigned to a group based on their primary diagnosis, it could be the case that other diagnoses they may have had also influenced their (interpersonal) behavior. For example, some group 3 patients had a primary diagnosis of pedophilia but some of them also had a personality disorder. In the current study, comorbidity was not accounted for in the analyses due to the limited sample size. However, possibly the presence of other diagnoses in addition to the primary diagnosis made the differences between groups smaller and the differences within groups larger. Also, patients with other diagnoses like autism or borderline personality disorder could not be included in the group comparisons because of the small number of patients per diagnosis. Future research should take comorbidity into account in order to get a better view on the relationship between diagnosis and interpersonal style. Flexibility in patient's interpersonal transactions is another factor that may offer an explanation for the limited amount of differences found between patient groups. Inflexible interpersonal style is one of the defining aspects of personality disorder (American Psychiatric Association, 2013). However, individual patients will differ regarding the intensity and flexibility of their interpersonal behavioral style. Kiesler and Schmidt (2006) highlighted that theoretically, effective interventions should be able to decrease the rigidity of patients' interpersonal transactions. Hence, it would be interesting to study the flexibility of interpersonal behavior of patients.

It has been argued that scores on the affiliation dimension might represent the quality of working alliance (Hafkenscheid, 2003). In research among substance abusers and sex-offenders, therapists' perceptions of patients' affiliation were

found to be related to patients' and therapists' perceptions of a positive therapeutic alliance (Auerbach et al., 2008; Watson et al., 2017). In our study an association was found between patient satisfaction with daily staff, and the affiliation dimension of the IMI-CS. Despite the relatively strong association between the Therapeutic Hold scale of the EssenCES and the Daily Staff scale of the FQL, no association was found between the Therapeutic Hold scale of the EssenCES and the affiliation dimension of the IMI-CS. Although the Therapeutic Hold scale of the EssenCES and the Daily Staff scale of the FQL are related, they do measure distinct concepts. The Daily Staff scale of the FQL, measures the individual satisfaction with daily staff while the EssenCES invites respondents to take the experience of other group members into account. It could be that differences in the perspective used within these instruments are related to the different outcomes (de Vries et al., 2018).

The results of the path analysis indicated that the way patients were perceived by staff members regarding control and affiliation, was best predicted by patient characteristics, such as patient age, recent problems with treatment response, disruptive behavior and recent problems with symptoms of psychiatric illness. The lack of predictive power of characteristics of staff members in the prediction of affiliation and control supports the notion that the IMI-CS reflects characteristics of the patient (the target) by tapping into the feelings and cognitions of the staff member (respondent) when interacting with this patient.

Affiliation was negatively predicted by recent problems with treatment response. Recent problems with treatment response, reflects problems regarding attendance and participation in treatment programs, conforming or adjusting to rules and profiting from treatment or risk management within the facility. Patients with problems in this area were seen as less friendly by staff. It could be that these patients avoided staff or that they may have had more negative interactions with them (possibly caused by staff members trying to get patients to attend treatment or to adjust their behavior). Patient age was a positive predictor of the affiliation dimension. It might be hypothesized that with increasing age patients become more calm and social. Patients might get more notion of, and respect for the work and effort that staff members put in their recovery. Research on the course of personality disorders throughout the lifespan is relatively scarce. There is limited knowledge on the impact of personality disorders in later life for instance regarding social functioning (for an overview see Oltmanns and Balsis, 2011).

The control dimension was positively predicted by patients' disruptive behavior within the facility. Disruptive behavior included threatening or aggressive behavior (verbal and physical), but mostly consisted of not complying/following staff's instructions or requests. In order to regain or retain safety and control, staff members might react to the dominant (deviant and aggressive) behavior of patients in an assertive or controlling way. It has been hypothesized that such reactions trigger



an increased wish for control in patients who have a persistent need for dominance, possibly resulting in aggressive acts by these patients (Daffern et al., 2008; Livesley, 2003). Patients' level of recent problems with symptoms of psychiatric illness, including symptoms of psychotic illness, mood disorder or illness affecting intellectual, executive or interpersonal functioning, was a negative predictor of the control dimension. Patients with higher levels of psychiatric symptoms are experienced by staff members as being less controlling.

In order to determine the possible role of characteristics of staff on their perception of patients' affiliation and control, age, level of experience and gender were included as predictors. The hypothesis that these characteristics would play a role in the perception of affiliation and control was not supported. However, additional research is needed including other characteristics of staff members than those included in this study, for instance personality or attitude of staff members. For instance, staff's conceptions may play a role in stigmatization of patients with a substance use disorder, or in determining attitudes towards paedophilic patients or in the way of coping with aggression problems, as there are studies indicating that attitudes of staff members are related to healthcare delivery (van Boekel et al., 2013; Verhaeghe et al., 2014). As interaction is a bi-directional process also the interpersonal style of staff members could be an important factor to take into account (Watson et al., 2017).

It is important to consider the potential limitation that only a portion of the staff working within a single high secure forensic institution participated in this study, and that this could have had an impact on the findings. In the future, bigger samples should be obtained from multiple facilities in order to investigate the stability and generalizability of our results. Secondly, patients were divided into groups based on their primary diagnosis, and comorbidity was not taken into account. It could be that the presence of additional disorders affected interpersonal functioning. It would be interesting to take, for instance, psychopathy into account as there are indications that patients with schizophrenia and high levels of comorbid psychopathy have a distinctive interpersonal (i.e., more coercive) style compared to patients with schizophrenia without comorbid psychopathy (Fullam and Dolan, 2006). Thirdly, the occurrence of disruptive behavior among patients included incidents registered by staff members. The information was limited to occurrence date, the patient that was involved, and the type of behavior/ incident, for instance not following staff instructions or verbal aggressive behavior. A next step would be to look further into the specific occurrences to examine the antecedents, the severity and consequences of disruptive behavior. This could be done by using an incident-based instrument such as the staff observation aggression scale - revised (SOAS-R: Nijman et al., 1999).

Fourthly, the Cronbachs alpha's of the S scale indicated that the items of this subscale did not seem to measure the same concept within this group. The item that did not seem to fit with the other items in the S scale is 'when I am with him he makes me feel in charge'. In the Dutch version of the IMI-CS the translation is not very tight. The Dutch item represents something like: when I am with him he makes me feel responsible for the course of events. It could be reasoned that feeling 'responsible for the course of events' when interacting with a patient does not necessarily imply that a patient is submissive. A patient that is dominant and high demanding towards a staff member could also make a staff member feel responsible. Another line of reasoning is that in a mandatory treatment setting like the Pompestichting, staff members need to be in charge by definition, even with dominant and highly demanding patients. Therefore, this item might be confusing to staff members, referring to the specific context of a forensic setting, rather than to the interpersonal behaviors of specific patients".

These results are different from the results reported by Sodano et al. (2013), who found acceptable alpha's for all subscales in a sample of 1512 ratings of non-forensic psychiatric patients. As their study was the first one validating the 32-item version of the IMI, they recommended that further validation efforts are needed in a sample where the short version was not embedded within the full length scale, as was the case in their work. Our study is the first to use this short version in a high secure forensic setting, more studies are needed that look into the psychometric properties of this instrument in this particular population. Finally, the results on the relationships between how staff members perceive the interpersonal style of their patients and how patients perceive ward climate and daily staff are based on data of a subgroup of 45 patients. Therefore, these results need to be interpreted with caution and studies replicating these results are needed in order to draw firm conclusions.

Despite these limitations, this study contributes to an important and somewhat neglected theme within high secure forensic settings, namely how patients are perceived by staff members and how this relates to patient and staff characteristics and important factors in inpatient care. Although this study was explorative it fosters our thinking on interpersonal behavior and the challenging aspects of patient-staff interactions. Gaining more insight in which factors and processes play a role in these interactions might help us in effectively using the patient-staff interactions in maintaining safety and promoting the rehabilitation of patients. This current study contributes to theory on responsivity, a key element of effective forensic care. Hence, one of the leading models underlying effective forensic care is the Risk-Need-Responsivity (RNR) Model (Andrews and Bonta, 2010). The model describes three principles important for offender rehabilitation. The risk principle focusses on who should be treated (the level of risk of reoffending and the intensity

of treatment need to be aligned). The need principle describes what should be treated (criminogenic needs i.e. dynamic risk factors). The responsivity principle addresses how an intervention should be delivered to patients. The importance of the therapeutic relationship and taking a patient' bio-demographic characteristics, learning style, personality and abilities into account are addressed by this third principle.

Awareness among staff members of what their patients evoke in them could be useful for relating to patients in the right way, choosing effective interactional strategies, seeing behavior and interactional processes in the light of patients problems, and de-escalation in tense situations. Although further research is needed, it seems worthwhile to explore the use of the IMI-CS within the forensic inpatient setting further. It might help to make somewhat implicit feelings more explicit for staff members, and assessable for team discussion, training and supervision. Gaining this knowledge, will likely help improve the quality of care and treatment further.

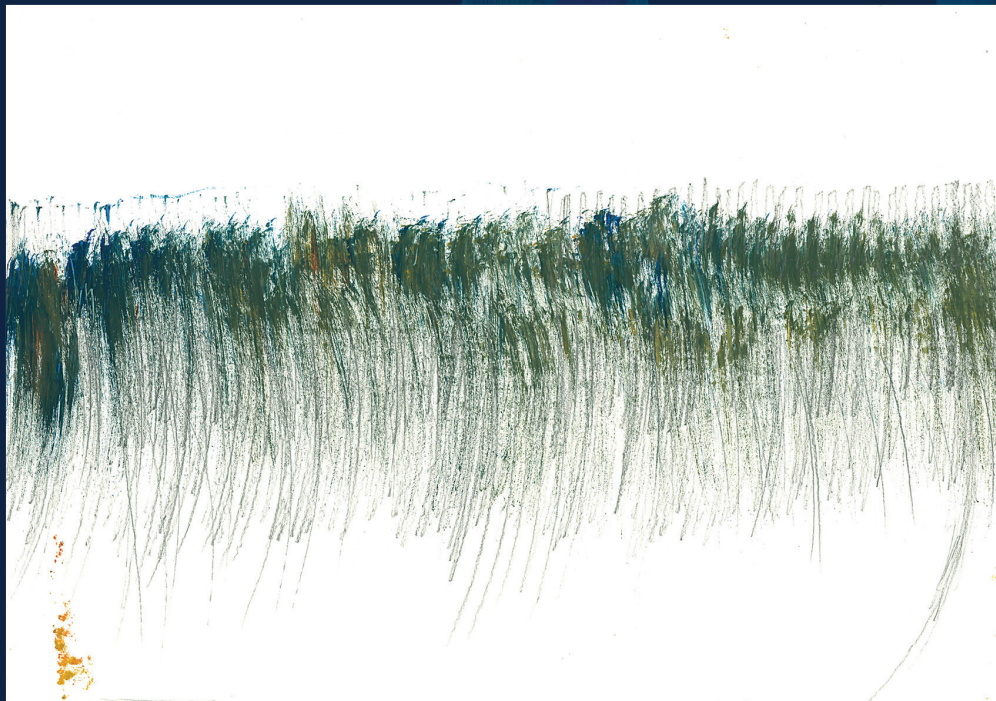
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## CHAPTER 5

Surface acting is related to emotional exhaustion among staff members working in high secure forensic psychiatric care



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## Abstract

The concept of 'emotional labour' has been suggested as a useful framework for studying the relationship between emotionally demanding work and well-being of health-care staff. The framework distinguishes 'surface acting' from 'deep acting' and suggests a predominant reliance on surface acting as a risk for emotional exhaustion. The relationship between emotional demands and emotional exhaustion among staff members working in high secure forensic psychiatric care (n = 131) was studied using the framework of emotional labour. Surface acting was found to partly mediate the relationship between emotional demands and emotional exhaustion. Experiencing the relationship with the manager as supportive contributed negatively to the prediction of emotional exhaustion. Workplace support did not moderate the relationship between emotional labour and emotional exhaustion. Although staff members working on wards in the direct care of forensic psychiatric patients tend to use both deep and surface acting during their work, our study results also show that deep acting and surface acting are differently related to emotional exhaustion. The framework of emotional labour indeed showed to be a useful paradigm within this population. Therefore, suggestions are made to pay attention to emotional labour strategies in future research and practice.

## Introduction

Within high secure forensic psychiatric hospitals, patients are treated who have committed a serious crime and who suffer from severe behavioral and mental problems. In this context, forensic staff members have a complex and emotionally demanding task, treating and rehabilitating potentially dangerous and mentally ill patients while maintaining a security perspective. One of the important aspects of the work of forensic staff members is building and maintaining a therapeutic relationship with patients, which is considered a prerequisite for safety, care and recovery (Gildberg et al., 2012; Hörberg, 2018; Marshall & Adams, 2018). However, interactions between staff and patients can be highly challenging and emotionally demanding in this complex context and require specific skills and attitudes that need to develop through training and experience (Brunt & Rask, 2018; Cramer et al., 2020; Tema et al., 2018).

In their review, on nursing staff experiences in high secure forensic mental health setting, Oates et al. (2020) identify several factors as being specific for the forensic context such as: the unique therapeutic relationship incorporating aspects of care and control, engaging with complex (often traumatized) patients, the risk of harm and exposure to violence. There are studies reporting relationships between these job factors and negative outcomes, such as emotional exhaustion of staff members in forensic psychiatric care. For instance, working with personality-disordered offenders has been found to be positively related to negative attitudes and feelings, and stress and burnout among (forensic) psychiatric staff (Bowers et al., 2011; Freestone et al., 2015). Also patient aggression as experienced by nursing staff (Edward et al., 2014; de Loof et al., 2018; Nijman et al., 2005), and emotionally demanding interpersonal relationships between professional caregivers and patients are seen as a risk factor for emotional exhaustion and depersonalization, the core dimensions of burnout (Schaufeli et al., 2017). Emotional exhaustion has been defined as an extreme form of fatigue as a consequence of prolonged and intense physical, affective, and cognitive strain caused by long-lasting exposure to specific working conditions (Demerouti et al., 2003). Emotional exhaustion is often studied as an outcome of job demands. Job demands are defined in the Job demands-resources (JD-R) model of burnout (Bakker et al., 2003; Demerouti et al., 2001) as physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological effort and are associated with physiological and/or psychological costs. Examples of job demands are a high work pressure or high emotional demands (Bakker et al., 2003).

As staff members working in high secure forensic psychiatric care are exposed to emotionally demanding interpersonal interactions, the management of emotions can be seen as an important part of the professional skills and role in forensic



psychiatric care (Cramer et al., 2020; Grandey et al., 2013). Hence, Cramer et al. (2020) advocate to take emotion regulation into account when looking for ways to increase well-being and prevent burnout among secure forensic mental health staff. Bakker and Heuven (2006) found that, as a result of emotionally charged interactions with service recipients, nurses and police officers experience a discrepancy between felt and displayed emotions, which subsequently may lead to emotional exhaustion and depersonalization.

Emotional labour was first described by Hochschild (1983) referring to professions that require regulation of feelings and expressions as part of their professional duties. The concept of 'emotional labour' has been suggested as a useful framework for studying the relationship between emotionally charged work and well-being across a range of professions, such as flight attendants, police officers, teachers and nurses (Bakker & Heuven, 2006; Delgado et al., 2017; Hochschild, 1983; Kinman et al., 2011). Emotional labour refers the process of regulating one's emotions to produce organizationally desired emotional displays (Diefendorff et al., 2008; Grandey, 2000; Hochschild, 1983). Especially in the context of emotionally charged interactions, professionals might use emotion regulation strategies like deep acting (which involves exerting effort to modify feelings in order to feel and express required emotions) and surface acting (which involves faking required emotions, modifying emotional displays without shaping inner feelings), in order to manage their experience and expression of emotions (Brotheridge & Grandey, 2002; Grandey et al., 2013; Hochschild, 1983).

Deep acting has been labeled as the healthier emotional regulation strategy, as it has been found to be unrelated to indicators of job strain among general nurses (Schmidt & Diestel, 2014) or positively related to job-related outcomes like interpersonal performance, and only weakly related with indicators of impaired well-being (Hülshager & Schewe, 2011). High levels of surface acting has been found to be related to negative outcomes like emotional exhaustion and stress in nurses working in hospitals and nursing homes for the elderly (Schmidt & Diestel, 2014). A possible underlying mechanism for the negative relationship between surface acting and emotional exhaustion is found in the experience of dissonance or tension felt when expressions and feelings diverge (Bakker & Heuven, 2006; Ashforth & Humphrey, 1993; Hochschild, 1983) and the cognitive control resources needed to cope with this tension (Schmidt & Diestel, 2014).

Although the work of forensic staff members encompasses several risk factors for emotional exhaustion, also 'protective' or 'energizing' factors may be present within the job context. Hence, Cramer et al. (2020) found relatively good mental health among staff working in secure psychiatric facilities. Their study indicated that burnout was relatively low compared to a sample of European general hospital nurses, also they found modest job and life satisfaction within their sample. Also,

Happel et al. (2003) found that forensic psychiatric nurses reported higher job satisfaction and lower burnout compared to psychiatric nurses from a mainstream mental health service. As support from colleagues and managers was rated relatively high by forensic staff members, Happel and colleagues suggest to extend research into the supportiveness of the forensic work environment as a potential factor that moderates the relationship between the challenges related to working in high secure forensic psychiatric care and negative outcomes, such as occupational distress and burnout (Dickenson & Wright, 2008; Happel et al., 2003). Similarly, Kinman et al. (2011) found some evidence that social support mitigates the negative impact of emotional demands on emotional exhaustion, feelings of personal accomplishment and job satisfaction, in their study on emotional labour, burnout and job satisfaction in teachers. Dickenson and Wright (2008) recommend, based on their extensive review of the literature, to invest in staff support including clinical supervision, support from fellow workers and a team culture that enables staff to openly express their feelings and that learns them to manage their feelings in order to maintain good mental health.

As well-being of professionals is key for organizational outcomes it is important to study potential mechanisms explaining how and under which circumstances emotional labour, is related to employee emotional well-being. This study aims to shed a light on the relationship between emotional demands and emotional exhaustion using the framework of emotional labour among staff members working in high secure forensic psychiatric care. Furthermore, the possible moderating role of workplace social support in the relationship between emotional labour and emotional exhaustion will be studied. Based on previous research it is hypothesized that emotional demands are evoking emotional labour strategies (both deep acting and surface acting). It is hypothesized that relatively high levels of surface acting will lead to emotional exhaustion, whereas a relationship between deep acting and emotional exhaustion will be absent or minimal. Furthermore, it is expected that the presence of social support as a job resource will moderate the relationship between emotional labour and emotional exhaustion.

## Methods

### Participants

Data were collected at the Pompestichting, a high secure forensic psychiatric institution for male patients in the Netherlands. The sample consisted of staff members working on the wards in the direct patient care. In the Netherlands, these staff members are referred to as 'sociotherapists' (sociotherapeuten). In general, the educational background of sociotherapists is higher education

(e.g. Social Work and Nursing). These staff members work in shifts (morning till day; and day till evening), during handover staff members of the two shifts pass on relevant information, for continuity of safety and care. Night shifts are done by staff members of a special team, these individuals are not included in this study. From the 151 staff members working on the wards, 131 (80 women) participated in our study (response rate of 86,8%). The average age of the respondents was 39 years old (range: 21–69, SD: 13). The average work experience in this function was 9 years (range 0–34, SD: 8).

### Measures

The primary outcome variable emotional exhaustion was measured using the emotional exhaustion scale of the Dutch version of the Maslach Burnout Inventory (UBOS-C; Schaufeli & van Dierendonk, 2000). The Emotional Exhaustion scale consists of eight items and refers to feelings of being over-extended and drained by psychological work demands. Examples of questions asked are: 'I feel mentally drained from my work', 'I feel tired when I get up in the morning and have to face another day on the job'. Items were scored on a 7-point Likert scale ranging from 0 to 6.

The level of emotional demands was measured using the corresponding subscale of the Perception and Evaluation of Work Questionnaire (QEEW, Dutch abbreviation: VBBA; Van Veldhoven & Meijman, 1994; Van Veldhoven et al., 2002, 2014). The Emotional Demands scale, comprises five items. Examples of questions asked are: 'Does your work demand a lot from you emotionally?', 'Do you get confronted in your work with things that personally affect you?', 'Do you have contact with difficult patients in your work?'

Emotional Labour was measured using the Dutch Questionnaire on Emotional Labour (D-QEL; Briët et al., 2005; Näring et al., 2007). The subscale Surface Acting consists of five items. An example item is: 'I pretend to have the emotions I need to display for my job'; 'I put on a "mask" in order to express the right emotions for my job'. The subscale Deep Acting consists of three items. An example item is: 'I make an effort to actually feel the emotions I need to display toward others'. Items are measured on a 5-point Likert scale ranging from 1 to 5.

Levels of social support were measured by use of two other subscales of the QEEW. The support from supervisor subscale, comprises five items. Examples of questions asked are: 'Can you ask your supervisor for help when you need to?', 'Can you count on your supervisor when you experience difficulties in your work?'. The third subscale of the QEEW that was used in this study is the Support from colleagues scale. Examples of questions asked are: 'Can you count on your colleagues when you experience difficulties in your work?', 'Can you ask your colleagues for help when you need to?' All items are measured on a 4-point scale,

ranging from 0 to 3. Scores were reversed in a way so that higher scores reflect more emotional demands, a more supportive relationship with colleagues and a more supportive relationship with the manager.

### Procedure

Data collection was part of a larger project within the Pompestichting monitoring multidisciplinary teams during the implementation of a model developed to aid professionals in enhancing relational security (See Think Act; Royal College of Psychiatrists, 2015; Dutch version Expertisecentrum Forensische Psychiatrie, 2018; 2021). Data collection took place in 2019–2020. The study was approved by internal review board (Scientific Committee) of the Pompestichting and was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013). After receiving oral and written information concerning the data collection, the study aims and objectives, participants signed an informed consent form. Participation was voluntary, staff members were asked to fill out a questionnaire, including questions concerning age, work experience, gender, followed by the other questionnaires. The questionnaires were returned to the investigator in a closed envelope. Before analyzing, assessments were anonymized by the researcher to ensure that participants could not be identified based on the data during data analyses. There were no risk associated with participating in this study. However, in case participants would experience emotional difficulties after filling out the questionnaire (for instance, after evaluating the demands of their work) they were able to contact one of the internal coaches of the Pompestichting. The Pompestichting has several coaches that give supervision, intervention, team- and individual coaching and that give psychological counselling after incidents.

### Statistical analyses

Pearson correlations were used to examine the relationships between emotional exhaustion and the independent variables and the mutual relationships between the independent variables. Next, regression analysis was used to analyze the optimal model for the prediction of emotional exhaustion. First, emotional demands, emotional labour strategies deep and surface acting and the supportive relationship with manager and colleagues were entered as predictors. The second model included the interaction between supportive relationship with manager and colleagues and emotional labour strategies to get insight in a possible moderating role of workplace support in the relationship between emotional labour and emotional exhaustion. Interaction terms were computed as the product of the centered scores. Analyses were done using IBM SPSS Statistics for Windows, Version 25. The mediating role of emotional labour in the relationship between emotional demands and emotional exhaustion was also tested using mediation

analysis in JASP (JASP Team, 2020). Within this analysis standardized scores were used. The confidence intervals are computed using the bootstrapping bias-corrected percentile method as suggested by Biesanz et al. (2010).

## Results

### Descriptive statistics

Mean scores and ranges for the study variables are shown in Table 1. The mean score on emotional exhaustion was 1.49 (range = 0–3.5,  $sd = .84$ ). We used cut-off scores for emotional exhaustion based on a reference group of 914 employees working in the justice or police department or in forensic psychiatric facilities (Schaufeli & van Dierendonk, 2000). Based on the reference group, 25 individuals of this current sample can be regarded as having very low to low levels of emotional exhaustion, 65 individuals as coping with medium levels of emotional exhaustion and a group of 41 individuals report high to very high levels of emotional exhaustion. Within this sample the mean score on emotional demands was 36.40 (range = 20–60,  $sd = 7.58$ ).

**Table 1.** Means, standard deviations, internal consistencies and correlations.

	Range	Mean	sd	1	2	3	4	5	6
1 emotional exhaustion	(0–3.5)	1.49	.84	.86					
2 emotional demands	(20–60)	36.40	7.58	.30**	.51				
3 support manager	(33–75)	59.48	10.59	-.21*	-.18*	.80			
4 support colleagues	(38–75)	61.38	8.65	.06	.07	.24**	.74		
5 deep acting	(1–4)	1.69	.64	.15	.17	-.08	-.09	.72	
6 surface acting	(1–3.8)	1.71	.54	.40**	.32**	-.01	-.06	.51**	.74

\*  $p < 0.05$ , \*\*  $p < 0.01$ ,  $n = 122$ – $131$ .

Emotional exhaustion is positively related to emotional demands ( $r = .30$ ) and to surface acting ( $r = .40$ ), and negatively to a supporting relationship with the manager ( $r = -.21$ ). The correlation between surface acting and emotional exhaustion is significantly higher ( $r = .58$ ) within the subgroup of individuals reporting high levels of emotional exhaustion compared to the groups with (very)low and medium levels of emotional exhaustion. A positive correlation ( $r = .51$ ) was found between the two emotional labour strategies (deep acting and surface acting). No significant relationships were found between deep acting and the other variables within this

study. Supportive relationship with the manager and supportive relationships with colleagues were positively related ( $r = .24$ ). Supportive relationships with colleagues did not show significant associations with the other study variables.

The internal consistencies of the (sub)scales used within this study are shown on the diagonal of the Table 1. Most scales show reasonable to good reliabilities (Cronbach's alpha from .72 till .86), except the subscale measuring emotional demands (Cronbach's alpha is .51).

### Mediation

Results of the mediation analysis can be found in Table 2 and are plotted in Figure 1. There appears a significant indirect effect of the relationship between emotional demands and emotional exhaustion through surface acting is 0.12 ( $SE = .04$ ),  $z = 2.68$ ,  $p < .05$ ,  $CI_{0.95} = .03$  and  $.22$ . Deep acting did not show a moderating role, the indirect effect of the relationship between emotional demands and emotional exhaustion through deep acting is  $-.01$  ( $SE = .02$ ),  $CI_{0.95} = -.06$  and  $0.02$ ,  $z = -0.61$ ,  $p > .05$ . See, Figure 1 for a visual representation of the path model tested within this study.

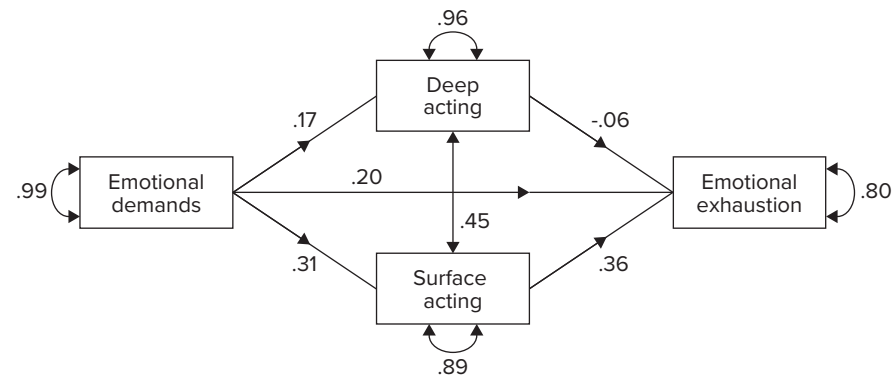
**Table 2.** Mediation results for indirect effects.

Path	Indirect effect	SE	95% Confidence interval			
			z-value	p	Lower	Upper
ED->DA->EE	-.01	.02	-.61	.54	-.06	.02
ED->SA->EE	.12	.04	2.68	.007	.03	.22

Delta method standard errors, bias-corrected percentile bootstrap confidence interval, ML estimator. ED = Emotional demands; DA = Deep acting; EE = Emotional exhaustion; SA = Surface acting.

### Regression

Results of the hierarchical regression are shown in Table 3. In the first model emotional exhaustion is robustly predicted by emotional demands (Beta = .32,  $p < .001$ ). The overall model fit was  $R^2 = .10$ . In the second step of the regression (model 2) surface acting is found to be the most powerful predictor (Beta = .36,  $p < .001$ ) and the relative contribution of emotional demands in the prediction of emotional exhaustion declines (Beta = .19,  $p < .05$ ). Furthermore, the relationship with manager contributes a little to the prediction of emotional exhaustion (Beta =  $-.18$ ,  $p < .05$ ). Deep acting and supportive relationship with colleagues did not significantly contribute to the model. The overall model fit was  $R^2 = .22$ . The results of the third step (model 3) indicate that there was no moderating role of supportive relationships, as all interaction terms were non-significant.



**Figure 1.** Path plot: mediation of emotional labour strategies in the relationship between emotional demands and emotional exhaustion.

**Table 3.** Hierarchical regression analysis of predictors of emotional exhaustion.

Predictor variables	Model 1 Beta	Model 2 Beta
Emotional demands	.32***	.19*
Surface acting		.36***
Deep acting		-.05
Relationship colleagues		.10
Relationship manager		-.18*
R <sup>2</sup>	.10	.22

\*  $p < 0.05$ , \*\*\*  $p < 0.001$ .

## Discussion

This study showed that the framework of emotional labour is a useful paradigm to understand the relationship between emotional demands and emotional exhaustion. Among staff members working in high secure forensic psychiatric care, we found that surface acting mediated the relationship between emotional demands and emotional exhaustion. No support was found for a moderating role of workplace social support in the relationship between emotional labour and emotional exhaustion. However, experiencing the relationship with the manager as supportive did contribute negatively to the prediction of emotional exhaustion. In general, results of this study underline that the management of emotions can be

seen as an important part of the professional skills and role in forensic psychiatric care (Cramer et al., 2020; Grandey et al., 2013). Within this current study, staff members report using both deep acting and surface acting strategies in their work. This result is in line with the results found by Mann and Cowburn (2005) showing that mental health nurses use both deep and surface acting strategies to deal with challenging staff–patient interactions. However, the hypothesis that emotional demands would be positively related to both deep and surface acting was only partly supported. Although both emotional labour strategies are used by professionals within this current sample, only surface acting was found to be positively related with emotional demands.

As hypothesized, emotional exhaustion was positively related to surface acting, and not to deep acting. Regression analyses indicated that surface acting had the most predictive power for emotional exhaustion compared to the other study variables. When adding emotional labour as a predictor of emotional exhaustion besides emotional demands, the relative contribution of emotional demands in the prediction of emotional exhaustion declined and surface acting was found to be the most powerful predictor. Deep acting did not significantly contribute to the prediction of emotional exhaustion within this sample.

Our findings are in line with previous studies that label deep acting as the ‘healthier’ emotional regulation strategy than surface acting (Hülshager & Schewe, 2011; Schmidt & Diestel, 2014). The causality between emotional exhaustion and surface acting may be reciprocal. On the one hand, surface acting may be effortful and lead to exhaustion, on the other hand it has been argued that emotionally exhausted professionals tend to rely more on surface acting as a way to cope with emotional demands. Hence, Schmidt and Diestel (2014) found that, for nurses working in hospitals and nursing homes for the elderly, surface acting was more strongly related to burnout, depressive symptoms and absenteeism, especially when nurses cognitive control resources were small. It is imaginable that professionals might get stuck in a vicious circle of high emotional demands, leading to more surface acting which leads (due to the experienced emotional dissonance) to higher levels of emotional exhaustion, which increases the need for surface acting and so on. Mann and Cowburn (2005) argue that professionals could also experience stress from other sources, than for instance their interactions with patients, so-called daily stress and that masking that stress in interaction with others could itself be a source of further stress.

Social (supervisor and co-worker) support is regarded as a job resource, playing an important role in professional well-being and performance (Bakker & Demerouti, 2007). It has been suggested that the supportiveness of the forensic work environment might play a role in protecting professionals from burnout factors, such as emotional exhaustion (Happel et al., 2003). Within this current study,

no indications were found that supportive relationships with colleagues or supervisor moderated the relationship between emotional labour and emotional exhaustion. Kinman et al. (2011) did find some evidence that social support mitigates the negative impact of emotional demands on emotional exhaustion. However, it should be noted that within their study Kinman and colleagues focused on a sample of teachers. Also, they used a social support scale measuring support from different sources at work, whereas within this current study supportive relationship with the manager and colleagues were measured specifically and separately. As few studies have examined the role of social support in the emotional labour process, Kinman and colleagues suggested looking into the relative impact of different types of social support from different sources. This current study showed that experiencing the relationship with the manager as supportive seems to prevent emotional exhaustion.

### Implications for practice

Although staff members working on wards in the direct care of forensic psychiatric patients tend to use both deep and surface acting during their work, our study results also show that deep acting and surface acting are differently related to emotional exhaustion. Therefore, it might be useful to offer workplace support regarding emotional labour. For instance, by focusing on increasing self-reflexivity, by helping staff members to be aware of the personal emotions they experience during their work and encourage them to evaluate how they manage these emotions during challenging interactions. Organizations should provide training to their staff, facilitating and learning them to explore their emotion work and strategies used, and the possible benefits and risk that are associated with these strategies (Edward et al., 2017; Mann & Cowburn, 2005).

Besides relying on the internal resources in staff members like emotion regulation strategies and their efforts to apply this, it is highly important to invest in organizational support and resources (Delgado et al., 2017; Edward et al., 2017). Clinical supervision, intervision and investing in an open organization and team culture are important in order to maintain good mental health for forensic professionals (Dickenson & Wright, 2008; Feerick et al., 2021; Edward et al., 2017; Lowdell & Adshead, 2009). Staff members might benefit from support in how to respond to the emotional demands and dealing with their emotions in a healthy manner (Delgado et al., 2017; Dickenson & Wright, 2008; Mann & Cowburn, 2005). Besides the benefits related to the mental health of professionals, self-reflection and emotion regulation could also contribute to effective patient care and risk management, as regulation of their own emotions enables staff members to more effectively respond to patients' needs (Hammarström et al., 2019).

Besides making staff members aware of their emotions and emotion regulation strategies, it could also be helpful to get a clear picture of so-called 'display rules' of an organization or the wards staff members are working on. Display rules can be seen as shared norms within a team or an organization governing the expression of emotions at work. It could be imaginable that in some situations, for instance, in case a patient behaves verbally aggressive on the ward, staff members could express their fear or anger, in order to show the patient what the effect is of his current behavior on others. A display rule, however, could also be, to never show your own fear or anger to patients (Jacob & Holmes, 2011). In that case, emotion regulation strategies like deep or surface acting are needed to align these feelings with work demands. We suggest that teams take time to explore and discuss their so-called display rules and the possible effect on them and on their patient care.

### Future research

Next to the importance of reflection on topics like emotional labour and display rules in clinical practice, we also think that it is important to put effort in further research endeavours regarding these themes. Future research could try to study display rules that are present in teams and their relationship with emotional labour and emotional exhaustion. In this line of research it would be interesting to study the concept of emotional labour on both an individual level and a team level. Looking at emotional labour from a team perspective, opens the door for including concepts as emotional contagion. Hence, there are indications that human service professionals 'catch' the feelings of emotional exhaustion, cynical attitude or diminished sense of personal accomplishment, from their team members (Bakker et al., 2003a, 2005; Westman & Bakker, 2008). Bakker and Heuven (2006), state that allowing employees to express their true emotions may seem undesirable for patients, but that in the long run this approach may be positive for both patients and professionals. Another interesting suggestion made by Bakker and Heuven is that reflection and performance feedback might reduce the impact of emotional dissonance on emotional well-being of professionals. We regard both suggestions as interesting themes to explore in clinical practice and future research. It is imaginable that when professionals understand that finding an effective way of expressing their felt emotions, is part of their professional expertise that is needed in certain situations in order to reach certain work-related goals, would reduce the negative effect of surface acting on emotional exhaustion. Hence, there are studies suggesting that fulfilling emotional demands by using emotional labour strategies might generate feelings of competence and work satisfaction (Brotheridge & Grandey, 2002; Kinman et al., 2011). Related to this, Ashforth and Humphrey (1993) refer to the social identity theory to outline that it might be that individuals who strongly identify with their professional role, are more at ease in conforming



to organizational display rules and thus experience less emotional dissonance. Taken together we suggest that future research could explore the role of concepts as role clarity and performance feedback in relationship with emotional labour and emotional exhaustion among forensic staff members.

### Study limitations

Even though this study contributes to the knowledge of the relation between emotional well-being and emotional labour, some limitations must be noted. Firstly, due to the cross-sectional design, causality cannot be determined. As mentioned above, the relationships between the variables within this study could very well be reciprocal. To study the dynamics of this relationship longitudinal research is needed. A second limitation is that only one potential 'protective factor' was studied in the relationship between emotional labour and emotional exhaustion. There are other factors like emotional intelligence or self-efficacy that might play a protective role in emotionally burdening work of nurses (Delgado et al., 2017; Loeb et al., 2016). It would be interesting to see whether these relationships are also present in staff members working in the direct care on forensic psychiatric wards. A third limitation of this study is that it only included staff members working in one high secure forensic hospital in the Netherlands. To investigate the generalizability of our finding, samples should be obtained from multiple facilities. Firstly, it would be interesting to see whether results are replicated in other samples, comparable to the one used in this current study (staff working in high secure forensic psychiatric male patient units), subsequently it would be interesting to broaden the study to for instance, low- or medium secure care units. Finally, it should be noted that in our sample Cronbach's alpha of the emotional demands scale was rather low indicating that the participating staff members responded to the items inconsistently. Further research is needed to see whether this scale is suited as an indication of emotional demands for staff members working on high secure forensic psychiatric wards.

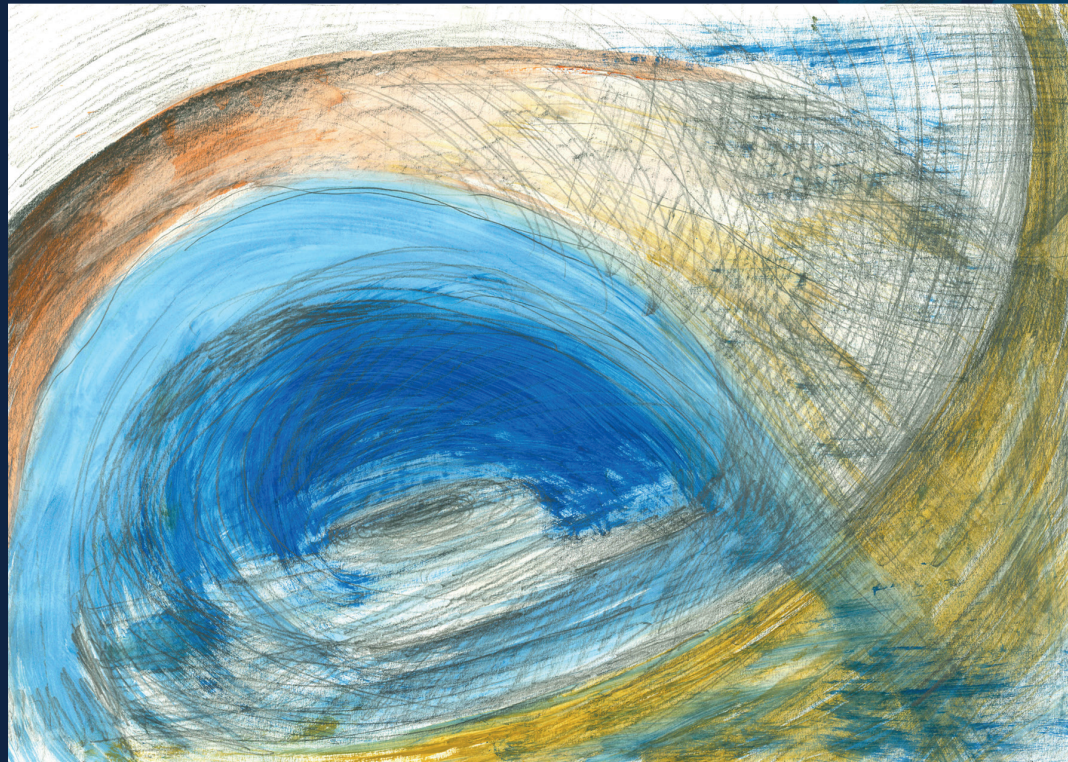
### Study contributions

Despite these limitations, this study contributes to the knowledge on emotional labour and provides data on an underrepresented population. The study showed that the framework of emotional labour is an useful paradigm to understand the relationship between emotional demands and emotional exhaustion within high secure forensic psychiatric care. Although more research is needed to further elucidate the mediation by surface acting on the relationship between emotional demands and emotional exhaustion, our findings allow the conclusion that attention should be paid to emotional labour strategies in practice to encourage emotional well-being.

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## CHAPTER 6

See, Think, Act scale: validation of the Dutch version of a measure of relational security in high secure forensic psychiatric care



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## Summary

Relational security is considered an essential form of security in forensic psychiatric care. Research on relational security is important, but is hampered by the lack of instruments to assess and monitor this concept in clinical practice. Within this current study the psychometric properties of the Dutch version of the See Think Act (STA) scale, an instrument designed to measure relational security as perceived by forensic staff members within secure settings, was studied. Results show that the internal consistency of the STA total scale was good. However, the internal consistency of the subscales was relatively low compared to other studies using the original English or the Chinese version of the STA scale. The factor structure found in the original English version of the scale was not confirmed within this sample. With regard to the validity of the instrument results were promising, finding relationships with aspects of ward climate and team reflexivity. Further research and development is needed regarding the STA scale, making it more suitable for monitoring and studying this clinically relevant concept in forensic care.

## Introduction

Within (high) secure forensic psychiatric care, three domains of security are used in order to maintain safety throughout the recovery process of patients, namely physical security, procedural security and relational security (Crichton, 2009; Kennedy, 2022; De Pau et al., 2021). Physical security refers to elements in the environment such as perimeter fences and electronic alarm systems. Procedural security refers to policies and practices such as unit and room searches or drug controls. While these first two forms of security are rather clearly described or even tangible, the third form seems to be harder to define. Relational security has been divided into two aspects, a quantitative and qualitative one (Kingsley, 1998). Quantitative relational security includes variables such as the staff-to-patient ratio, and the amount of time spent in face-to-face contact. Qualitative relational security in general, relates to maintaining a therapeutic relationship with trust, while managing boundaries so that risk is recognized and managed, implying a need for in depth knowledge about patients (Kennedy, 2022). There is no consensus on a definition of relational security yet. Hence, there are several definitions showing both variance and overlapping issues. Tighe and Gudjonsson (2012) focused in their definition of relational security on the quality of the therapeutic relationship clinicians have with their patients and the way this relationship is used to maintain safety through the recovery process. The Department of Health (2010) in the United Kingdom referred to relational security as the knowledge and understanding staff have of a patient and of the environment, and the translation of that information into appropriate responses and care. Hence, using knowledge of patients risks and needs, enables tailored security measures as levels of restriction and supervision can be varied according to the needs of the patient while maintaining the safety of others (Arsuffi, 2017, Collins and Davies, 2005). In an integrative review of the literature on relational security, Fletcher (2018) identified therapeutic relationship, ward climate and team dynamics as the three main themes playing a role in relational security. Based on her findings Fletcher (pg. 73) extends former definitions of relational security: Relational security is *“the detailed clinical knowledge of a patient and the translation of this knowledge into safe management of their care. It is also the organization of the wider ward, including the management of increased acuity and the therapeutic program. Finally, it is the understanding of staff dynamics and the impact this has on effective communication within the team and the translation of clinical knowledge to the delivery of patient care.”*

The Department of Health (2010) in the United Kingdom published “See Think Act (STA),” a handbook including a model that could help professionals working in forensic care in evaluating and maintaining relational security. The STA model is based on an analysis of a series of ward incidents in low to medium-secure

forensic services in the United Kingdom. It was found that most incidents were related to a breakdown in the interpersonal and risk-management aspects of care, that one could categorize as relational security aspects (Tighe and Gudjonsson, 2012). The purpose of the STA model is to help staff understand what relational security means, it offers structured guidance for clinical teams that encourages relational security by the maintenance of security and vigilance while promoting patient recovery (Drennan and Alred, 2012). The STA model has four components; (1) a team's ability to maintain boundaries and deliver therapy, (2) patient mix and inter-patient dynamics, (3) the internal world of the patient and the unit, and (4) connections to the outside world and the impact of visitors. In the STA handbook each component of the model, and its relevance for relational security in clinical practice, is described. At the end of each section of the handbook, statements are presented to prompt reflection among staff members on their practice.

The STA method consists, apart from the handbook of additional tools like a workbook with exercises, a format to map a patient-mix and explorers to help evaluate relational security issues. The handbook and the tools can be considered as a starting point in helping professionals to explore and fulfill their role in relational security. In order to integrate the STA method in daily practice, professionals need training, encouragement, support and robust strategic leadership with an emphasis on reflective practice (Markham, 2022). Organizations need to educate and train their staff, have a structure in place that support ongoing skill development in delivering relational security care, and have clear and effective systems for communication and handover within and between staff teams (Royal College of Psychiatrists, 2015). It has been argued that in secure and forensic mental health settings the humanistic values that underpin nursing can be in conflict with actual practice. The dual role that staff members have in therapy and control, combined with the need for personal safety for professionals, might result in adapting more custodial and restrictive than care related attitudes and practice (Jacob et al., 2008; Hammarström et al., 2019). For instance, distancing yourself as professional from patients has been mentioned as a way to cope with relational difficulties (Vincze et al., 2015). However, in order to enable recovery, relationships and environments that provide hope, empowerment, choices, and opportunities for fulfilling an individual's potential are required (Office of Mental Health and Substance Abuse Services, 2005). Relational security could support forensic mental health professionals in finding balance in managing safety and risks and patients' recovery and care (Markham, 2022). However, there is a need for studies into the actual impact of relational security on for instance, risk incidents on the ward, treatment outcomes and patient satisfaction as there are no results yet that underwrite the potential beneficial effects of relational security (Arsuffi, 2017). Within the United Kingdom all forensic facilities are encouraged to work on their

relational security using the STA guidelines. In cooperation with the author of the original STA guideline, a Dutch translation was published (EFP, 2018;2021) making the material accessible for professionals working in forensic psychiatric care in Netherlands. In the Dutch translation of the STA handbook the definition of relational security was enriched, with approval of the original author, by adding the importance of self-knowledge of staff. Resulting in the following definition: *“. . . the knowledge and understanding staff have of a patient, themselves and of the environment, and the translation of that information into appropriate responses and care.”* This adjustment was made after experiencing in clinical practice that reflection on oneself as a professional, is important in working with patients as well as in working in a team. The addition to the definition has also had implications for the use of the STA model, by putting more emphasis on reflective practice, which is in line with recent thinking by both Fletcher (2018) and Markham (2022). Considering good communication and information sharing, as the corner stone of relational security and recovery-focused care. In forensic facilities, working multi-disciplinary as a team and using expert skills are considered essential for effective risk management and appropriate patient care (Davies, 2004; Mason et al., 2008). Markham (2022) argues that reflective practice in forensic care is important for staff members and teams to gain insight, learn from daily practice and optimize relational security. The STA guidelines recommend to engage in reflective practice within the multidisciplinary team in order to evaluate and improve relational security and patient care. In general, reflective practice encompasses a process in which teams regularly engage in situated action, reflect on the experience, extract learning's and plan how to integrate those learning's into further actions (Kolb, 1984; Lines et al., 2020; West, 2000). Team sessions such as debriefs in which teams discuss, interpreted and learn from recent events are widely used in (mental) healthcare settings and are found to be related team effectiveness when well conducted (Allen et al., 2018; Salas et al., 2008). In the literature the term team reflexivity is used, referring to the extent to which team members collectively reflect upon the their team's objectives, strategies and processes (Konradt et al., 2015; West, 1996).

Although relational security is considered an essential form of security in forensic psychiatric care, it has received limited research attention in clinical practice. There is a lack of data on the implementation of relational security in inpatient settings (Fletcher, 2018; Markham, 2022). The lack of studies concerning relational security could be related to the challenges in defining the concept of relational security and isolating the essential elements. In an attempt to fill this gap, Tighe and Gudjonsson (2012) developed a measure of qualitative relational security (See Think Act scale, STA scale) as perceived by forensic staff members, based on the content presented in the STA DoH practice guidelines (2010). The original



English version of the STA scale has been found to have high levels of internal consistency and moderate to good convergent validity with instruments partly addressing aspects of relational security (Tighe and Gudjonsson, 2012; Arsuffi, 2017; Chester et al., 2017). Tighe and Gudjonsson (2012) used the three subscales (therapeutic hold, experienced safety and patient cohesion) of the EssenCES (Bulten and Fluttert, 2007; Schalast et al., 2008), a measure of ward climate, to establish construct validity of the STA scale. They reported moderate to strong positive correlations between relational security and two subscales of the EssenCES measuring patient cohesion and therapeutic hold, within a sample of 159 nursing staff members working in a forensic low and medium-security service. Arsuffi (2017) used the EssenCES total scale and found a moderate positive relationship between relational security and the EssenCES total score within a sample of 58 staff members working on low secure, medium secure and open rehabilitation sites in England. Altogether, there are indications that the STA scale has operationalized the concept of relational security in a way that it can be measured with fair reliability and promising validity, however, more research is needed. The aim of this present study was to examine the psychometric qualities of the recently developed Dutch version of the STA scale. To investigate construct validity the relationship between the scores on the STA scale with scores on established instruments to measure ward climate and team reflexivity was assessed. Although relationships between these concepts need to be studied in clinical practice, we can make some assumptions based on earlier work regarding these concepts. Hence, as relational security is based on *“the knowledge and understanding staff have of a patient, themselves and of the environment, and the translation of that information into appropriate responses and care”* it could be argued that reflective practice is an important factor for optimizing relational security. Hence, discussing processes and evaluating practice within a team, contributes to knowledge and insight which can be translated into appropriate responses and care. Within this current study it is hypothesized that higher scores on evaluation and learning and discussing processes [two subscales of the Team Reflexivity Scale; (Schippers et al., 2008)] would relate to higher scores on the STA scale.

Good practice on relational security should translate into aspects of ward climate like therapeutic hold. Hence, earlier work has found that ward climate and relational security have been found to be concepts that are moderately related to each other (Arsuffi, 2017; Tighe and Gudjonsson, 2012). Both concepts are found to be important factors in high secure forensic care, and in both concepts the therapeutic relationship between staff and patients plays an essential role. However, looking at the definitions used for relational security, this concept concerns skills of staff members in performing their job, translating their knowledge and

observations into appropriate responses to maintain and enable both safety and recovery. While ward climate can be considered as a dynamic and multifactorial construct, which describes the social and emotional experience of a unit by its staff or residents (Moos, 1989; Schalast et al., 2008; Schalast and Tonkin, 2016). Based on the results of the earlier studies mentioned above it was hypothesized that staff’s perceptions of relational security would be positively related to two elements of ward climate, namely therapeutic hold and patient cohesion as measured with the EssenCES; (Bulten and Fluttert, 2007; Schalast et al., 2008).

## Materials and methods

### Participants

Data were collected at several wards of the Pompestichting, consisting of a high secure forensic psychiatric institution for male patients and a high security long term forensic psychiatric care (LFPC) facility in Netherlands. The total sample consisted of 99 (61 women) staff members working on the wards in the day to day care. In Netherlands these staff members are often referred to as “sociotherapists.” In general the educational background of sociotherapists is higher education (e.g., Social Work, Nursing). The average age of the respondents was 37 years old (range: 21–65, SD: 12.1). The average work experience in their specific function was 8 years (range 0.25–40, SD: 8.1).

### Measures

#### Relational security

Relational security was measured using the See Think Act (STA) scale (Tighe and Gudjonsson, 2012). The STA scale is a 28-item self-report scale, designed to measure relational security as perceived by forensic staff members within secure settings. The STA scale consists of four subscales: therapeutic risk management; pro-social team culture; boundaries; and patient focus. Responses are made on a 4-point scale, ranging from “just like our team” to “not like our team.” Examples of items representing the different factors are: “We are vigilant about how visits affect the patient before their visit” (therapeutic risk management) “We deal with bullying robustly” (pro-social team culture), “we understand why maintaining a clear boundary with patients is important” (boundaries), “Care plans are up to date to reflect how our patients are feeling today” (patient focus). Permission was granted by Tighe, the original author of the STA scale to translate the English version into Dutch. First, the questionnaire was translated from English to Dutch by an academic-scientific translation agency for academia and research, and then back translated by another professional of the agency. The original English version

and the translated version where compared and differences discussed by the authors of this current study, an independent researcher and one of the translators, modifications were made, resulting in the Dutch translation of the STA scale used within this study. The Dutch version of the STA-scale, used within this study, can be found in the supplement.

### Ward climate

Ward climate was measured using the EssenCES (Bulten and Fluttert, 2007; Schalast et al., 2008). The EssenCES is a 17-item questionnaire. Ratings were obtained using a 5-point Likert scale ranging from “I do not agree” up to “totally agree.” Examples of items representing the different factors are “The patients care for each other” (patient cohesion); “Really threatening situations can occur here” (experienced safety); on this ward, patients can openly talk to staff about all their problems’ (therapeutic hold).

### Team reflexivity

Team reflexivity was measured using the Team Reflexivity Scale (Schippers et al., 2008). The scale consists of two subscales: “evaluation and learning” and “discussing processes.” The evaluation and learning scale focuses on the evaluation of finished business and learning from previous actions and adaptations. Discussing processes focuses on thinking about the way things are usually done in the team, reflecting on communication patterns on norms and values within the team. Ratings were obtained using a 5-point Likert scale ranging from “totally disagree” up to “totally agree.” Examples of items representing the two factors are “We work out what we can learn from past experiences” (evaluation and learning); “The methods used by the team to get the job done are often discussed” (discussing processes).

### Procedure

Data collection was part of a larger project within the Pompestichting monitoring multidisciplinary teams during the implementation of a model developed to aid professionals in enhancing relational security [See Think Act; (Royal College of Psychiatrists, 2015; EFP, 2018;2021)]. During this implementation project multidisciplinary teams, received a 1 day training in relational security each year. During that training the origin, core elements and use of the STA model are explained and practiced. Data collection took place from February 2022 to June 2022, approximately after all teams had received at least 1 or 2 relational security training days. The study was approved by internal review board (Scientific Committee) of the Pompestichting and was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013). Participation was voluntary, after receiving oral and written information concerning the data collection, the study

aims and objectives, participants signed an informed consent form. The study consisted mostly of a paper-and-pen data collection. Participants were granted approximately 20 min of time during a general team meeting to fill out the questionnaire. The questionnaire, consisted of questions concerning age, education, work experience and gender, followed by the measures of ward climate, relational security and team reflexivity. The questionnaires were returned to the investigator in a closed envelope. Only a few teams were asked to fill out an online version of the questionnaire, as they indicated that they did not have time to fill out the questionnaire during an upcoming team meeting. In both versions of the questionnaire (pen and paper, and online) participants were asked at the end, whether they wanted to participate in a second part of the study by filling out one of the scales (the STA scale) again in 1 or 2 weeks’ time. Participants who were willing to do that, wrote down their email address so that the researcher could send them the second measure. This effort resulted in a subgroup of 19 participants that filled out the STA scale two times to get insight in the test –retest reliability of the scale. After the data collection, the data was anonymously analyzed, to ensure that participants could not be identified based on the data during data analyses and reporting.

### Statistical analyses

Internal consistencies of the (sub)scales are calculated using Cronbach’s alpha. Confirmatory factor analysis (CFA) was used to see whether the original factor structure as suggested by Tighe and Gudjonsson (2012) was retained within this study. The robust maximum likelihood (MLR) estimation procedure was used to account for non-independence and non-normality (Kline, 2005). The fit of the model was examined using the Root Mean-Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), and the Tucker-Lewis Index (TLI). The following fit index cut-off values are indicative of good model fit: CFI and TLI > 0.90 and RMSEA < 0.05 (Kline, 2005). Pearson’s correlation coefficients were used to examine the relationships between the (sub)scales, of the STA scale, the EssenCES and Team Reflexivity Scale. Also, Pearson’s correlations was used to examine the relationships between the (sub)scales, of the STA scale and the age and level of experience of participants. An independent two sample t-test was used to test whether the scores on relational security differed between male and female participants. The test-retest reliability was tested by calculating the intraclass correlation coefficients (ICC’s) based on a two way mixed-effects model with absolute agreement (Koo and Li, 2016). Analyses were done using IBM SPSS Statistics for Windows, Version 25. For the CFA, (JASP, 2021) computer software was used.

## Results

### Internal consistency

Mean scores, standard deviations and the internal consistencies of the (sub)scales are shown in Table 1. The internal consistency of the STA total scale was relatively high (0.90). The Cronbach's alphas of the subscales ranged from 0.67 (patient focus) to 0.82 (pro-social team culture).

**Table 1.** Properties of the See, Think, Act, EssenCES and Team Reflexivity (sub)scales.

	Current $\alpha;M$ (SD)	Tighe et al. (2012) $\alpha;M$ (SD)	Chester et al. (2017) CITC	Siu et al. (2019) $\alpha;M$ (SD)
<b>STA</b>				
Therapeutic Management of Risk	.72; 2.1 (.3)	.91; 2.3 (.6)	.90	.93; 2.6 (.4)
Pro-Social Team Culture	.82; 2.1 (.4)	.93; 2.1 (.7)	.96	.94; 2.6 (.4)
Boundaries	.76; 2.4 (.4)	.90; 2.3 (.7)	.92	.96; 2.7 (.3)
Patient Focus	.67; 2.1 (.4)	.87; 2.3 (.6)	.92	.96; 2.6 (.3)
Total	.90; 2.2 (.3)	.97; 2.2 (.6)		
<b>EssenCES</b>				
Patient Cohesion	.42; 9.2 (4.5)	.86; 11.4 (4.2)		
Experienced Safety	.73; 8.3 (3.7)	.80; 10.2 (4.4)		
Therapeutic Hold	.64; 14.8 (2.3)	.50; 15.9 (2.6)		
<b>Team Reflexivity</b>				
Evaluation and learning	.87; 70.5 (7.4)			
Discussing processes	.76; 19.3 (3.2)			

### Confirmatory factor analysis

The model results indicated no satisfactory fit for the STA four factor model as suggested by Tighe and Gudjonsson (2012). CFI = 0.72, TLI = 0.70, and RMSEA = 0.08. See Table 2 for the item loadings per factor. Most items loaded significantly on their target factors, except items 3 and 26. A revised model leaving these items out did not improve the model fit: CFI = 0.73, TLI = 0.70, and RMSEA = 0.09.

### Construct validity

Construct validity was assessed by means of convergent validity tests. The STA (sub)scales were correlated with the subscales of the EssenCES and the subscales

of the Team Reflexivity Scale, results are shown in Table 3. As can be seen from the table, the total score on relational security showed a positive relationship with moderate strength with therapeutic hold ( $r = 0.43$ ) and a weak positive relationship with patient cohesion ( $r = 0.22$ ). The EssenCES subscale therapeutic hold was related to all four STA subscales namely pro-social team culture ( $r = 0.45$ ), therapeutic management of risk ( $r = 0.32$ ), boundaries ( $r = 0.30$ ) and patient focus ( $r = 0.29$ ). The EssenCES subscale patient cohesion was found to be positively related to pro-social team culture ( $r = 0.25$ ), and patient focus ( $r = 0.21$ ). Relational security was also related to the two scales of the Team Reflexivity Scale. To be precise, the STA total score correlated strongly with evaluation and learning ( $r = 0.53$ ) and moderately with discussing processes ( $r = 0.30$ ). Both dimensions of team reflexivity were positively related to all four STA subscales within this sample, with stronger relationships between the STA subscales and evaluation and learning.

**Table 2.** Standardized factor loadings CFA of the See, Think, Act scale.

Item	Risk	Team	Boundaries	Patient
1. We know how to respond if the patient mix needs addressing.	.58*			
2. We can maintain control by engaging with this patient group.	.41*			
3. We understand the potential for some visitors to undermine the treatment plans and recovery of patients and take the appropriate action to address this.	.22			
4. We are vigilant about how visits affect the patient before their visit.	.56*			
5. We promote tolerance.	.48*			
6. We look out for patients trying to conceal a deterioration in their mental state.	.44*			
7. We are vigilant about how visits affect the patient after their visit.	.70*			
8. We understand the risks some visitors might pose to patients.	.60*			
9. We are respectful of each other.		.40*		
10. We deal robustly with discrimination.		.43*		
11. We set a good example and are positive role models.		.43*		
12. There is a discipline and pride on our ward reflected in a tidy and well cared for environment.		.53*		

**Table 2.** Continued.

Item	Risk	Team	Boundaries	Patient
13. We deal robustly with bullying.		.50*		
14. We have a ward philosophy that we all understand.		.80*		
15. We deal robustly with harassment.		.52*		
16. We have a ward purpose that we all understand.		.85*		
17. We have ward core values that we all understand.		.77*		
18. We know which boundaries are non-negotiable and which we can make individual and team judgements about.			.48*	
19. We understand what maintaining clear boundaries with patients means.			.66*	
20. We speak up if we think we can see that a colleague has been put in a difficult position that could weaken security.			.67*	
21. We talk as a team during the shift and at handover.			.56*	
22. We understand why maintaining a clear boundary with patients is important.			.72*	
23. We adjust patients care plans according to their risk.				.63*
24. We know the histories of our patients.				.48*
25. Care plans are up to date to reflect how our patients are feeling today.				.49*
26. We monitor how our patients are feeling day to day.				.33
27. We recognise the relapse factors for each of our patients.				.41*
28. We engage in reflective practice as team.				.55*

**Test-retest reliability**

A subgroup of 19 participants filled out the STA scale two times to get insight in the test-retest reliability of the scale. The mean interval between the first and the second measurement of the STA scale was 12 days (min. = 7 days; max. = 18 days). ICC's of the STA total scale and the subscale pro-social team culture indicated good consistency between the ratings over the two time points. However, the ICC's of the other 3 subscales indicated moderate consistency (see Table 4).

**Table 3.** Pearson's correlation coefficients between study variables.

	STA				EssenCES				Team Reflexivity			
	Risk	Team	Boundaries	Patient	Total	PC	ES	TH	EL	DP		
Risk	1											
Team	.56**	1										
Boundaries	.57**	.55**	1									
Patient Focus	.55**	.56*	.50**	1								
Total	.81**	.87**	.78**	.79**	1							
PC	.19	.25*	.07	.21*	.22*	1						
ES	-.12	.14	-.00	-.01	.03	-.07	1					
TH	.32**	.45**	.30**	.29**	.43**	.30**	.05	1				
EL	.37**	.55**	.42**	.38**	.53**	.07	-.05	.32**	1			
DP	.26*	.23*	.20*	.32**	.30**	.09	-.10	-.04	.48**	1		

Note: PC = Patient Cohesion; ES = Experienced Safety; TH=Therapeutic Hold; EL= Evaluation and Learning; DP= Discussing Processes; \*p < .05; \*\*p < .01.

**Table 4.** Test-retest reliability of the STA (sub)scales.

	Measurepoint 1: M (SD)	Measurepoint 2: M (SD)	Intraclass Correlation Coefficient current study (N=19)	Intraclass Correlation Coefficient Siu et al., 2019 (N=30)
<b>STA</b>				
Therapeutic Management of Risk	2.2 (.4)	2.0 (.3)	.58	.50
Pro-Social Team Culture	2.2 (.4)	1.9 (.5)	.80	.57
Boundaries	2.5 (.3)	2.3 (.4)	.63	.58
Patient Focus	2.2 (.3)	2.0 (.3)	.66	.72
Total	2.3 (.3)	2.1 (.3)	.75	.60

### Further analyses

The independent two sample t-test revealed no significant difference between male and female participants regarding their view on relational security. A weak positive correlation was found between participants age and the total STA scale ( $r = 0.21$ ,  $p \leq 0.05$ ) and the STA subscale therapeutic management of risk ( $r = 0.24$ ,  $p = 0.02$ ). No relationship was found between relational security and staff members years of work experience in their current function.

### Discussion

The aim of this present study was to examine the psychometric qualities of the Dutch version of the STA scale. The internal consistency of the STA total scale was good. The internal consistency of the subscales was relatively low compared to other studies using the original English or the Chinese version of the STA scale (Chester et al., 2017; Tighe and Gudjonsson, 2012, Siu et al., 2019), but was still at broadly acceptable levels. This study was a first attempt in replicating the original factor structure as suggested by Tighe and Gudjonsson (2012). Further research is needed into the structural psychometric properties (of the Dutch version) of the STA scale, as the four-factor structure suggested by Tighe and Gudjonsson (2012) was not confirmed within this current sample. A potential explanation for not finding a satisfactory fit for the STA four-factor model could be that items of the STA scale might be related to more than one factor.

With regard to the construct validity of the STA scale, results were promising, as positive relationships between STA total score and related concepts such as elements of ward climate and team reflexivity were found. To be more precise, a moderate positive relationship between the total score of relational security and the ward climate subscale therapeutic hold was found. When looking more closely to the STA subscales, therapeutic hold of the EssenCES was positively related to all four subscales, this result is in line with the results found by Tighe and Gudjonsson (2012). Therapeutic hold scale of the EssenCES consist of five items: On this ward, patients can openly talk to staff about all their problems; Staff take a personal interest in the progress of patients; Staff members take a lot of time to deal with patients; Often, staff seem not to care if patients succeed or fail in treatment (reversed scored); Staff know patients and their personal histories very well. The relationship between relational security and therapeutic hold also seems to have face value as these five items reflect some important elements seen in the definitions of relational security such as a therapeutic relationship with trust between staff and patients and a need for in depth knowledge and understanding about patients in order to adjust security and care.

Within our sample only two out of four subscales of the STA scale were related to patient cohesion. These results differ from the results found by Tighe and Gudjonsson (2012) as they found all subscales of the STA to correlate positively with patient cohesion. It should be mentioned that the patient cohesion scale of the EssenCES showed weak internal consistency within the current study, therefore the results should be interpreted with care.

The current study adds to previous work on the construct validity of the STA scale by studying the relationship between the scale and team reflexivity, as team reflexivity is regarded an important aspect in enhancing relational security. As expected, team reflexivity was found to be positively correlated with relational security. Both dimensions of team reflexivity where positively related to all four STA subscales within this sample, the strongest relationship was found between evaluation and learning and the STA subscale pro-social team culture. The evaluation and learning scale focuses on the evaluation of finished business and learning from previous actions and adaptations. Markham (2022) advocates to place more emphasis on reflective practice in the STA guideline and to invest more within forensic mental health settings in explicit guidance regarding evaluation and learning to improve relational practice.

The test-retest reliability for the STA total scale was acceptable. However, the consistency between two assessments, differed between the subscales with moderate consistency for therapeutic management of risk, boundaries and patient focus and acceptable consistency for pro-social team culture. Siu et al., (2019) were the first looking into the test-retest reliability of the Chinese version of the



STA scale. Their results indicate moderate consistency (ICC ranging from 0.50 till 0.58) for 3 out of 4 subscales, they found acceptable consistency (ICC = 0.72) for the subscale patient focus.

In line with the results of Chester et al., (2017) and Siu et al., (2019) no relationship was found between relational security and staff members years of work experience in their current function. However, in the current study a weak positive relationship was found between age and management of risk and the total score of the STA scale, this was not reported by other studies yet. Siu et al., (2019) found that male participants reported higher levels of perceived confidence in relational security compared to their female colleagues, this result was not replicated within this current sample. There were no differences found between female and male staff members in their relational security scores, this result was in line with the results found in the study of Tighe and Gudjonsson (2012) who also found no difference between male and female staff members.

Some limitations of this current study must be noted. Firstly, this study had a relatively small sample size including staff members working in the same organization, limiting generalizability of the results. For examining the factor structure of the STA scale a larger sample would be preferred, the results on the replication of the factor structure therefore need to be seen as preliminary. Secondly, as this study was conducted within a facility for high secure forensic psychiatric care, this study does not give insight in differences in relational security between different security levels. Hence, earlier studies have found that the STA scale is able to differentiate between levels of security (Chester et al., 2017; Tighe and Gudjonsson, 2012).

Despite limitations, this current study adds knowledge to earlier studies by measuring relational security with the STA scale in a high secure forensic psychiatric setting, as previous studies have focused on testing the STA scale in facilities providing medium- and low-security care. The study results indicate that further research is needed into the reliability of the (Dutch version of the) STA scale. However, the results on the construct validity of the STA scale were promising, encouraging further development of this instrument designed to measure such an important concept.

It has been argued that in forensic care there is a need to re-focus on relational security in order to improve safety and care processes. Hence, Markham (2022) argues that there is a need for robust, comprehensive and consistent implementation of See Think Act in forensic mental health settings in England and Wales. Therefore, the need to have instruments that can measure this concept in a reliable and valid way, remains accentuated. Markham (2022), suggests to develop a relational security audit tool on the items of relational security (staff team's ability to maintain boundaries and deliver therapy, patient mix and

dynamics, the internal world of the patient and the unit, and connections to the outside world and the impact of visitors) that can be used to monitor and enhance relational security. The authors of this current study underline the importance of clinical practice and research endeavors aimed at getting a clearer picture of relational security in forensic psychiatric care and how it can be successfully implemented and monitored in daily practice.

The DoH (2010) in the United Kingdom referred to relational security as the knowledge and understanding staff have of a patient and of the environment, and the translation of that information into appropriate responses and care. In the Dutch translation of the STA guideline this definition was enriched with approval of the original author: *“the knowledge and understanding staff have of a patient, themselves and of the environment, and the translation of that information into appropriate responses and care.”* This adjustment was made after experiencing in clinical practice that reflection on oneself as a professional, is important in working with patients and working in a team. The relationship found between relational security and team reflexivity seems to underline the importance of facilitating reflective practice for professionals working in high secure forensic psychiatric care. We would like to address some points that could be interesting for further development of the STA scale. The first point concerns working toward unambiguity on item level. Hence, in some items it is not clear whether the statement addresses the attitude or behavior of professionals or patients or professionals and patients together. For instance: “There is a discipline and pride on our ward”; “We are respectful of each other”; “We promote tolerance.” There are also items that give difficulties in interpretation, like: “We deal robustly with bullying.” Hence, when respondents answer “not like our team” does that mean “bullying does not occur on our ward” or “we don't deal with it, we tolerate it” or “we deal with it, but not robustly, but in a ‘gentle’ way.” The developer of the original STA scale has put effort into breaking down statements which addressed more than one subject into separate questions (Tighe and Gudjonsson, 2012). However, there are still items left that seem to tap into more than one aspect of relational security, for instance “We understand the potential for some visitors to undermine the treatment plans and recovery of patients and take the appropriate action to address this.” There are also some items with very specific or overlapping wording that need attention. Hence, 3 out of 5 items concerning management of boundaries explicitly include the word boundary or boundaries. The scale might benefit from adding some alternative wording.

It would be interesting to look at the possibility to encompass the overarching elements of the STA model See, Think and Act into the measure. Relational security as presented in the STA guideline describes the importance of observations, being vigilant, noticing even the smallest changes in behavior or the surrounding

(See). The importance of reflection, using insight and knowledge in interpreting or giving meaning to the observations (Think). And the importance of taking appropriate action that fits the situation, to prevent incidents from happening (Act). When looking at the current STA scale some items tap into observations (See): We are vigilant about how visits affect the patient after their visit; other into knowledge and reflection (Think): We know the histories of our patients; we engage in reflective practice; others into action (Act): We adjust patients' care plans according to their risk. However, there are also items including more than one element, for instance: We understand the potential for some visitors to undermine the treatment plans and recovery of patients and take the appropriate action to address this. It would be interesting to study the possibilities of developing the instrument in such a way that it could give both insight into the capacities of a team on the content of relational security themes such as boundary management and patient focus, and also insight into the capacities of a team regarding the dynamic process of observing, reflecting and acting. These insights could subsequently give direction to further team development regarding relational security. The items for the original STA scale came from the statements presented at the end of each section of the STA handbook. Within the handbook these statements are presented as a prompt for professionals to reflect on their practice regarding relational security. Hence, the statements reflect how the service should feel when a team is "getting it right". Besides revising the statements of the STA scale it could also be worthwhile to revise the statements in the handbook in order to make them as clear as possible, to guide clinical practice.

## Supplement

Onderstaande stellingen gaan over het sociotherapeutisch team waarin je werkt op jouw afdeling. Zou je zo vriendelijk willen zijn om aan te geven in welke mate elke stelling past bij de manier waarop jullie werken? Het gaat erom hoe jij vindt dat jouw team als geheel functioneert. Dus let op: het gaat er niet over hoe je zou willen dat het zou zijn, maar hoe het volgens jou in de praktijk nu is. Sommige stellingen zijn misschien waar voor sommige teamleden maar niet voor anderen, of waar voor jouw team op sommige momenten, maar op andere momenten weer niet. Probeer je antwoord te baseren op je **eerste algehele inschatting van hoe goed de stelling bij jullie als sociotherapeutisch team past**. Er zijn geen goede of foute antwoorden.

	Niet zoals ons team	Een beetje zoals ons team	Behoorlijk zoals ons team	Precies zoals ons team
	0	1	2	3

1	We weten welke actie we moeten nemen als de samenstelling van de patiëntengroep dient te worden aangepakt.	0	1	2	3
2	We kunnen met deze patiëntengroep contact onderhouden en zo de controle bewaren.	0	1	2	3
3	We begrijpen dat sommige bezoekers de behandelplannen en het herstel van de patiënten kunnen ondermijnen en we nemen hiertegen de juiste maatregelen.	0	1	2	3
4	Voorafgaand aan bezoek zijn we alert op wat dat bezoek bij de patiënt teweegbrengt.	0	1	2	3
5	We moedigen verdraagzaamheid aan.	0	1	2	3
6	We zijn waakzaam voor de mogelijkheid dat patiënten een verslechtering van hun mentaal welzijn verbloemen.	0	1	2	3
7	Na een bezoek zijn we alert op de gevolgen van dat bezoek voor de patiënt.	0	1	2	3
8	We begrijpen de risico's die sommige bezoekers voor de patiënten met zich mee kunnen brengen.	0	1	2	3
9	We hebben respect voor elkaar.	0	1	2	3
10	We pakken discriminatie daadkrachtig aan.	0	1	2	3
11	We geven het goede voorbeeld en zijn positieve rolmodellen.	0	1	2	3
12	Er bestaat een zekere discipline en trots op onze afdeling die je terugziet in een nette en goed verzorgde omgeving.	0	1	2	3
13	We pakken pesten daadkrachtig aan.	0	1	2	3
14	We hebben een afdelingsfilosofie die we allemaal begrijpen.	0	1	2	3

15	We pakken lastigvallen daadkrachtig aan.	0	1	2	3
16	We hebben een afdelingsdoel dat we allemaal begrijpen.	0	1	2	3
17	We hebben als afdeling kernwaarden die we allemaal begrijpen.	0	1	2	3
18	We weten welke grenzen niet onderhandelbaar zijn en over welke grenzen we als individu en als team mogen oordelen.	0	1	2	3
19	We begrijpen wat het handhaven van duidelijke grenzen met patiënten betekent.	0	1	2	3
20	We zeggen er iets van als we denken dat een collega in een moeilijke positie is gebracht die de veiligheid zou kunnen ondermijnen.	0	1	2	3
21	We overleggen als team gedurende de dienst en tijdens de overdracht.	0	1	2	3
22	We begrijpen waarom het belangrijk is om een duidelijke grens met de patiënten te handhaven.	0	1	2	3
23	We passen de zorgplannen van de patiënten aan op basis van hun risico's.	0	1	2	3
24	We kennen de voorgeschiedenis van onze patiënten.	0	1	2	3
25	De zorgplannen zijn up-to-date zodat ze weergeven hoe onze patiënten zich momenteel voelen.	0	1	2	3
26	We houden in de gaten hoe onze patiënten zich van dag tot dag voelen.	0	1	2	3
27	We herkennen de terugvalfactoren voor elk van onze patiënten.	0	1	2	3
28	We reflecteren als team en leren daarvan voor de dagelijkse praktijk.	0	1	2	3

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## CHAPTER 7

General discussion





## Summary of the research findings

The research presented in this thesis elucidates some elements that play a role in the task of professionals working in day-to-day care in high secure forensic psychiatric hospitals. Characteristics of staff and patients, the emotional responses that staff experience in interaction with patients and the management of these emotions are studied as they seem to play an important role in social ward climate, relational security and staff and patient well-being. The aim of these research endeavours was to provide more insight in the complex work of staff members in high secure forensic psychiatric care, in order to give directions for further improvement of daily practice.

**Chapter 2** dealt with the question how to measure social ward climate within a high secure forensic setting, by examining the psychometric properties and the overlap of two instruments developed to measure this concept in secure care, the EssenCES and the GCI-r. Good internal consistency was found for all subscales of both instruments. The original factor structure was confirmed for the EssenCES, but not for the GCI-r. Results of the study indicate that both instruments were strongly related. A strong positive relationship was found between the support scale of the GCI-r and the EssenCES' therapeutic hold scale, between the atmosphere scale of the GCI-r and the experienced safety and patient cohesion scales of the EssenCES and between the growth scale of the GCI-r and the therapeutic hold scale of the EssenCES. But there also appeared differences between the two instruments. One of the differences is that the GCI-r has a subscale 'repression', aimed at measuring negative transactional processes such as structure, power and coercion between staff members and patients in closed settings. This repression scale showed to have a negative relationship with all other social climate subscales included in the study. However, it must be noted that the items of this subscale are less homogeneous than the other social ward climate subscales. As possible negative consequences of repression on the therapeutic environment, interpersonal relationships, well-being and treatment effects are noted in the literature, more work is needed on the definition and operationalization of this concept (de Valk et al., 2016; Tomlin et al., 2019; 2020). Other differences between the two instruments can be found in the perspective from which items are formulated. The GCI-r uses a first-person perspective while the EssenCES uses a more general or group perspective. Furthermore, the EssenCES can be used to measure how social ward climate is perceived by both staff members and patients.

Taking the perception of both staff and patients into account when monitoring social ward climate is important as previous research in the United States and England found that perceptions of staff and patients can differ. **Chapter 3** describes

a study tapping into the perspective on social ward climate of both staff and patients in a high secure forensic setting in the Netherlands. Findings are consistent with previous research. Therapeutic hold was rated higher among staff members compared to patients, while patient cohesion and experienced safety, were rated higher by patients. The findings of the study underline the importance of assessing social ward climate among both patients and staff in clinical practice. In order to disentangle the specific factors playing a role in the differences in perceptions between patients and staff, further research is needed. Potential explanations could lie in the different roles and positions that staff and patients have within the institution, effecting their experience and perception of social ward climate. A lack of autonomy or experiences of restrictiveness or repression could for instance be translated into a lower experienced therapeutic holding of patients, compared to staff. Another possible mechanism, explaining the difference between patients and staff, could be an interpretation bias. Being observer or actor of a task influences the attributions made (Campbell and Sedikides, 1999), also referred to as an 'us' versus 'them' lens (Tomlin and Tonkin, 2022). Since therapeutic hold targets mostly staff's work and patient cohesion and safety could be interpreted as more influenced by actions of the patient group, the differences could be explained in that way. Irrespectively of the underlying mechanisms, the differences in perception, ask for feedback differentiating between patient scores and staff scores after measuring social ward climate within a forensic facility. As social ward climate is perceived differently, the perception of the staff cannot be regarded as a valid indicator of how the climate is perceived by patients. In order to take the perception of patients into account in establishing social ward climate, staff need to become aware of patients' perceptions.

The study presented in the third chapter also aimed to gain insight into the relationship between the perception of social ward climate and patient characteristics such as age, risk and psychopathy. Results show that there are patient characteristics associated with social ward climate. Hence, patient cohesion was negatively predicted by the antisocial facet of the PCL-R and positively by the historical factor of the HCR-20. Experienced safety was positively predicted by the historical factor of the HCR-20. Therapeutic hold was positively predicted by age, the interpersonal facet of the PCL-R, and negatively by the clinical factor of the HCR-20. The precise mechanisms underlying the relationships between patient characteristics and social ward climate requires further examination. The relationship between social ward climate and various social and individual characteristics might reflect an interplay between patients' (security) needs and social ward climate. Hence, individuals at high risk of showing violence or who are suffering from severe psychiatric problems might have higher security needs, leading them to be more exposed to physical, procedural and relational security,

ultimately influencing their (perception of) social ward climate. However, it is fair to suggest that this concerns a bi-directional or dynamic process, as higher levels of security and experiences of restrictiveness can lead to a loss of sense of self or loss of a sense of autonomy and feelings of isolation and frustration (Sustere and Tarpey, 2019; Tomlin et al., 2019), potentially increasing risks and subsequently leading to enhanced security measures.

Nursing staff and management within the forensic setting could use the knowledge on differences in perceptions of social ward climate and the relationship with patient characteristics in their challenging task of setting and maintaining a social ward climate that is supportive of treatment success for the whole patient group as well as for the individual patient. In order to do so, it is important for professionals to first become aware of the potential discrepancies between their view on social ward climate and their patients view. Monitoring the experiences of social ward climate by using measurement tools and facilitating dialogue between staff and patients concerning concepts, such as safety, cohesion, support, atmosphere, repression and possibilities for growth, could contribute to more insight that could lead to better adjustment of the environment to patients' needs. Hopefully, subsequently leading to more safety and better treatment responses. There are studies showing that interventions such as staff training concerning social ward climate can effect patients' experience of social ward climate in a positive way (Maguire et al., 2018; Nessel et al., 2009). Also, there are indications that providing staff with feedback on measurements of social ward climate and giving them the opportunity to discuss the feedback they receive, contributes to change (James et al., 1990).

Interaction between staff and patients is considered as one of the most important factors of social ward climate. It can be seen as a dynamic factor that forensic facilities can invest in and influence, making it an important factor to study. Hence, despite their importance, interactions between staff and patients can be challenging in the forensic context. Gaining more insight, in which factors and processes play a role in these interactions, might help in effectively using patient-staff interactions in maintaining a social ward climate that promotes rehabilitation. An interesting step in this direction is studying the emotional responses that are experienced by staff in interaction with patients. Therefore the implicit and subtle interpersonal pressures exerted by patients on the professional they interact with, are studied and described in **chapter 4**. Also, the relationship between interpersonal pressures and social ward climate and satisfaction with daily staff was incorporated in that study. Results indicate that the way patients were perceived by staff members regarding control and affiliation, was best predicted by patient characteristics. No associations were found between characteristics of staff members and their perception of patients' affiliation or control. Patients

diagnosed with an antisocial personality disorder are perceived as being more dominant compared to patients with schizophrenia or a psychotic- or schizo-affective disorder. With regard to affiliation, there were no indications for differences between diagnostic groups. Affiliation was however negatively predicted by recent problems with treatment response and positively by patient age. The control dimension was positively predicted by patients' disruptive behavior within the facility. Patients that were seen as more controlling by staff, were less satisfied with the safety on their ward. Furthermore, the level of affiliation was positively related to patients' satisfaction with daily staff. In general, the results indicate that perception of patients' interpersonal style entails patient related information and can be relevant for staff to use in their work. Although this study was explorative, it fosters our thinking on interpersonal behavior and the challenging aspects of patient-staff interactions. Awareness among staff members of what patients evoke in them could be useful for relating to patients in the right way, seeing behavior and interactional processes in the light of patient characteristics and choosing effective interactional strategies. It is important to share and discuss patient specific information and the possible emotional and interactional consequences in the multidisciplinary team for instance during meetings concerning treatment planning, or during hand-over between shifts. Supporting staff in their thinking about the possible relationship between their emotional responses and patient characteristics might contribute to the management of their emotions and choosing interactional strategies that are adjusted to the patient and treatment goals.

In order for staff to adapt their behavior in interaction with patients, the management of their personal emotions can be seen as an important part of the professional skills in forensic psychiatric care. Staff need to manage (the sometimes conflicting) emotions that emerge during their work. The process of regulating one's emotions to produce organizationally desired emotional displays has been referred to as 'emotional labour' (Diefendorff et al., 2008; Grandey, 2000; Hochschild, 1983). Especially in the context of emotionally charged interactions, professionals might use emotion regulation strategies. Within the study presented in **chapter 5**, staff members reported having emotional demanding work and reported using emotional labour strategies known as deep acting and surface acting during their work. Although both emotional labour strategies are used by professionals, only surface acting was found to be positively related with emotional demands. The higher the emotional demands, the more surface acting was reported by staff. Furthermore, regression analyses indicated that surface acting had the most predictive power for emotional exhaustion. When adding emotional labour as a predictor of emotional exhaustion besides emotional demands, the relative contribution of emotional demands in the prediction of emotional exhaustion declined and surface acting was found to be the most powerful predictor. Deep

acting did not significantly contribute to the prediction of emotional exhaustion. This result is in line with earlier studies describing deep acting as a more healthier emotional coping strategy. A possible underlying mechanism for the negative relationship between surface acting and emotional exhaustion is found in the experience of dissonance or tension felt when expressions and feelings diverge (Bakker and Heuven, 2006; Ashforth and Humphrey, 1993; Hochschild, 1983) and the cognitive control resources needed to cope with this tension (Schmidt and Diestel, 2014). The supportiveness of the forensic work environment has been suggested as a potential protective or energizing factor within the job context. Within the study presented in chapter 5, workplace support did not moderate the relationship between emotional labour and emotional exhaustion. However, experiencing the relationship with the manager as supportive contributed negatively to emotional exhaustion. It might be useful to offer specific support regarding emotional labour in the workplace. For instance, by focusing on increasing self-reflexivity, by helping staff members to be aware of emotions they experience during their work and encourage them to evaluate how they manage these emotions during challenging interactions.

It is important to support and encourage professionals in the continuous process of observing, reflecting and acting. Also, support is needed on which information could be important to incorporate within this process such as, personal emotions, professional role, patient characteristics and treatment-, safety- or rehabilitation goals. It has been argued that in forensic care a strong emphasis on reflection is needed in order to improve (relational) safety and care processes. In order to support professionals in evaluating and maintaining relational security the Department of Health published "See Think Act (STA)," a handbook on relational security. STA refers to the elements that play a fundamental role in daily practice in forensic care. Hence the importance of observing, being vigilant, noticing even the smallest changes in feelings, behaviors or the surrounding (See). The importance of reflection, using insight and knowledge in interpreting or giving meaning to the observations and exploring possible (re)actions (Think). And the importance of taking appropriate action that fits the situation, to prevent incidents from happening (Act).

Research on relational security is important, but is hampered by the lack of instruments to assess and monitor this concept in clinical practice. In an attempt to fill this gap, Tighe and Gudjonsson (2012) developed a measure of qualitative relational security as perceived by forensic staff members. This 'See Think Act' (STA) scale is based on the content presented in the STA DoH practice guidelines. In **chapter 6** the psychometric properties of the Dutch version of the STA scale and its relationship with social ward climate and team reflexivity was studied. As relational security is based on "*the knowledge and understanding staff have of a*

*patient, themselves and of the environment, and the translation of that information into appropriate responses and care”* (EFP, 2020; Royal College of Psychiatrists, 2023) it could be argued that reflective practice is an important factor for optimizing relational security. Hence, discussing processes and evaluating practice within a team, contributes to knowledge and insight which can be translated into appropriate responses and care. Also, good practice on relational security should translate into aspects of social ward climate.

Results of the study presented in chapter 6 show that the internal consistency of the STA total scale was good. The internal consistency of the subscales was relatively low compared to other studies using the original English or the Chinese version of the scale. The factor structure found in the original English version of the scale was not confirmed within this sample. The test-retest reliability for the STA total scale was acceptable. However, the consistency between two assessments, differed between the subscales with moderate consistency for the therapeutic management of risk scale, the boundary scale and the patient focus scale and acceptable consistency for the pro-social team culture scale. No relationship was found between relational security and staff members years of work experience in their current function. However, a weak positive relationship was found between age and the total score of the STA scale and the subscale therapeutic management of risk. There were no differences found between female and male staff members in their relational security scores. With regard to the validity of the instrument, results were promising, finding relationships with aspects of social ward climate and team reflexivity. A moderate positive relationship between the total score of relational security and the social ward climate subscale therapeutic hold was found. Team reflexivity was found to be positively correlated with relational security. Both dimensions of team reflexivity (discussing processes and evaluation and learning) were positively related to all four STA subscales within this sample, the strongest relationship was found between evaluation and learning and the STA subscale pro-social team culture. The relationship found between relational security and team reflexivity seems to underline the importance of facilitating reflective practice for professionals working in high secure forensic psychiatric care.

What can we conclude from all the studies presented in this thesis? In order to keep sight on how the social ward environment is shaped and experienced by staff and patients it is important to monitor social ward climate and relational security. Measuring the experiences in both staff and patients is important as experiences are found to differ between these groups. The perception of the staff cannot be regarded as a valid indicator of how the social climate is perceived by patients. In order to take the perception of patients into account in establishing social ward climate, staff need to become aware of patients’ perceptions. In order to monitor and use these concepts in clinical practice, it is important to have and use valid and reliable instruments.

Furthermore, patient characteristics are found to be related to how patients experience social ward climate, their interaction with daily staff and the emotional responses elicited in staff members. Therefore, it is important to take patient characteristics into account in order to develop and maintain a social ward climate that contributes to the well-being of patients and staff. To be more precise, historical and clinical risk factors, psychopathy and age are found to be related to how patients perceive social ward climate and their satisfaction with daily staff. Patient characteristics such as disorder and problems with treatment response, disruptive behavior with the facility and age, also play a role in interpersonal contact within the facility as they are related to emotional reactions of staff members.

How staff members manage the emotions that they experience during their work is important for their emotional well-being and work performance. It might be useful to offer specific support regarding emotional labour in the workplace. For instance, by helping staff members to become aware of the personal emotions they experience during their work and encourage them to evaluate how they manage these emotions during challenging interactions. Reflection on job demands, patient information, inter- and intra-personal processes and how these processes effect professional functioning is deemed an important aspect to implement and nourish in delivering relational security in high secure forensic psychiatric care. This information could be shared and discussed during multidisciplinary team meetings, during hand-over between shifts or during super- or inter-vision or coaching. How is the social climate experienced by the patient? Does he feel safe, supported, repressed? What makes him feel the way he does, how does his perception relate to his personal characteristics such as disorder, treatment phase, history or responsivity needs? How does the closed context, the patient mix and our feelings and behavior as professionals (individual and team) and the outside context relate to this? What potential changes are desirable? How can we make steps towards these goals? How can we notice change?

Gathering, sharing and using relevant knowledge about the patient, yourself as a professional and the environment you work in, are important ingredients of relational security. Professionals working multidisciplinary need to share their knowledge, observations, assumptions, thoughts and feelings. By means of joint reflection and decision making, care and security can be delivered in a way that is fine-tuned on patients’ risks, needs and responsivity issues. STA is considered as a promising tool for professionals in evaluating and delivering relational security. In order to study the actual impact of relational security on for instance, risk incidents on the ward, treatment outcomes and patient satisfaction, valid and reliable measures are needed. The STA scale developed to measure relational security as perceived by forensic staff members, can be seen as a promising starting point for further development as this measure is found to be related to aspects of social ward climate and team reflexivity.

## Limitations and Strengths

There are some limitations that must be noted in interpreting the results presented in this thesis. Firstly, it is important to note that the studies do not present a unidirectional causal relationship between study variables. All study results included are based on correlational data. Secondly, the samples were drawn from a single high secure forensic institution within the Netherlands, limiting generalizability of the results. Replication of the results is needed in other samples including several high secure forensic hospitals. A third limitation would be missing data as a result of the participation of patients and staff on voluntary base. It could be that individuals that did not participate in the assessment of for instance social ward climate or relational security have had other views than individuals that did participate. Also, as the response rate per unit was relatively low it was not possible to generate mean social climate or relational security scores for the units, in order to explore variation on ward level. Another limitation could be the use of (relatively short) self-report measures. Although these instruments seem suited for clinical practice because of their relative ease and short time to fill out, they can draw a simplified picture of the concepts we are interested in. There are studies advocating a more in depth definition and operationalization of concepts of social ward climate and relational security (Boone et al., 2016; Doyle et al., 2017; Markham, 2022). Alongside routine monitoring using short self-report measures, it has been recommended that more detailed information should be gathered by using more lengthy questionnaires (Tonkin, 2015), or by using other methods like focus groups, individual interviews with patients and staff (Boone et al., 2016; Doyle et al., 2017; Markham, 2022), observation in daily practice, or more experimental designs for instance using virtual reality (Mason et al., 2022; Riches et al., 2022).

Despite the limitations, studies presented in this thesis further our knowledge on the psychometric qualities of several instruments that can be useful for clinical practice in monitoring important aspects in the high secure forensic context, like social ward climate and relational security. The findings of the study presented chapter 2 illustrate the importance of considering how instruments may differ in the definition and operationalization of social ward climate and the respondent groups they are suited for. Nursing staff and management within high-secure forensic setting could use the knowledge in their choices related to measurement tools they are willing to use. Also, several studies presented in this thesis extend earlier research conducted mostly outside the Netherlands or Europe. Hence, the study presented in chapter 3 is among the first to demonstrate differences between staff members and patients on all three factors of social ward climate measured with the EssenCES within a high secure forensic setting in the Netherlands. The study described in chapter 2 was among the first to investigate

psychometric properties of the GCI-r in a sample of adult forensic patients. The study described in chapter 6 was the first to examine the psychometric qualities of the recently developed Dutch version of the STA scale in high secure forensic care, as previous studies have focused on testing the STA scale in facilities providing medium- and low-security care outside the Netherlands.

Besides more insight in psychometric qualities of instruments measuring social ward climate and relational security, the studies presented in this thesis further our knowledge concerning several under-explored topics in high secure forensic psychiatric care. Such as the relationship between patients' characteristics and perceptions of social ward climate, and emotional reactions of staff members in interaction with patients. Furthermore, the emotional labour strategies used by staff to deal with possible undesirable or conflicting emotions and the relationship with their emotional well-being. Studies presented in this thesis foster our thinking on interpersonal behavior and the challenging aspects of patient-staff interactions. Gaining more insight in which factors and processes play a role in these interactions might help in effectively using the patient-staff interactions in maintaining safety and promoting the rehabilitation of patients. The study presented in chapter 4 contributes to theory on responsivity, a key element of effective forensic care. The importance of the therapeutic relationship and taking a patients' bio-demographic characteristics, learning style, personality and abilities into account in delivering care, are addressed by the responsivity principle. Hence, awareness among staff members of what patients evoke in them could be useful for relating to patients in the right way.

The results of the study described in chapter 5 contributes to the knowledge on emotional labour. The study showed that the framework of emotional labour is a useful paradigm to understand the relationship between emotional demands and emotional exhaustion within high secure forensic psychiatric care. Although more research is needed to further elucidate the mediation by surface acting on the relationship between emotional demands and emotional exhaustion, our findings allow the conclusion that attention should be paid to emotional labour strategies in practice in order to encourage emotional well-being.



## Clinical implications

Nursing staff and management within high secure forensic settings could use the knowledge derived from these studies in their choices related to monitoring important concepts such as social ward climate. Our results are most favourable for the Essences as an instrument to monitor aspects of social ward climate in samples similar to the one used in the current studies. The EssenCES will invite individuals to evaluate topics like safety, support, and cohesion on a group level, taking other group members into account in their evaluation. Most importantly, the EssenCES can be used to measure how social ward climate is perceived by both staff members and patients. The findings of the study presented in chapter 3, underline the importance of assessing social ward climate among both patients and staff in clinical practice. Since social ward climate is perceived differently between these groups, the perception of staff cannot be regarded as a valid indicator of how the social climate is perceived by patients. Detailed feedback differentiating between patients' scores and staff scores could provide insight into potential discrepancies between groups. When discrepancies between views are clear, interventions can take place aimed at fine tuning social climate on a ward. Service managers could choose or design interventions to improve perceptions of social ward climate in both staff and patients. Research has shown that active participation of staff (and patients) is a key factor in the process of improving perceptions of social ward climate (James et al., 1990; Moos, 1973). Nasset and colleagues (2009) indicated for instance that a 3-week staff training program concerning important aspects of treatment milieu, can improve social ward climate as perceived by patients within a forensic psychiatric ward. Another potential important aspect for management of social ward climate, described by Norton (2004), is that patients know what they can expect from the environment (nurses) and what is expected from them. Norton (2004) argues that the overall therapeutic objectives of a ward need to be clear. These objectives can for instance be documented for staff and patients, accompanied with methods used on a ward to achieve them.

The insight that patient characteristics are related to how patients perceive social ward climate and their satisfaction with daily staff could be beneficial for active management of social ward climate. Hence, knowledge on the relationship between patient characteristics and the perception of social climate on a ward could for instance assist service managers in the composition of patient groups. Furthermore, insights could be implemented in training programs, informing staff what they can expect from patients with regard to their perception of social climate. For instance, which patients might be susceptible for feelings of unsafety or for perceiving lower levels of therapeutic hold. Results of studies presented in

this thesis contribute to clinical thinking on the responsivity principle that is important in delivering effective forensic care. Using insights on factors and processes that play a role in staff and patient interactions might help us in effectively using these interactions in maintaining safety and promoting rehabilitation of patients.

Awareness among staff members of what patients evoke in them could be useful for relating to patients in the right way, choosing effective interactional strategies, seeing behavior and interactional processes in the light of patients' problems, and de-escalation in tense situations. Although further research is needed, it seems worthwhile to explore the possibilities to make somewhat implicit feelings more explicit for staff members, and assessable for team discussion, training and supervision. Besides being aware of emotional reactions that are being evoked in daily practice, it is also important to focus on how professionals subsequently deal with these emotions. We found that staff members working on wards in the direct care of forensic psychiatric patients tend to use both deep- and surface acting during their work and that surface acting is a predictor for emotional exhaustion. Therefore, it might be useful to offer workplace support regarding emotional labour. For instance, by helping staff members to become aware of the emotions they experience during their work and encourage them to evaluate how they manage these emotions during challenging interactions. Organizations should provide training for their staff, facilitating and learning them to explore their emotion work and strategies used, and the possible benefits and risks that are associated with certain coping strategies (Edward et al., 2017; Mann and Cowburn, 2005).

Besides relying on the internal resources in staff members like emotion regulation strategies, it is highly important to invest in organizational support and resources (Delgado et al., 2017; Edward et al., 2017). Clinical supervision, intervision and investing in an open organization and team culture are important in order to maintain good mental health for forensic professionals (Dickenson and Wright, 2008; Feerick et al., 2021; Edward et al., 2017; Lowdell and Adshead, 2009). Staff members might benefit from support in how to respond to the emotional demands and dealing with their emotions in a healthy manner (Delgado et al., 2017; Dickenson and Wright, 2008; Mann and Cowburn, 2005). Besides the benefits related to the mental health of professionals, self-reflection and emotion regulation could also contribute to effective patient care and risk management. Hence, regulation of their own emotions enables staff members to more effectively respond to patients' needs (Hammarström et al., 2019).

Next to making staff members aware of their emotions and emotion regulation strategies, it could also be helpful to reflect on the so-called 'display rules' of the organization or wards that staff members are working on. Display rules can be seen as shared norms within a team or an organization, governing the expression of emotions at work. It could be imaginable that in some situations, for instance,

in case a patient behaves verbally aggressive on the ward, staff members could express their fear or anger, in order to show the patient what the effect is of his current behavior on others. However, a display rule could also be to never show your own fear or anger to patients (Jacob and Holmes, 2011). In that case, emotion regulation strategies like deep or surface acting are needed to align feelings with work demands. We suggest that teams take time to explore and discuss their so-called display rules and the possible effects on them and on their patient care. It is important to take into account that the process of self-reflection raises awareness of vulnerability. Hence, Hammarström and colleagues (2022) describe that looking inward can be exhausting and hard work. However, it helps professionals in becoming aware of their personal boundaries and vulnerability. Hammarström and colleagues (2022) use three themes to characterize the experience of vulnerability in cares in forensic inpatient care. First, finding a balance between what is personal and private as professionals struggle with how personal and genuine they can be. Second, struggling with being authentic and true to oneself, hence professionals struggle to find a balance between being genuine and preforming (playing) their professional role. Third, protecting oneself and avoiding harm, an aspect referring to dealing with fear of threats and violence that often results in an inner dialogue either to stay present or flee. Hammarström and colleagues (2022) conclude that the essence of vulnerability as experienced by professionals working in inpatient forensic psychiatry is *'not knowing where the boundary is until it has been exceeded'*. They suggest that vulnerability is about finding a balance through inner dialogue, to be genuine towards a patient creating alliance instead of a distant role to protect oneself from harm. Dealing with vulnerability as a professional, can help being genuine and being yourself which is beneficial in the relationships with colleagues and patients and helps being open and sensitive to patients (needs). The concepts of self-reflection and vulnerability are also connected to the concept of resilience.

Resilience has been defined as the ability to bounce back and recover from stress (Smith et al., 2010). For both general and forensic nursing, resilience is seen as a quality necessary to succeed in the work context (Jackson et al., 2007; van der Horst, 2021; Nellissen et al., 2021). Although there are several studies in general nursing, indicating that resilience plays a role in buffering workplace stress and contributes to psychological well-being (Li and Hasson, 2020), studies on resilience in forensic care are scarce (Bogaerts et al., 2021). However, Henshall and colleagues (2020) demonstrated that for nurses working in forensic settings, resilience enhancement programs can increase nurses' levels of resilience and confidence and improve inter-professional relationships. It has been recommended to build resilience in health professionals via education and workplace learning (McAllister and McKinnon, 2009; van der Horst, 2021). McAllister and McKinnon

(2009) argue that in education attention should be paid to (professional)identity building work, coping capacities, strengths development and leadership for change. In the workplace, opportunities should be given to reflect upon and learn from practice. Herein, having positive role models as colleagues can facilitate imitative learning. Furthermore, policies and practices are needed facilitating team decision making and reflection (McAllister and McKinnon, 2009). Van der Horst (2021) argues that both 'knowing what', referring to explicit knowledge learned during education and 'knowing why' or 'tacit knowledge' referring to more practical and implicit knowledge stemming from work experience, are important for forensic craftsmanship. In order to build tacit knowledge it is important that professionals are facilitated in taking responsibility for their actions and in reflecting on their actions (van der Horst, 2021). Related to this is the work of Dewey (1933) and Schön (1983) on reflective thinking in the professional context. Central in their line of thinking is that situations of uncertainty, doubt, instability, uniqueness, hesitation or surprise, ask for inquiry. Schön (1983) distinguishes reflection in action (thinking about what you are doing while doing it) from reflection on action (after the experience has taken place). Reflection in action *"...consists in on-the-spot surfacing, criticizing, restructuring and testing of intuitive understandings of experienced phenomena; often it takes the form of a reflective conversation with the situation. (p. 241)"* Building forward on that work, Teekman (2000) studied whether and how nurses make use of reflective thinking in their practice. He found that indeed, especially in moments of doubt and perplexity, reflective thinking was present in nursing staff. Strategies that were used included comparing and contrasting phenomena, recognizing patterns, categorizing perceptions, framing, and self-questioning. Two levels of reflective thinking were identified within the sample: reflective thinking for action and reflective thinking for evaluation. A third level 'reflective thinking for critical inquiry' proposed by Teekman in his model of reflective thinking, was not demonstrated by nurses included in his study.

McAllister and McKinnon (2009) underline the importance of dialogical activities with genuine dialogue between teams and team members and to share lessons from experience with each other to ensure that questioning, challenging and team decision making is not only safe, but common. The suggestions made for improvement of resilience in professionals are expected to also benefit relational security. For relational security, sharing knowledge with your colleagues is deemed important. Hence, an advantage of working in a multidisciplinary team is that different professions include their own expertise, perspective and their own experiences with patients in care planning. However, Haines and colleagues (2018) found that in practice, during multidisciplinary team meetings using these different professional roles and responsibilities in a way that enables shared decision making remains challenging in forensic care. Challenges that were

mentioned by professionals were for instance divided loyalty, loyalty towards the multidisciplinary team and loyalty towards your own profession group. Haines and colleagues (2018) also found that risk was often the lens through which treatment progress was determined and also often the source of disagreement between different professionals. They illustrate this, by describing that nurses report shifts in hierarchy when decisions based on analysis of risk need to be taken. The head of treatment often has the final word, carries responsibility and therefore seems to take the final decision. Nurses do not always feel heard while they have to manage the decision and risk on a day to day basis. It could be argued that these processes also concern emotion work, as professionals might experience dissonance between their felt and their displayed emotions not only in interaction with patients but also during team meetings. Observational data from the study of Haines and colleagues (2018) suggests that not everything is verbalized during team meetings, there were signs of non-verbal disagreement in the form of eye-rolling, shaking heads, and looking around the room to gauge reactions of others in case of disagreement. This might have negative effects on relational security as it could be that important information or views are not taken into account in deliberating on risk and necessary actions. The results underscore that although a team has agreement on shared responsibility and the responsibility of each participant to speak out during team meetings, bringing it to practice is complicated. It could be argued that team guidance is needed to improve shared learning and decision making.

A promising tool to assist professionals working in forensic care for inner dialogue and team reflection could be See Think Act (STA). The STA offers structured guidance for clinical teams that encourages relational security by the maintenance of security and vigilance while promoting patient recovery (Drennan et al., 2012). The handbook developed by the department of health (2010) in the UK, can be considered as a starting point in helping professionals to explore and fulfill their role in relational security. In order to integrate the STA method in daily practice, professionals need training, encouragement, support and robust strategic leadership with an emphasis on reflective practice (Markham, 2022). Organizations need to educate and train their staff, have a structure in place that supports ongoing skill development in delivering relational security care, and have clear and effective systems for communication and handover within and between staff teams (Royal College of Psychiatrists, 2015).

Efforts described above, aimed at increasing (relational)security, professional functioning, treatment responsiveness, and well-being of staff and patients, are deemed to be most successful in case they are part of an integral organizational strategy. For instance, as reflexivity in teams on daily practice is considered an important aspect of the work, this should relate to the general vision of the organization and it should fit the organizational culture. Hence, it has implications

for the application strategies and procedures for staff, annual appraisals, role behavior in terms of leadership, staff education and training and staff support. It should also be translated into how work is actually organized including time and space for (guided) individual- and team reflection. This integrated approach also applies to other themes such as patient participation. Hence, another point that emerged from the data of Haines and colleagues (2018) was that more work is needed involving the patient's voice and perspective in decision making around care planning. As mentioned before, it has been argued that in secure and forensic mental health settings the humanistic values that underpin nursing can be in conflict with actual practice. The dual role that staff members have in therapy and control, combined with the need for personal safety for professionals, might result in adapting more custodial and restrictive than care or recovery related attitudes and practice (Jacob et al, 2008, Hammarström et al., 2019; Senneseth et al., 2022). In recent years a transition has started towards more recovery oriented forensic care. Advocating least-restrictive practice, empowerment, hope and collaborative decision-making (O'Connor et al., 2021), supporting and developing elements such as connectedness, hope and optimism about the future, identity, meaning in life, empowerment and safety and security (Senneseth et al., 2022). In order to enable recovery, relationships and environments that provide hope, empowerment, choices, and opportunities for fulfilling an individual's potential are required (Office of Mental Health and Substance Abuse Services, 2005). However, implementing recovery principles in conditions of legal coercion such as forensic clinical practice, remains a challenge (Drennan et al., 2012; O'Connor et al., 2021; Senneseth et al., 2022). Relational security could support forensic mental health professionals in finding balance in managing safety and risks and patients' recovery and care (Markham, 2022).

## Future research

With regard to measuring social ward climate the EssenCES and the GCI-r are instruments that measure partially overlapping aspects. As the instruments also differ in several ways, further development and validation is needed. Research endeavors could focus on finding an appropriate definition of social ward climate and determining which elements are important within adult forensic psychiatric setting. Interesting directions are for example the role of the concept of repression. Also, the role of more static factors that might affect social ward climate like the physical structure of a forensic psychiatric ward are interesting to take into account. The effects of the perspective (individual versus group) required for answering items in instruments measuring social ward climate also needs to be examined carefully to determine which approach is more suitable for measuring this concept.

For research and clinical use the results presented in this thesis are most favourable for using the Essences as an instrument to monitor aspects of social ward climate in samples similar to the one used in the current studies. The EssenCES will invite individuals to evaluate topics like safety, support, and cohesion on a group level, taking other group members into account in their evaluation. Most importantly, the EssenCES can be used to measure how social ward climate is perceived by both staff members and patients. However, there are also directions for future research related to the EssenCES. There are studies suggesting that revision and retesting of some items of the scale could improve the instrument (Howells et al., 2009; Milsom et al., 2014; Tomlin and Tonkin, 2022). Furthermore, item 6 (*There are some really aggressive patients on this ward*) and item 3 (*Really threatening situations can occur here*) of the experienced safety scale sometimes generate concern when monitoring social ward climate in clinical practice. Hence, for some wards, for instance during the assessment phase, these items always result in a relatively low score on experienced safety. Staff however argue that there are indeed aggressive patients and that threatening situations can occur but that they do not feel unsafe. Also, the EssenCES does not include elements that are also deemed to be important for social ward climate such as possibilities for growth and lack of repression. In our study presented in chapter 2 we found that the therapeutic hold scale was strongly related to the growth scale of the GCI-r. It is plausible that focusing on facilitation of learning and preparation for a meaningful life both within and outside the closed facility is an important element of therapeutic holding. As the presence of repression and restrictiveness and the possible negative consequences on therapeutic environments, interpersonal relationships, well-being and treatment effects are noted in the literature, this concept seems important to take into account when studying social ward climate. Therefore, more work is needed on patients' experiences of restrictiveness and its consequences (Tomlin et al., 2019) and the role of this concept in social ward climate.

In general, replications of the studies presented within this thesis, with different samples are recommended. For instance to test the original factor structure of the GCI-r and the STA scale within Dutch forensic populations. Also, future studies would benefit from a higher response rate. Hence, it could be the case that individuals that did not participate in the assessment have had other views on social ward climate than individuals that did participate. As the response rate per unit was relatively low within our studies it was not possible to generate 'mean' social climate scores or relational security scores for the units in order to explore variation on group level. In future research it would be interesting to compare instruments on their ability to detect variation in social climate between units, therefore a higher response rate per ward is needed.

Research efforts aimed at disentangling the specific factors playing a role in the differences in perceptions between patients and staff in for instance social ward climate are also encouraged. It could be beneficial to administer a measure of socially desirable responding or a measure of attribution bias or locus of control alongside the EssenCES. Furthermore, qualitative research such as in-depth interviews with patients and staff, might help getting sight of the underlying processes. However, these kinds of actions assume that people are capable of introspection, and that they are motivated and willing to report their attitudes and beliefs accurately. Assuming that this is not always the case, another interesting direction might be found in more implicit measures. Future research could focus on implicit associations or automatic responses staff members might have towards specific patients or their attitude towards several treatment orientations. There are some indications that implicit attitudes are related to nursing behavior. Hence, medical visit communication between nurses and patients and patients' perceptions of care, seem to be associated with both implicit attitudes about race and stereotyping (Cooper et al., 2012). Furthermore, implicit prejudice is found to mediate the relationship between experiences of job stress and intention to change jobs among drug and alcohol nurses (von Hippel et al., 2008).

With regard to gaining more insight in the role of patient characteristics in the perception of social ward climate, our study only entails a couple of patient characteristics. Other characteristics that would be worth adding in future research are for instance, type of offence, treatment engagement, and amount of leave taking. It would be interesting to study whether the relationship between patient characteristics and social ward climate is a result of the environment that differs as a function of patient needs, or whether the explanation lies more within the perception of the patient. Therefore, for future research it would be desirable to incorporate measures giving more insight into patients' (security) needs and the therapeutic contact between staff and patients, for instance the frequency, perceived quality, and duration of the time spent with each other.

Also, future research should take comorbidity into account in order to get a better view on the relationship between diagnosis and for instance interpersonal style of patients. It could be that the presence of additional disorders affect interpersonal functioning. It would be interesting to take, for instance, psychopathy into account as there are indications that patients with schizophrenia and high levels of comorbid psychopathy have a distinctive interpersonal (i.e., more coercive) style compared to patients with schizophrenia without comorbid psychopathy (Fullam and Dolan, 2006). Flexibility in patient's interpersonal transactions is another factor that may be interesting to incorporate in future research. Hence, individual patients will differ regarding the intensity and flexibility of their interpersonal behavioral style. Kiesler and Schmidt (2006) highlighted that theoretically, effective

interventions should be able to decrease the rigidity of patients' interpersonal transactions. Hence, it would be interesting to study the flexibility of interpersonal behavior of patients.

With regard to gaining more insight in the role of staff characteristics on their perception of patients' affiliation and control other characteristics besides age, level of experience and gender need to be included in future research. For instance personality or attitude of staff members. The attitude of staff members can be related to patient characteristics described before like diagnosis, cultural background or type of offence. For instance, staff's conceptions may play a role in stigmatization of patients with a substance use disorder, or in attitudes towards paedophilic patients or in the way of coping with aggression problems (Tremelin and Beazley, 2022). There are studies indicating that attitudes of staff members are related to healthcare delivery (van Boekel et al., 2013; Jahnke, 2018; Verhaeghe et al., 2014). As interaction is a bi-directional process, the interpersonal style and the flexibility of the style of staff members is also an important factor to take into account (Watson et al., 2017).

Future research could try to gain more insight in display rules that are present in teams and their relationship with the patient population, emotional labour and emotional exhaustion. In this line of research it would be interesting to study the concept of emotional labour on both an individual level and a team level. Looking at emotional labour from a team perspective, opens the door for including concepts as emotional contagion. Hence, there are indications that human service professionals 'catch' the feelings of emotional exhaustion, cynical attitude or diminished sense of personal accomplishment, from their team members (Bakker et al., 2003a, 2005; Westman & Bakker, 2008). Team factors such as team climate are however a relatively understudied theme in high secure forensic care.

Bakker and Heuven (2006), state that reflection and performance feedback might reduce the impact of emotional dissonance on emotional well-being of professionals. We encourage future research on this topic. Seeing emotion regulation as a tool to reach work related goals, might reduce the negative effects of surface acting on emotional exhaustion. Hence, there are studies suggesting that fulfilling emotional demands by using emotional labour strategies might generate feelings of competence and work satisfaction (Brotheridge and Grandey, 2002; Kinman et al., 2011). Related to this, Ashforth and Humphrey (1993) refer to the social identity theory to outline that it might be that individuals who strongly identify with their professional role, are more at ease in conforming to organizational display rules and thus experience less emotional dissonance. The recent work of Hammarström and colleagues (2022) suggest that self-reflection and inner dialogue are important in order to be genuine towards a patient creating alliance instead of taking a distant role to protect oneself from harm. Dealing with personal vulnerability as a professional

can help being genuine and authentic which is beneficial in the relationships with colleagues and patients and helps being open and sensitive to patients and their needs. Taken together, we suggest that future research could explore concepts as role clarity, vulnerability, performance feedback and team decision making in relationship with emotional labour and emotional exhaustion among forensic staff members.

Although relational security is considered an essential form of security in forensic psychiatric care, there is a need for studies into the actual impact of relational security on for instance, risk incidents on the ward, treatment outcomes and patient satisfaction. There are no results yet that underwrite the potential beneficial effects of relational security. Future research endeavors should be aimed at getting a clearer picture of relational security in forensic psychiatric care and how it can be successfully implemented and monitored in daily practice. Therefore, developing an instrument for measuring relational security remains important. We would like to address some points that could be interesting for further development of the STA scale. For instance looking at the possibility to encompass the overarching elements of the STA model See, Think and Act into the measure. Relational security as presented in the STA guideline describes the importance of observations, being vigilant, noticing even the smallest changes in behavior, feelings or the surrounding (See). The importance of reflection, using insight and knowledge in interpreting or giving meaning to the observations (Think). And the importance of taking appropriate action that fits the situation, to prevent incidents from happening (Act). It would be interesting to study the possibilities of developing the instrument in such a way that it could give both insight into the capacities of a team on the content of relational security themes such as boundary management and patient focus, and also insight into the capacities of a team regarding the dynamic process of observing, reflecting and acting. These insights could subsequently give direction to further team development regarding relational security.

Also, it would be worthwhile to study the relationship between relational security and the concept of 'forensic vigilance'. Forensic vigilance is recently defined and seems to be conceptually related to relational security. Clercx et al. (2021) give the following definition of forensic vigilance: "*Forensic vigilance is anticipating on possible escalation of a situation before it happens by actively observing your surroundings and colleagues, and knowing when an observation requires action. Forensic vigilance requires awareness of the patient(s), their mental disorder, criminal history, and awareness of the context of a forensic setting. It is being able to recognize even subtle signs of possible escalation, the capacity to communicate with colleagues about observations, doubt, uncertainty or gut feelings, and the willingness to act when necessary*" (p. 14). It is hypothesized that staff members with high levels of forensic vigilance can adapt more easily to patients' risks and



needs are more prepared for setting boundaries. It is expected that forensic vigilance could reduce risks of institutional violence, absconds and relapses during treatment as situations will be managed by staff members before they fully develop (Clerx et al., 2021). Recently a scale has been developed, the Forensic Vigilance Estimate (FVE; Clerx et al., 2022) that could be used to study the relationship of forensic vigilance with concepts such as relational security. It would be interesting to incorporate this instrument in research on relational security and further development of instruments measuring that concept.

Recently, in the Netherlands a centre of expertise 'Forensic Craftmanship' (Lectoraat Vakmanshap Forensische Zorg) has been set up (van der Horst, 2021). Research facilitated within this centre of expertise will focus on responsivity aspects related to treatment in forensic care, on coping mechanisms of professionals in dealing adequately with their job demands, and operationalizing the effective elements in creating a social ward climate (van der Horst, 2021). Results from the studies need to become incorporated in clinical practice and education. Therefore the centre will enable connection between education, research and practice in order to promote craftsmanship in (future) forensic professionals. Another recent effort to stimulate quality improvement in forensic care in the Netherlands, is the development of an overarching quality framework. This quality framework was developed by several stakeholders in the forensic field commissioned by the Ministry of Justice and Safety in the Netherlands. The framework includes five focus points: 1.) safety and person oriented care 2.) forensic craftsmanship 3.) organization of care 4.) co-operation and 5.) informing on results (Bults et al., 2022). Forensic facilities need to draw up specific plans for the upcoming years describing how they are going to work on improvement on the five quality aspects. These recent developments are important steps that could contribute to a theoretical and practical framework that describes and facilitates high quality forensic psychiatric care.

## General conclusions

All studies presented in this thesis underline the importance of awareness of the presence, meaning and potential effects of certain concepts and processes that play a role in establishing a social ward climate and delivering relational security care. For instance, when discrepancies between staff and patients' views on social ward climate become evident through measurement, reflection can take place on the origin, meaning, desirability and effects of these differences. Reflection can subsequently lead to change, by changes in context or behavior. Also, the finding that patient characteristics are related to their perception of social

ward climate underlines the importance to create awareness, stimulate reflection and action aimed at using this kind of patient information in daily work. Replication is needed in broader samples and more characteristics could be taken into account. Nevertheless, these insights could be useful in arranging the patient mix, in educating staff and in adjusting physical and relational aspects of a ward to patients' needs. The results presented in this thesis also emphasizes the need for elevating awareness among staff of the emotions they experience during their work and encourage them to verbalize and reflect on these emotions and how they manage them during challenging interactions. How staff members manage the emotions that they experience during their work is important for their emotional well-being and work performance.

Measurements of important concepts (like social ward climate) or processes (like emotional labour) can create awareness in daily practice. In order to measure something, you have to have a clear definition and operationalization. The studies in this thesis accentuate the need for instruments that can be used in clinical practice to make certain concepts and processes visible. Having insight in how things are at the moment can open the door for reflection. Where do these results stem from, what do they mean? Are these results in line with our organizational or team vision, mission or goals? What do we need to continue what do we need to change? Subsequently, these reflections need to be taken into action, how do we use the insights and the outcomes of our reflection in daily practice, how do we translate it into behavior? The relationship found between relational security and team reflexivity seems to underline the importance of facilitating reflective practice for professionals working in high secure forensic psychiatric care. See Think Act can be seen as a promising step towards giving professionals a tool to enable reflective practice aimed at delivering relational safe care.

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# APPENDIX


Nederlandse samenvatting

Description of research data-management


Curriculum Vitae

Dankwoord


Donders Graduate School

 *Paradox:* Lotte Boon


 *A little less conversation:* Zoute Hering

 *En nu?!*: Zoute Hering

 *De gevallen engel:* Patient O.

 *Reflectie na een sessie met een patiënt:* Thijs de Moor

 *Reflectie na een sessie met een patiënt:* Thijs de Moor

 *Relationele Veiligheid: Met ogen en hart open de wereld bezien en de weg vinden om de bubbels te doorbreken:* Alexandra Klopper

## Dutch summary (Nederlandse samenvatting)

Dit proefschrift bevat een verzameling van vijf onderzoeksartikelen. De onderzoeken betreffen thema's die een rol spelen in het werk van professionals die werkzaam zijn in de hoog beveiligde forensisch psychiatrische zorg. Enkele karakteristieken van professionals en patiënten, de emotionele reacties en coping strategieën van medewerkers in interactie met patiënten zijn onderzocht aangezien deze een belangrijke rol lijken te spelen in het sociale leefklimaat binnen instellingen, de relationele veiligheid en het welzijn van medewerkers en patiënten. Tezamen vergroten deze studies het inzicht in het complexe werk van professionals in deze werksetting. De resultaten geven richting aan vervolgonderzoek en bieden aanknopingspunten voor verbeteringen in de dagelijkse praktijk.

In **hoofdstuk 2** zijn twee instrumenten, die leefklimaat binnen de forensische zorg in kaart kunnen brengen, met elkaar vergeleken en onderzocht op betrouwbaarheid en validiteit. De interne consistentie van de (sub)schalen van beide instrumenten was goed. De originele factorstructuur van de EssenCES werd bevestigd. De resultaten laten zowel overlap als verschillen zien tussen de instrumenten. Zo was er duidelijke samenhang tussen enkele subschalen van de verschillende instrumenten, maar bevatte de GCI-r ook andere schalen zoals repressie die interessant kunnen zijn voor onderzoek naar sociaal leefklimaat. De uitkomsten nodigen uit tot doorontwikkeling van de meetinstrumenten en verder onderzoek. Daarnaast kunnen de resultaten in de klinische praktijk worden gebruikt in de keuze voor een geschikt monitoringsinstrument.

In **hoofdstuk 3** is een studie beschreven waarin de perceptie van het sociale leefklimaat van patiënten en professionals is vergeleken en de samenhang tussen patiëntkenmerken en de perceptie van leefklimaat is onderzocht. De resultaten onderstrepen het belang om het leefklimaat zowel bij staf als bij patiënten in kaart te brengen, aangezien de perceptie tussen de groepen op diverse aspecten verschilt. Therapeutische holding wordt door staf hoger beoordeeld dan door patiënten, terwijl cohesie in de patiëntengroep en veiligheidsbeleving hoger scoren onder patiënten vergeleken met staf. Daarnaast laat het onderzoek zien dat de perceptie van leefklimaat samenhangt met patiëntkarakteristieken zoals leeftijd, risicotaxatie en psychopathie. De antisociale factor van de PCL-R was een negatieve voorspeller voor de ervaren cohesie in de patiëntengroep. Risicofactoren uit het verleden, gemeten aan de hand van de historische subschaal van de HCR-20 was een positieve voorspeller voor de ervaren cohesie in de patiëntengroep. De historische subschaal van de HCR-20 was tevens een positieve voorspeller van ervaren veiligheid van patiënten. De leeftijd van patiënten en de interpersoonlijke factor van de PCL-R waren positieve voorspellers van therapeutische holding ervaren door patiënten, terwijl de huidige risico's, gemeten met de klinische subschaal



van de HCR-20 negatief bijdroegen aan de voorspelling. Deze informatie zou kunnen worden meegenomen in de vormgeving van het sociale leefklimaat en verhoging van responsiviteit.

Interactie tussen staf en patiënten wordt gezien als een van de belangrijkste aspecten van het sociaal leefklimaat. Ondanks het belang, is het vormgeven van deze interactie in de dagelijkse praktijk een ingewikkelde klus. **Hoofdstuk 4** betreft een studie naar het interpersoonlijke appél van patiënten in interactie met staf. Tevens is in dit hoofdstuk gekeken naar de relatie tussen interpersoonlijke stijl van patiënten en hun ervaring van het sociaal leefklimaat en hun tevredenheid over de dagelijkse begeleiding. Patiënten met een persoonlijkheidsstoornis werden als dominanter ervaren door staf in vergelijking met patiënten met schizofrenie of een psychotische- of schizo-affectieve stoornis. Wanneer we kijken naar affiliatie dan zijn er geen verschillen zichtbaar tussen de diagnostische groepen. Recente problemen op het gebied van behandelresponsiviteit bleek een negatieve voorspeller voor affiliatie en de leeftijd van patiënten een positieve voorspeller. Ontwrichtend gedrag van patiënten was een positieve voorspeller van controle of dominantie. Bovendien waren patiënten die door staf als dominanter werden ervaren minder tevreden over de veiligheid op de afdeling. De mate van affiliatie vertoonde positieve samenhang met de tevredenheid over de dagelijkse begeleiding. In het algemeen kan worden geconcludeerd dat hoe staf de interpersoonlijke stijl van patiënten ervaart ofwel wat patiënten bij hen oproepen, patiënt-gerelateerde informatie bevat die relevant kan zijn voor staf om te gebruiken in het dagelijks werk. In **hoofdstuk 5** is het samenspel tussen emotionele taakeisen, copingstrategieën en emotionele uitputting bij medewerkers onderzocht. De resultaten laten zien dat medewerkers in het dagelijks werk zowel 'surface acting' als 'deep acting' gebruiken. Surface acting kan worden gezien als het aan de oppervlakte aanpassen van emotie-expressie, het spelen van een gewenste emotie. Bij deep acting wordt getracht de innerlijk ervaren emotie aan te passen. Surface acting bleek positieve samenhang te vertonen met emotionele taakeisen. Bovendien bleek surface acting een sterke voorspeller van emotionele uitputting. De uitkomsten geven aanleiding om aandacht te besteden aan de ervaren emoties en te reflecteren op de coping strategieën die worden gebruikt, ter verbetering van het welzijn en de uitvoer van de professionele rol van medewerkers.

Er wordt gezegd dat binnen de forensische zorg een sterke nadruk op reflectie nodig is om (relationele) veiligheid in het behandelproces te verbeteren. Onderzoek naar relationele veiligheid is van belang en vraagt om betrouwbare en valide instrumenten om dit concept te meten. De studie die staat beschreven in **hoofdstuk 6** gaat in op de psychometrische eigenschappen van de Nederlandse versie van een instrument dat ontwikkeld is om relationele veiligheid in kaart te brengen, de See Think Act (STA) schaal. De interne consistentie van de algehele

STA schaal was goed. De interne consistentie van de subschalen was lager dan wat gevonden is in eerder onderzoek met de Engelse en Chinese versie van het instrument. De factor structuur van de originele versie werd niet bevestigd in deze studie. De test-hertest betrouwbaarheid was voldoende maar verschilde per schaal. Wat betreft de validiteit van het instrument waren de resultaten veelbelovend, gezien de positieve relatie tussen relationele veiligheid en aspecten van leefklimaat en team reflexiviteit. De uitkomsten van de studie laten zien dat de STA schaal een startpunt kan zijn voor doorontwikkeling van instrumentarium op het gebied van relationele veiligheid. Doorontwikkeling is van belang om in de toekomst dit relevante concept in kaart te brengen en de opbrengsten van interventies op het gebied van relationele veiligheid te kunnen monitoren. De relatie tussen relationele veiligheid en team reflexiviteit onderstreept het belang van het faciliteren van reflectie in dit complexe werkveld.

Wat kunnen we opmaken uit de studies die beschreven staan in dit proefschrift? Om zicht te krijgen op hoe het sociaal leefklimaat door patiënten en medewerkers wordt vormgegeven en ervaren is het van belang om dit in kaart te brengen. Door het uitvoeren van metingen in de klinische praktijk kan men zicht krijgen op hoe het leefklimaat binnen een afdeling wordt ervaren. Het monitoren van de ervaringen bij zowel staf als patiënten is van belang aangezien er verschillen zichtbaar zijn in hoe het sociaal leefklimaat wordt ervaren. Medewerkers kunnen niet zomaar vertrouwen op hun eigen ervaringen als indicator voor hoe het sociale klimaat wordt ervaren door patiënten. Om de perceptie van patiënten mee te kunnen nemen in de vormgeving van het klimaat dienen medewerkers zich bewust te worden van het patiëntperspectief. Om dit proces in de klinische praktijk vorm te kunnen geven zijn gebruiksvriendelijke, valide en betrouwbare instrumenten belangrijk. Wanneer er in metingen discrepanties naar voren komen tussen de beleving van medewerkers en patiënten, kan er reflectie plaatsvinden op de oorsprong, betekenis, wenselijkheid en effecten van de verschillen. Reflectie kan vervolgens leiden tot verandering in context en gedrag. De bevinding dat patiëntkarakteristieken samenhang vertonen met de perceptie van leefklimaat, onderstreept het belang van bewustwording, reflectie en acties gericht op dit soort informatie en de plek daarvan in het dagelijks werk. Uiteraard is replicatie van het onderzoek van belang en wordt uitbreiding van onderzoek met andere (patiënt)kenmerken aangemoedigd. Desalniettemin kunnen de inzichten worden gebruikt in het samenstellen van de patiëntenmix binnen een instelling, het opleiden van medewerkers en het aanpassen van fysieke en relationele aspecten van een afdeling, toegespitst op de behoeften van patiënten. De resultaten van de onderzoeken in dit proefschrift benadrukken tevens het belang van bewustwording en reflectie op emoties die worden opgeroepen in het werk en hoe er met die emoties wordt omgegaan, aangezien dit samenhangt met

emotioneel welbevinden van medewerkers. Om relevante concepten zoals leefklimaat of processen zoals coping te kunnen meten zijn duidelijke definities en operationalizaties van belang. De onderzoeken die beschreven staan in dit proefschrift laten zien dat (door)ontwikkeling van instrumenten voor de klinische praktijk nodig is om concepten en processen zichtbaar te maken. Zicht op hoe de zaken ervoor staan, of ervaren worden op dit moment, opent de deur voor reflectie. Waar komen de resultaten vandaan? Hoe duiden we het? Wat is de betekenis? Zijn de resultaten in lijn met de visie, missie en doelen van de organisatie, de afdeling, ons team? Waar moeten we mee doorgaan, wat moeten we veranderen? Vervolgens moet reflectie leiden tot actie, hoe gebruiken we deze inzichten, hoe vertalen we het naar handelen?

Het verzamelen, delen en gebruiken van relevante kennis over de patiënt, jezelf als professional en de omgeving waarin je werkt zijn belangrijke ingrediënten van relationele veiligheid. Professionals dienen hun kennis, observaties, assumpties, gedachten en gevoelens te delen. Doormiddel van gezamenlijke reflectie en gedeelde beslissingsprocessen kan zorg en beveiliging zo worden vormgegeven dat het aansluit bij de risico's en behoeften van patiënten. De relatie die gevonden is tussen relationele veiligheid en team reflexiviteit moedigt aan om reflectie in de forensisch psychiatrische zorg verder te faciliteren, te onderzoeken en vorm te geven. See Think Act, kan worden gezien als een veelbelovend handvat dat multidisciplinaire teams kan helpen om door middel van reflectie en dialoog relationele veiligheid vorm te geven met oog voor veiligheid en herstel.

## Description of research data-management

### Ethics and privacy

Research data presented in this thesis are obtained at the Pompestichting, a high secure forensic psychiatric institution in the Netherlands. The Pompestichting is part of the Pro Persona Holding.

Data included self-report questionnaires (filled out by staff and patients) and patient information, extracted from clinical files. Based on an evaluation of ethical criteria (no negative consequences, risks or harm were associated with participation, participation was voluntary, participation was assumed to require minimal effort from the participants), the study protocol was not required to be submitted to an external medical ethic committee. Instead, the protocol was evaluated and approved by the internal review board (Scientific Committee) of the Pompestichting. The study was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013), the Radboud UMC research codes and guidelines of the Pompestichting. Informed consent was obtained from research participants. The privacy of the participants is protected by pseudonymising the data and secure data storage.

### Data collection and storage

Raw and processed data are stored digitally and securely on a server of the research department of the Pompestichting. The server is supported by the Information and Communications Technology (ICT) of Pro-Persona and backed up on a regular basis. The stored data files are accessible by the associated scientific research staff members. Raw data in the form of filled out questionnaires on paper, are stored in the internal archive of the Pompestichting. Informed consents were obtained on paper and the forms are stored separately from the data in the internal archive of the Pompestichting. The privacy of the participants is protected by pseudonymising the data. Participants received a participant number, the key file (matching name and participant number) is stored apart from the data on the server of the research department of the Pompestichting.

### Availability of the data

The Pompestichting is the rights holder of the research data. The data will be archived for 15 years after termination of the study. The data of the current studies are stored in long-lived file formats. The Pompestichting supports the possibilities for sharing anonymous data for re-use or replication purposes, possibilities can be explored on request.

## Curriculum Vitae

Meike Godelieve de Vries was born on the 29th of November 1985 in Nijmegen, the Netherlands. After finishing high school (VWO) at the Montessori College in Nijmegen (2005), she studied social psychology and obtained her master's degree at the Radboud University in Nijmegen in 2009. After obtaining her second master: Research Master Behavioral Science (2011) she started as a scientific researcher at the Pompestichting. Within the Pompestichting, she works in a research team that performs research and projects aimed at supporting and improving clinical practice in (high) secure forensic care. Her work at the Pompestichting aims to replicate, deepen and broaden scientific knowledge on forensic psychiatry and to translate findings from the scientific field into clinical practice. Nowadays, besides her role as senior researcher Meike also supports the Pompestichting and other forensic facilities in enhancing relational security in their care processes.

## List of publications

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## Dankwoord

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Ik ben blij dat ik de kans heb gekregen om een aantal centrale concepten in het dagelijks werk van de forensisch professional te onderzoeken en zo meer zicht te krijgen op het bijzondere werkveld. Forensische zorg is complex, er spelen diverse belangen, verantwoordelijkheden, tegenstellingen en nuances. Het leren kennen van dit werkveld heeft tijd nodig. Als onderzoeker heb ik me leren bewegen in deze context en manieren gevonden om onderzoek en praktijk te verbinden. Erik Bulten, dank voor de zeer betrokken en fijne begeleiding in dit proces. De gesprekken met jou over onderzoek, behandeling, ontwikkeling, beleid en alle boeiende thema's die spelen binnen de forensische zorg, heb ik als inspirerend, ondersteunend en richtinggevend ervaren. Daarnaast krijg je het als leidinggevende van de onderzoeksafdeling steeds voor elkaar om een super leuk team neer te zetten.

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In de loop der jaren kreeg mijn onderzoek, door contact met medewerkers en patiënten, steeds meer richting. Een belangrijke factor in dit proces is ook de samenwerking met personeelsbegeleiding geweest. Het gaf mij een inkijkje in het waardevolle werk dat personeelsbegeleiding verzet, dat onmisbaar is in een setting als deze. De raakvlakken tussen de waarnemingen vanuit jullie en mijn onderzoek, gaven mij vertrouwen en inspiratie. Onze samenwerking in teams op het gebied van leefklimaat en relationele veiligheid hebben een belangrijke rol gespeeld in het verdere verloop en de invulling van mijn werk. Wim, dank voor de wijze lessen zo vlak voor jouw pensioen, een basis waar ik op voortbouw. Annet, dank voor alles wat ik van jou heb mogen leren afgelopen jaren, het heeft mij persoonlijk en mijn (onderzoeks)werk verrijkt.

Het onderzoek naar leefklimaat wakkerde het werken met de See Think Act (STA) methodiek binnen onze instelling aan. I would like to thank Elizabeth Allen, the author of the See Think Act guideline for her generosity in sharing her knowledge and work on relational security. Door de inzet van velen hebben we binnen onze instelling prachtige stappen kunnen zetten naar het meer methodisch vormgeven van relationele veiligheid. Ik ben vele collega's dankbaar voor de rol die zij hierin spelen en hebben gespeeld. Een paar mensen wil ik in het bijzonder noemen: Annet, Christina, Han, Erik, Nicole, Nel, Leonie, Henk, Irene, Menno, dank voor al het werk dat jullie daar in stoppen gemotiveerd, sensitief, kritisch en creatief. Nog een extra woordje van dank voor Han, omdat je mij op het juiste moment aanzette tot het afmaken van dit proefschrift.

Na het uitvoeren van diverse (onderzoeks)projecten en het schrijven van een aantal artikelen kreeg het idee om het tot dusver geschreven werk en toekomstige onderzoeken te bundelen tot een proefschrift meer vorm. Robert-Jan Verkes dank voor de rol die je hierin vervuld hebt. Dank voor het meedenken, de prettige overlegmomenten en voor de heldere feedback waar mijn stukken op vooruit gingen.

Hier ligt het dan in gedrukte vorm, een proefschrift dat naast teksten ook prachtig beeldend werk bevat. Ik wil graag Alexandra, Lotte en Thijs en twee patiënten bedanken voor het vertalen van een aantal centrale concepten uit dit proefschrift (interactie, leefklimaat, reflectie, emotieregulatie, perspectief en relationele veiligheid) naar hun persoonlijke beelden. De illustraties ondersteunen wat voor mij in dit proefschrift doorklinkt: de diversiteit in perspectieven en ervaringen, de waarde deze zichtbaar te maken en de dialoog er over aan te gaan.

## Donders Graduate School for Cognitive Neuroscience

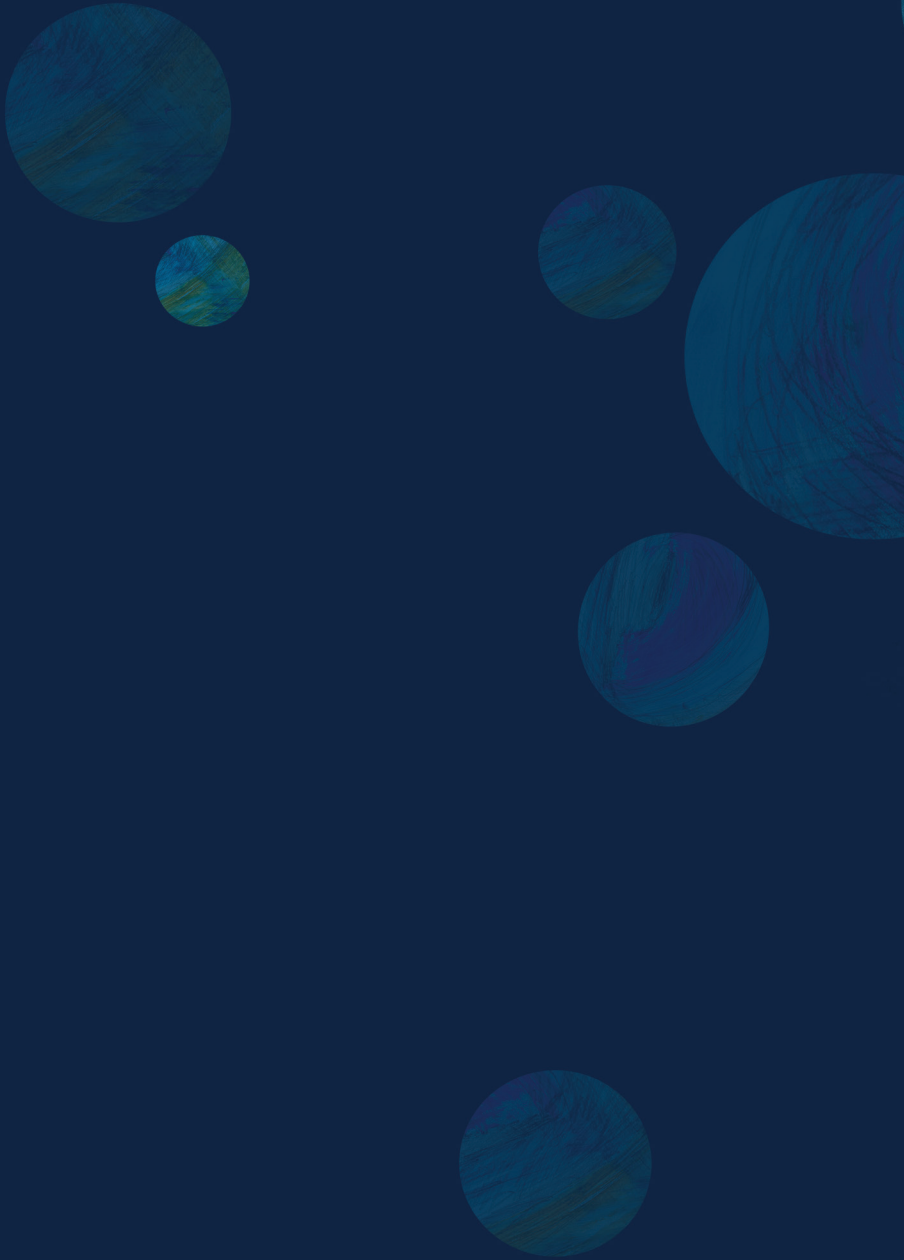
For a successful research Institute, it is vital to train the next generation of young scientists. To achieve this goal, the Donders Institute for Brain, Cognition and Behaviour established the Donders Graduate School for Cognitive Neuroscience (DGCN), which was officially recognised as a national graduate school in 2009. The Graduate School covers training at both Master's and PhD level and provides an excellent educational context fully aligned with the research programme of the Donders Institute.

The school successfully attracts highly talented national and international students in biology, physics, psycholinguistics, psychology, behavioral science, medicine and related disciplines. Selective admission and assessment centers guarantee the enrolment of the best and most motivated students.

The DGCN tracks the career of PhD graduates carefully. More than 50% of PhD alumni show a continuation in academia with postdoc positions at top institutes worldwide, e.g. Stanford University, University of Oxford, University of Cambridge, UCL London, MPI Leipzig, Hanyang University in South Korea, NTNU Norway, University of Illinois, North Western University, Northeastern University in Boston, ETH Zürich, University of Vienna etc.. Positions outside academia spread among the following sectors: specialists in a medical environment, mainly in genetics, geriatrics, psychiatry and neurology. Specialists in a psychological environment, e.g. as specialist in neuropsychology, psychological diagnostics or therapy. Positions in higher education as coordinators or lecturers. A smaller percentage enters business as research consultants, analysts or head of research and development. Fewer graduates stay in a research environment as lab coordinators, technical support or policy advisors. Upcoming possibilities are positions in the IT sector and management position in pharmaceutical industry. In general, the PhDs graduates almost invariably continue with high-quality positions that play an important role in our knowledge economy.

For more information on the DGCN as well as past and upcoming defenses please visit: <http://www.ru.nl/donders/graduate-school/phd/>





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