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Esther F.J.C. van Ginneken, Anouk Q. Bosma, Amanda Pasma & Hanneke Palmen

Unhappy Staff, Unhappy Prisoners? The Relation between Work Climate and Prison Climate in Dutch Prisons[1]

Interactions between prison officers and incarcerated individuals are considered very important for maintaining safety, order, and promoting well-being in prisons. There are conflicting findings regarding the relationship between prison officers' work climate and prisoners' perceptions of prison climate. The aim of this paper is to explore in further detail how different aspects of work climate are related to incarcerated individuals' perceptions of prison climate.
This is investigated using data from the Life in Custody Study, which is a nation-wide survey among adults incarcerated in the Netherlands. Data were collected in 2017, and included survey responses from 4,538 incarcerated individuals, as well as administrative data. Additionally, data were obtained from a survey simultaneously conducted (by a third party) among employees about work attitudes. A selection was made to include responses from correctional staff, and to exclude units with a response rate lower than 40 % or less than 5 respondents. This resulted in 1,508 correctional officers across 135 units. A multilevel analysis was conducted with prison climate dimensions as dependent variables on the individual and unit level.
In line with our expectations, workload was negatively associated with some dimensions of prison climate, while co-worker support showed positive associations. The results from this study show that staff and prisoner perceptions are linked, which means that stressors on either prisoners or staff are likely to have an impact on both. Therefore, it is important to invest in a positive work and prison climate, which is likely to benefit prison staff and prisoners.

Keywords: prison climate, work climate, correctional officers, job satisfaction, workload, co-worker support

Unzufriedenes Personal, unzufriedene Gefangene? Die Beziehung zwischen Arbeitsklima und Gefängnisklima in niederländischen Gefängnissen

Interaktionen zwischen Bediensteten und Gefangenen gelten als sehr wichtig für die Aufrechterhaltung von Sicherheit, Ordnung und die Förderung des subjektiven Wohlbefindens in Gefängnissen. Es gibt widersprüchliche Erkenntnisse über die Beziehung zwischen dem Arbeitsklima der Bediensteten und der Wahrnehmung des Gefängnisklimas durch die Gefangenen. Ziel dieses Textes ist es zu untersuchen, wie verschiedene Aspekte des Arbeitsklimas mit der Wahrnehmung des Gefängnisklimas durch die Gefangenen zusammenhängen. Dies wird anhand von Daten aus der „Life in Custody Study" untersucht,

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einer landesweiten Befragung von erwachsenen Gefangenen in den Niederlanden. Die Daten wurden 2017 erhoben und umfassten die Antworten von 4 538 inhaftierten Personen sowie administrative Daten. Zusätzlich wurden Daten aus einer gleichzeitig (von anderer Seite) unter den Beschäftigten durchgeführten Befragung über die Einstellung zur Arbeit einbezogen. Eingeschlossen sind die Antworten des Strafvollzugspersonals, ausgeschlossen sind Bereiche mit einer Rücklaufquote von weniger als 40 % oder weniger als 5 Befragten. Das Ergebnis waren 1 508 Bedienstete in 135 Einheiten. Es wurde eine Mehrebenenanalyse durchgeführt, bei der die Dimensionen des Gefängnisklimas als abhängige Variablen auf der Ebene des Einzelnen und der Einheiten berücksichtigt wurden. Entsprechend unseren Erwartungen war die Arbeitsbelastung mit manchen Dimensionen des Gefängnisklimas negativ assoziiert, während die Unterstützung der Mitarbeiter positive Zusammenhänge zeigte. Die Ergebnisse verdeutlichen, dass die Wahrnehmung des Personals und der Gefangenen verbunden ist, folglich haben Stressfaktoren entweder bei den Gefangenen oder beim Personal wahrscheinlich Auswirkungen auf beide. Daher ist es wichtig, in ein positives Arbeits- und Haftklima zu investieren, was Gefängnispersonal und Häftlingen zugute kommt.

Schlagwörter: Gefängnisklima; Arbeitsklima; Strafvollzugsbedienstete; Arbeitszufriedenheit; Arbeitsbelastung; kollegiale Unterstützung

1. Introduction

Prison working conditions have received a lot of media attention in the Netherlands in the last few years. In 2017 there were strong signals that prison officers felt unsafe and overworked, which was attributed to a series of budget cuts (Minkes, 2017). A survey conducted by the federation of trade unions of the Netherlands in 2017 and 2019, showed that prison officers experience four times as much work pressure compared to non-prison workers (FNV, 2017, 2019). Roughly 90 % of staff-members say that their work demands have increased in the last few years, half of them say that dangerous situations occur as a result of increases in work demands. A report published by the Inspectorate of Justice and Security in 2018 (Inspectie Justitie en Veiligheid, 2018) revealed that prison personnel have insufficient time to adequately carry out necessary tasks such as cell inspections and security procedures. These concerns are raised against a background of a declining prison population and closure of prisons in the Netherlands, which have raised attention in international media (Boztas, 2019; Weller, 2017).

It is long recognized that prison officers are of great influence on a prisoner's day-to-day experiences, and that staff-prisoner relations are vital for a positive and humane prison climate (Sykes, 1958; Liebling, 2011). While the humane treatment of incarcerated persons is laid down in supranational agreements and guidelines (including the Nelson Mandela Rules and European Prison Rules), there are many practical factors that can frustrate the realization of a healthy prison climate. For example, overcrowding of prisons, staff shortages, and budget restraints may cause occupational stress, and seriously hamper delivering a positive and productive prison experience. This may have damaging effects on the wellbeing and safety of staff and prisoners, and on prisoners' preparation for release.

Research into the relationship between work climate and prison climate – incorporating staff and prisoners' perspectives – is timely and important given the implications and concerns outlined above. Few prior studies have combined data from both prison officers and prisoners, even though '[t]he situation of inmates in a correctional institution cannot be adequately understood without some knowledge of the situation of staff members' (Mathiesen, 1965, p. 53).

The Dutch Life in Custody Study is a large-scale, nation-wide survey on the experience of prison climate among adult men and women imprisoned in the Netherlands. One of the unique qualities of this survey is that self-reported data on prison climate collected from prisoners was supplemented with self-reported data on the experienced work climate, collected simultaneously from prison officers. In this contribution, this innovative dataset is used to study the relationship between work climate and prison climate.

1.1. Prison Climate

Prison climate, or the character of an institution (Moos, 1975), is generally considered a good indicator of the experienced prison conditions. Prison climate can be seen as a multidimensional construct with emotional, material, organizational, and interpersonal dimensions (Ross et al., 2018), including: autonomy, safety and order, relationships in prison, meaningful activities, contact with the outside world, and prison facilities (Boone et al., 2016; Van Ginneken et al., 2018).

There are a few prominent theories in criminology on the determinants of prison climate. Extrapolated from the literature on prison adjustment, we can distinguish two main perspectives, which are complementary rather than mutually exclusive: the deprivation and importation perspective. The deprivation perspective emphasizes that individuals' adjustment and the culture in prison – and closely related to this, prison climate – are a product of the deprivations imposed by the situation and environment (Clemmer, 1940; Sykes, 1958). The importation perspective holds that prison culture is a result of pre-prison experiences, pre-existent values, and personal characteristics (Irwin & Cressey, 1962). It is now generally accepted that both structural (i. e., deprivation) and individual (i. e., importation) factors influence adjustment, and it would follow that perceptions of prison climate are determined by these, too. This would mean that prison climate partly exists on the individual level (i. e., psychological climate) as a function of individual experiences and characteristics, and partly on the unit or prison level (i. e., prison climate) as a function of shared confinement characteristics. A major drawback of these explanations is, however, that they are largely centered around prisoners' characteristics and experiences of the institutional context, and essentially disregard staff practices (apart from the prisoners' perspective) and the broader work environment of prison officers.

1.2. Work Climate

The notion of work climate reflects the idea that perceptions about work conditions are shared, to some extent, by people who share the same work environment. That is, a work environment may have a specific atmosphere (characterized by shared perceptions of employees in this environment), that is different from other work environments. In this paper we concentrate on the climate among prison officers working in the same unit, because they are in direct contact with each other and with the prisoners. There is also a rich literature on organizational climate more broadly, revolving around employees working in the same organization (James & Jones, 1974; Schneider, Ehrhart, & Macey, 2013). In our review of the literature, we focus on previous studies on prison officers, given the unique challenges and demands associated with this type of work.

The work of prison officers evolved greatly over the last couple of decades. When in the past their main focus was on surveillance and confinement, prison officers now have to ensure security, as well as facilitate, promote and motivate offenders for re-integration, while at the same time ensuring a positive prison environment (Bourbonnais et al., 2007; Liebling, 2004, 2006). The ever-growing demand that is placed upon prison officers is threatened by increasingly difficult work conditions, and a population with complex (mental) health needs and wide-ranging backgrounds and criminal histories (Armstrong & Griffin, 2004; Ferdik & Smith, 2017; Finn, 2000). Challenges faced by many prisons across the world are the lack of resources, overcrowding, violent incidents, and high levels of stress, illness and turnover among prison staff (Ferdik & Smith, 2017; Finney et al., 2013; Kinman, Clements & Hart, 2017). Furthermore, prison officers report experiencing high work demands, role ambiguity, time pressure, procedural injustice and a lack of support from both management and co-workers (Bevan, Houdmont, & Menear, 2010; Holmes & Maclnnes, 2003; Kinman, Clements & Hart, 2017; Lambert et al., 2009; Schaufeli & Peeters, 2000).

High workload and job dissatisfaction can have detrimental effects on individual members of staff, as these are known predictors of stress and burnout (Andersen et al., 2017, Griffin et al., 2010; Lambert et al., 2015). Compared to other professions, prison officers are especially susceptible to work-related stressors (Kunst, 2011). Prison officers report high numbers of psychological distress and burnout all over the world (De Magalhães Bezerra, Gonçalves de Assis, & Constantino, 2016; Brower, 2013; Schaufeli & Peeters, 2000). In the Netherlands for example, prison officers report feeling undervalued, unmotivated, and that they have insufficient time to correctly carry out the tasks given to them (Gravesteijn et al., 2018).

An important factor that appears to be protective of prison officer stress, is a positive relationship with co-workers. Previous research found that a positive valuation of co-worker relationships was associated with reduced stress, improved satisfaction, improved effectiveness, and higher organizational commitment (Lambert, Altheimer, & Hogan, 2010; Lambert et al., 2016; Paoline, Lambert & Hogan, 2006; Steiner & Wooldredge, 2015). The mechanisms underlying this effect may be the emotional buffer that is provided by supportive co-workers, and the practical advantages of effective cooperation.

Workload, job satisfaction, and co-worker support may also be related to organizational functioning and have an impact on the people who are incarcerated. Employees who feel overworked and unappreciated were shown to have low organizational engagement and work motivation (Cropanzo & Rupp, 2003; Griffin & Hepburn, 2005; Jiang & Lavaysse, 2018). Poor working conditions may hamper staff-members in performing their duties (Griffin et al., 2014; Lambert et al., 2013), and may seriously endanger prisoner conditions. Staff who are able to devote enough time to personal contact with prisoners, on the other hand, may contribute to a supportive and productive prison climate. Studies have shown that prison officers play a pivotal role in prisoner well-being, safety, and re-integration perspectives (Auty & Liebling, 2020; Beijersbergen et al., 2014, 2016; Bosma, et al., 2020a; Liebling, 2011; Molleman & Leeuw, 2012).

1.3. Work Climate and Prison Climate

There is little prior research on the link between work climate and prison climate, and existent evidence is conflicting. There is evidence that certain aspects of a poor work climate (such as

workload and dissatisfaction) are associated with negative treatment of prisoners. Studies have found that high workload, high emotional demands, time pressure, a lack of resources or rewards, poor feedback, and low input in decision-making and job autonomy impacted job performances and attitudes towards prisoners (Andersen et al., 2017; Lambert et al., 2015; Molleman & Leeuw, 2012; Wright et al., 1997). Furthermore, lower levels of input in decision-making, higher levels of job stress, and burnout symptoms have been linked to more punitive instead of supportive treatment styles of staff towards prisoners (Dowden & Tellier, 2004; Lambert, Barton-Bellessa, & Hogan, 2015; Shannon & Page, 2014). A supportive staff orientation has been linked to more positive individual perceptions of prison climate (Molleman & Leeuw, 2012; Molleman & Van der Broek, 2014). A study by Molleman and Van der Broek (2014) among 2,247 Dutch prison officers and 4,064 prisoners, related prison officers' perceptions of job satisfaction, workload, and treatment styles to prisoners' individual perceptions of prison climate. They showed that a positive work situation was associated with a more active and positive approach towards prisoners, which, in turn, was related to better-perceived prison conditions. Research in Norway found that smaller prison size was associated with more positive prison climate scores, as well as more positive perceptions by staff on senior management, relationships with prisoners, and safety (Johnsen, Granheim, & Helgesen, 2011). The authors argued that smaller prisons enabled more informal relationships between staff and prisoners, better cooperation, and more transparency and visibility. Unfortunately, this study did not include multivariate analyses with multiple independent and control variables, linked to different dimensions of prison climate.

In contrast, research comparing staff cultures and prison climate across public and private prisons in England and Wales found that prisoners were most positive about prisons where staff held the least positive attitudes, and vice versa (Crewe, Liebling, & Hulley, 2011). Supported by qualitative research in these selected prisons, the authors contend that staff competence and professionalism could go hand-in-hand with negative attitudes, which could explain positive prisoner perceptions. Thus, it is important not to rely solely on staff attitudes towards prisoners; rather, it is important to capture aspects of work climate that are most likely to influence staff behavior, i. e., their competence and professionalism in maintaining a safe and fair environment. It is important to investigate these findings further and in different contexts, with a broader selection of prisons, and analytical methods that allow for the inclusion of control variables. It should also be noted that the problems and climate in prisons in England and Wales are not necessarily representative: for example, there are no private prisons in many other European countries, including the Netherlands; private prisons in England and Wales have a relatively large proportion of young and inexperienced staff; and prisons in England and Wales suffer from high levels of overcrowding, unlike the Netherlands.

Despite clear indications that work climate is associated with prisoner experiences, there is limited quantitative research that integrates both, while recognizing the multidimensional nature of work climate and prison climate. Previous work into the determinants of prison climate has, for the vast majority, focused on individual predictors, both in terms of previous experiences and characteristics (import factors) and experiences while incarcerated (deprivation factors). In studying deprivation factors, the influence of work climate as experienced by prison officers is a neglected area. This study is, to our knowledge, the first to take a multivariate and multilevel approach to relating different dimensions of work climate to individual perceptions of a multitude of prison climate variables. The aim of this paper is to explore in detail how different aspects of work climate (unit tendencies of job satisfaction, workload, and co-worker

support), and staff and unit characteristics (staff composition, unit size, and occupancy rate) are related to incarcerated individuals' perceptions of prison climate (autonomy, safety, staff-prisoner relationships, peer relations, meaningful activities, and total rating). It is expected that individuals perceive the dimensions of prison climate more favorably, when they reside in units where average levels of reported workload by staff are lower, job satisfaction is higher, and co-worker support is higher. To achieve the above aims, a complex research design was necessary, in which both staff and prisoner data were simultaneously collected, among a large number of units across different prisons.

1.4. The Life in Custody Study

The Life in Custody Study is a large-scale, nation-wide survey on the experience of prison climate among adult men and women incarcerated in the Netherlands (see Van Ginneken et al., 2018, for detailed information about the study), that was first conducted between January and April 2017. Consecutive data-collections have since taken place in 2019, and will take place in 2021, and 2023. In order to assess prison climate an instrument was developed, the Prison Climate Questionnaire, which has excellent psychometric qualities (see Bosma et al., 2020b). Quite uniquely, for the purpose of the Life in Custody study, three types of data were simultaneously obtained (1) self-reported data on prison climate, using the Prison Climate Questionnaire; (2) self-reported data on the experienced working conditions, from a staff survey that was carried out in the same time-period by a third party; and (3) administrative data on institutional and regime characteristics, and further information about each incarcerated person taking part in the study. Because of this unique combination of data, this present study is able to assess the extent to which a unit's work climate as perceived by prison officers, is related to the experiences of prison climate. Because this survey was carried out nation-wide, in 28 prison facilities, and information on each prison unit was also made available, this study is also able to analyze the data using multi-level methods, taking into account important background characteristics of prisoners and the unit.

The prisons included in this study consist of units that are assigned a specific regime. These units are typically corridors or wings with single or double cells on one or two levels, with room for recreation and (often) cooking. Each unit has its own daily program, although there may be individual variation in time out of cell and activities. Staff assignment to each unit tends to be fairly stable. There are regimes for pre-trial prisoners (34 %), convicted prisoners (38 %), short-stay custody (e. g., for individuals who violated sentence conditions; 5 %), extra-care (for individuals with mental health problems; 10 %), persistent offenders (for individuals who received a two-year custody measure; 8 %), and minimum security (for individuals close to their release date; 4 %). Units vary in size, but – based on our observations – were typically between 12 and 48 beds in size. During data collection, one-fifth of prisoners were sharing a cell. Women made up 5 % of the Dutch prison population.

2. Method

2.1. Data

To answer the research question proposed, two survey datasets were combined: the data collected among incarcerated individuals as part of the Life in Custody Study during 2017, and data collected during the same time period among prison staff, made available by the Dutch Custodial Institutions Agency [in Dutch: DJI]. The Life in Custody Study 2017 assessed six domains of prison climate, and the staff survey captured perceptions about one's work, including job satisfaction, experienced workload, and cooperation. Additionally, administrative data about unit, staff, and prisoner characteristics were collected.

The survey among incarcerated individuals was conducted between January and March of 2017, in each of the at the time existing 28 Dutch prison facilities for adult men and women. The questionnaires were distributed and collected in person by the research team, in order to be able to explain the study properly, achieve a high response rate, and ensure confidentiality. In total, 4,938 individuals out of 6,088 who could be approached, participated, which resulted in a response rate of 81 %. Informed consent was obtained, which resulted in a study sample of 4,538 respondents, who gave additional permission to obtain administrative data. More details on the study's procedure are reported elsewhere (Van Ginneken et al., 2018).

The correctional staff survey was conducted digitally between April and May of 2017, using the Internet Mirror, which is a validated instrument to measure staff's working conditions, used by many Dutch governmental organizations. The validity of scales specifically designed for staff working in prisons has also been established (Molleman & Van der Broek, 2014). For the purpose of this article we only selected data obtained from frontline staff (prison officers) who were in daily contact with prisoners.[1] The final sample consisted of 1,508 participants (response rate of 74 %). The staff responses were aggregated at the unit level and added as a variable to each incarcerated individual in the corresponding unit. We only included individuals who had complete scores on each of the dependent variables, to ensure that differences in results are not due to missing data on these scales. In the process of combining the data, a number of 3,883 incarcerated individuals in 135 units, with corresponding unit-level data, remained.

2.2. Measures

Prison climate (Level 1, individual level). Individual perceptions of prison climate were included as a dependent variable, and were measured using the Prison Climate Questionnaire (PCQ; Bosma et al., 2020b). Five scales from the PCQ were included in the analyses: *Autonomy* consisted of five items (e. g. 'I can decide for myself on matters that are important to me'); *Safety* consisted of five items (e. g. 'I feel unsafe in this institution'); *Staff-prisoner relationships* consisted of eight items that measured procedural justice and relationships with staff more generally (e. g. 'If I have problems, the staff-members in this unit help me'); *Peer rela-*

[1] Units where the response rate was below 40 % or where less than 5 staff-members participated, were omitted from the data.

tionships consisted of five items (e. g. 'Prisoners treat each other respectfully here'); and *Meaningful activities* consisted of four items (e. g. 'This institution delivers an interesting and varied program'). A one-item measure of overall satisfaction with the institution was also included ('Generally speaking, I am satisfied with this institution'). Items within each scale consisted of statements that were rated on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Prison Climate Questionnaire has excellent psychometric properties (see Bosma et al., 2020b), including good internal consistency of all scales with Cronbach's Alphas ranging from .78 to .92, and good criterion and construct validity.

Work climate (Level 2, unit level). Work climate was measured using three scales, including *job satisfaction*, *workload* and *co-worker support*. Each item was measured using 5-point Likert-type scales. The *job satisfaction* scale consisted of five items covering satisfaction with the job, its content and amount of independence (e. g., 'How satisfied are you about your job, in general?'). A higher score reflects greater job satisfaction. *Workload* was measured with seven items, covering job stress, time pressure, and the experienced consequences of workload (e. g., 'I often have more work than I can handle'). A higher score reflects a higher workload. *Co-worker support* was assessed using five items, and reflects the way in which staff-members help each other, their interest in each other, cooperation amongst each other, and feedback (e. g., 'My colleagues help me to get my work done'). Construct validity of each scale was confirmed by factor analysis, showing that the items formed 1 component (Kaiser's Criterion>1) with factor loadings above 0.4. The scales were also reliable, with Cronbach's Alphas of .77 and higher.

Scores on work climate were calculated as unit aggregates, to reflect the average unit tendency as opposed to individual perceptions. This is supported by the intraclass correlations (ICCs) of job satisfaction (ICC = .19), workload (ICC = .22), and co-worker support (ICC = .14), which confirm that there is clustered variance on these measures; that is, between 14 and 22 % of variance on these scales can be attributed to the unit rather than the individual. The ICC thus also reflects the level of agreement among correctional officers assigned to a unit. Previous research established that the median ICC in studies of organizational climate is .12 (James, 1982), which means that the scores in the current study are fairly high. We can consider this a sufficient indicator of the existence of a work climate (shared perceptions) and a justification for aggregating these scores on the unit level.

Unit and staff characteristics (Level 2, unit level). Various variables that were expected to be related to working conditions were included at the unit level. These were unit size (number of cells), staff-prisoner ratio, occupancy rate, ratio male to female staff, and staff work experience (in years). Regime was added as a control variable (pretrial detention, minimum security, extra care, short-stay custody, and persistent offenders, with regular prison regime as reference category).

Control variables (Level 1, individual level). Individual background characteristics that were included to control for individual level factors that have previously been associated with prison experiences were: age (years), gender (0 = female, 1 = male), country of birth (0 = the Netherlands, 1 = other), index offense (0 = non-violent, 1 = violent), previous incarcerations (number), marital status (0 = no partner, 1 = partner), parental status (0 = no children, 1 = children), double cell (0 = no, 1 = yes), and physical health.

2.3. Analytical strategy

The goal of this study was to examine to what extent differences in work climate across different prison units impact individual perceptions of prison climate. Given the hierarchical structure of the data, multilevel regression analysis was applied to account for differences across units and thus for the fact that individuals (level 1) are nested in a particular unit (level 2). In other words, multilevel modelling was used to control for the fact that there is dependency in the data and to disentangle within-unit differences from between-unit differences. Since the experience of prison climate may vary across units, random intercept models were used. For the independent variables the fixed effects were included.

First, univariate analyses were run to reveal average scores and tendencies among prison climate and work climate variables. Second, bivariate analyses were run on the variables on level 2, the unit level. This gives insight among relationships between the various work climate variables. Third, a null model was fitted, which revealed which part of the variance in prison climate could be explained by between-unit differences. This information was derived from the intraclass correlation (ICC), calculated as: level-2 var/(level-1 + level-2 var), which was .12 for autonomy, .03 for safety, .05 for peer relations, .10 for staff-prisoner relationships, .08 for meaningful activities, and .13 for the overall institution rating. This signifies the proportion of variance that is clustered at the unit level; the remaining majority of variance is clustered at the individual level. Next, a total number of six models were fitted. Each model included the independent variables job satisfaction, workload, and co-worker support, unit and staff characteristics, and control variables (regime, age, sex, country of birth, index offense, previous incarcerations, marital status, parental status, double cell and physical health). These independent variables were each tested against dimensions of prison climate: autonomy, safety, peer relations, staff-prisoner relations, meaningful activities, and the total rating of the institution.

Ancillary analyses were conducted with the dependent prison climate variables as unit-level constructs, given that there was significant clustering at this level. Additionally, 'climate' supposes shared as opposed to individual perceptions (see also Van Ginneken & Nieuwbeerta, 2020). These unit-level analyses show whether average perceptions of prisoners on the same unit about prison climate are related to average perceptions of staff about work climate. Control variables (on the unit level only) were selected on the basis of zero-order correlations with the prison climate variables. All analyses were conducted in Stata version 15 (StataCorp, 2017).

3. Results

Individual perceptions of prison climate vary across the dimensions, which confirms its multidimensional structure. The average scores on the dependent variables range between a low 2.25 for meaningful activities and a high 4.00 for safety. The scores indicate that individuals are on average positive (i. e., above neutral) about their experienced safety (M = 4.00, SD = 0.82), peer relations (M = 3.44, SD = 0.70), and staff-prisoner relationships (M = 3.30, SD = 0.88). They are negative (*i. e.,* below neutral) about autonomy (M = 2.69, SD = 0.95), meaningful activities (M = 2.25, SD = 0.95) and the total rating of the institution (M = 2.90, SD = 1.11).

Table 1. Descriptive statistics prison climate and work climate

	N	Mean	SD	Min	Max
Prison climate					
Autonomy	3,883	2.69	0.95	1	5
Safety	3,883	4.00	0.82	1	5
Peer relations	3,883	3.44	0.70	1	5
Staff-prisoner relations	3,883	3.30	0.88	1	5
Meaningful activities	3,883	2.25	0.95	1	5
Total rating	3,883	2.90	1.11	1	5
Work climate					
Job satisfaction	135	3.18	0.33	2.18	3.96
Workload	135	2.75	0.41	1.89	3.85
Co-worker support	135	3. 86	0.29	3.05	4.54
Proportion female staff	135	.21	.13	.00	.81
Staff/prisoner ratio	135	.33	.31	.11	3.06
Work experience staff (years)	135	19.08	3.27	11.53	29.00
Unit capacity	135	38.46	18.26	12	98
Unit occupancy rate	135	.89	.14	.38	1.00

From the descriptive analysis, it appears that average tendencies of work climate variables are fairly positive, i. e., above the neutral score (3) for job satisfaction and co-worker support and below it for workload, respectively. *Table 1* shows the descriptive statistics of work and prison climate. Work climate is aggregated to the unit level, while prison climate reflects individual perceptions. With respect to our independent variables job satisfaction, workload, and co-worker support, the mean score on job satisfaction (M = 3.18, SD = 0.33) indicates a moderately positive overall work experience. Additionally, the average rating of co-worker support is also fairly positive (M = 3.86, SD = 0.29). Average workload scores are slightly below the neutral mid-point (M = 2.75, SD = 0.41), with lower scores reflecting lower average unit perceptions of workload. An important remark is that the descriptive results highlight that Dutch correctional officers tend to have a long career history in the Prison Service, with an average of 19 years of work experience.

While the work climate variables workload, job satisfaction, and co-worker support show significant and meaningful correlations between each other, these *perception* variables do not bear strong relationships with staff composition and unit characteristics. A bivariate analysis of work climate variables (see *Table 2*) reveals a strong correlation between workload and job satisfaction (r = -.66), which means that higher average levels of workload on a unit are associated with lower average levels of job satisfaction on the same unit. A moderate positive correlation is found between co-worker support and job satisfaction (r = .40). It is also interesting to note that a lower unit capacity is associated with higher job satisfaction (r = -.24), and lower workload (r = .27).

Even when controlling for regime and a multitude of individual characteristics, effects of work climate and staff/unit characteristics remain significant. In *Table 3*, the results of a series of multilevel analyses of the included dimensions of prison climate (autonomy, safety, peer relations, staff-prisoner relations, meaningful activities) and the total rating of the institution are displayed. Note that all control variables included at level 1 and regime at level 2 were omitted

Table 2. Correlations among work climate variables

	1	2	3	4	5	6	7
1 Job satisfaction	-	-	-	-	-	-	-
2 Workload	-.66 ***	-	-	-	-	-	-
3 Co-worker support	.40 ***	-.09	-	-	-	-	-
4 Proportion female staff	-.03	.07	-.09	-	-	-	-
5 Staff-prisoner ratio	-.06	-.17 *	.07	-.03	-	-	-
6 Work experience (years)	.19 *	-.17	.01	-.10	-.02	-	-
7 Unit capacity	-.24 **	.27 **	.00	-.15	-.20 *	-.29 **	-
8 Unit occupancy rate	.07	.01	.00	-.10	-.40 ***	.14	-.26 **

*Note. * p < .05 ** p < .01 *** p < .001*

from this table for clarity (full table in Appendix I). As shown in *Table 3*, average unit scores of job satisfaction were not related to individual perceptions of prison climate of prisoners in the same unit. Average staff experiences of workload were related to prison climate: on units with higher average reported workload, prisoners were less positive about their experiences with safety, as well as the relations with their peers. It was also found that units in which staff-members reported higher co-worker support, prisoners reported more positively on autonomy, staff-prisoner relationships, and about the institution in general.

With respect to the staff and unit variables included at level 2 (proportion of female staff, staff/prisoners ratio, work experience of staff-members, unit capacity, and unit occupancy rate), only staff-prisoner ratio was significantly related to most of the dependent variables tested against. It was shown that on units with a higher staff to prisoner ratio, prisoners reported more negatively about their experiences with autonomy, meaningful activities, and the institution in general. In contrast, prisoners on units with a higher staff to prisoner ratio were more positive about relationships with their peers. Analyses for prison climate as unit-level variables did not reveal noteworthy differences with the presented results (see *Table 5* in Appendix I).

Table 3. Relationships between work climate and prison climate variables

	Autonomy	Safety	Peer relations	Staff-prisoner relations	Meaningful activities	Total rating
Job satisfaction	-0.02	-0.01	-0.03	0.06	0.05	0.06
Workload	-0.03	-0.14*	-0.13*	0.12	-0.03	0.01
Co-worker support	0.21*	0.04	0.04	0.22*	0.12	0.29*
Proportion female staff	-0.21	0.03	0.20	0.10	-0.05	-0.02
Staff/prisoner ratio	-0.41***	-0.16	0.18*	-0.03	-0.34***	-0.44***
Work experience staff (years)	0.01	0.00	0.01	0.01	0.01	0.02*
Unit capacity	0.00	0.00	0.00	0.00*	0.00	0.00
Unit occupancy rate	-0.20	-0.01	0.12	-0.28	-0.02	0.16

Note. B-coefficients (level 2) are reported. Further control variables were included in the analysis, but omitted from the table. ** p < .05, ** p < .01, *** p < .001.*

4. Discussion

It is important that prisons are safe environments for individuals incarcerated, as well as those working in these institutions. Concerns about occupational stress of correctional officers have recently received media attention in the Netherlands and abroad. It is therefore an opportune moment to investigate the relationship between work climate as experienced by staff and prison climate as experienced by prisoners. The Life in Custody Study enabled us to investigate the relationship between work climate on the unit level and perceptions of prison climate of individuals incarcerated in these units.

In line with our expectations, a unit's average level of perceived workload was negatively associated with some dimensions of prison climate, while co-worker support showed positive associations. Contrary to our expectations, a unit's average level of job satisfaction was not related to any of the prison climate dimensions, but this may be partly explained by its strong correlation to workload. Interestingly, co-worker support and workload showed significant relations with different prison climate variables. More specifically, more positive scores on co-worker support were associated with greater autonomy and better staff-prisoner relationships. This may suggest that co-worker support is conducive to procedural justice in the treatment of prisoners. The finding may also indicate that there are units where prison officers have good social skills, which translates to high co-worker support and good staff-prisoner relationships. The importance of procedurally just treatment and good staff-prisoner relationships has been emphasized in previous research (Beijersbergen et al., 2014, 2016; Liebling, 2004). Higher unit scores on workload, on the other hand, were related to lower perceived safety and poorer peer relations, while controlling for regime and individual characteristics of prisoners. There are two possible, not mutually exclusive, explanations for this effect: first, correctional officers who experience a higher workload may struggle to maintain a safe environment because they lack sufficient capacity or skills in dealing with the individuals incarcerated in their unit. Second, units that are less safe due to behavior of prisoners, may cause greater job stress. Possibly, peer relations may be affected if prisoners need to spend more time in-cell due to higher staff workload.

A further noteworthy finding is that a unit's staff/prisoner ratio had strong negative relationships with autonomy, meaningful activities, and the total rating of the institution, but a positive relationship with peer relations. This may suggest that units with more staff to prisoners have a limiting effect on freedom and perceived meaningful use of time, and increase reliance on peer relations. Ancillary analyses (not reported) were conducted to examine the possibility that this variable absorbed a regime effect; this showed that the effect remained also when the analysis was restricted to regular prison regimes. Nevertheless, we cannot rule out the possibility that more challenging units are assigned more staff. Our findings do suggest that good staff-prisoner relationships cannot simply be promoted through an increase of staff in a given unit, but that this depends more on the quality and cooperation of staff. However, it is important to note that this finding is unlikely to be replicated in situations with serious staff shortages. Furthermore, prior research showed that a higher staff to prisoner ratio was associated with lower self-reported misconduct (Bosma et al., 2020a) and greater procedural justice (Beijersbergen et al., 2015).

Contrary to prior research conducted in Norwegian prisons (Johnsen, Granheim, & Helgesen, 2011) there were no substantial relationships between unit capacity and individual perceptions. Prison size was not included as a variable in our analysis. However, bivariate analyses

revealed that prison staff on larger units reported higher average workload and lower job satisfaction, so there may be an indirect effect of size on prison climate. It is worthwhile to investigate this in further research, as there is a tendency in the Netherlands and abroad to build larger prisons, to achieve economies of scale.

A significant strength of the study is its large dataset, which connects staff experiences, prisoner experiences, and administrative administration. Despite this, limited power precluded the inclusion of many variables at the unit level. Instead, most control variables were included at the individual level. We were able to run unit-level analyses with a selection of control variables, which showed very similar results. Further research should investigate how prisoner composition is related to prison and work climate. Possibly, a larger proportion of younger prisoners in unit negatively affects work climate and prisoner climate, as it has been previously related to violent incidents (Lahm, 2008). Indeed, the unit-level analyses showed that a higher average age of prisoners on a unit was related to better peer relations and better staff-prisoner relations.

Our study showed that perceptions of job satisfaction, workload, and co-worker support are, to a relatively large extent, shared across prison officers who work in the same unit. This finding is supportive of the idea that a work climate exists. Further research should acknowledge this and incorporate measures of work climate, and at the very least control for the multilevel structure of prison data. A limitation of our study is that work climate did not include scales on staff orientation towards prisoners and attitudes towards management. The inclusion of more variables on the unit level warrants an even larger dataset.

This paper focused on explaining variations in individually experienced prison climate by considering unit-level variables, specifically related to staff. There are two important considerations regarding this approach: first, the intraclass correlations of prison climate ranged between .03 and .13, which means that the majority of variance is clustered at the individual level and should thus also be explained by individual-level variables. Individual-level control variables were included in the analyses, in order to increase the validity of our interpretation of unit-level effects. Nevertheless, the clustering of individuals in units should not be ignored and it is important that prisons research takes a multilevel approach. Our research also confirms that staff have an impact on how individuals experience imprisonment. Second, we showed that prison climate can also be conceived of as unit-level variable, similar to work climate (see also Van Ginneken & Nieuwbeerta, 2020), with similar relationships. However, analyses at this level preclude the inclusion of many independent or control variables, given the limited number of units. Alternatively, further research could explore the effect of prison climate on a unit on individual staff experiences.

The findings confirm that staff and prisoner wellbeing are connected; therefore, regardless of the direction of any effects, policies that affect either staff or prisoners are likely to have an impact on both. From the results, it appears worthwhile to invest resources in improving job satisfaction and co-worker support, and reducing workload. Job satisfaction and workload are closely related, and staff workload perceptions were negatively related to safety. There may be a multitude of causes of job stress (not researched in this study), such as the complexity of problems of prisoners, high turn-over, staff shortages, high administrative demands, and prisoner misconduct.

It is likely that an approach that tackles the underlying problems of job stress and high perceived workload can have positive effects on the wellbeing of staff and safety of prisoners. While safety of staff and prisoners and work demands placed on staff have recently received

much media attention in the Netherlands, the results do not paint a uniformly negative picture; rather, descriptive results show that average unit scores on workload are below the mid-point. There are also mixed findings regarding numbers of staff and staff-prisoner ratios: on the one hand, a higher staff-prisoner ratio is associated with negative ratings on various dimensions of prison climate, on the other hand, it is related to lower reported workload. Further research could also take into account staff sick-leave, as this may have affected workload and the staff-prisoner ratio in practice (as opposed to the administrative ratio).

Finally, a note about the generalizability of the findings. The analyses were conducted with data from the Netherlands, which means we cannot conclude anything about the situation elsewhere. In particular, many other countries struggle with problems of overcrowding, which are likely to affect work and prison climate. Possibly, the relationship between workload and prison climate may be even more pronounced as a result. In countries where prisoners are held in isolation for most of the day, or where they have very little contact with staff for other reasons, there may be a smaller impact of work climate and prison climate. Comparative research could help shed more light on best practices of maintaining safe prisons for the wellbeing of staff and incarcerated individuals.

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Kontakt | Contact

Esther F.J.C. van Ginneken | Leiden University | Institute of Criminal Law and Criminology | e.f.j.c.van.ginneken@law.leidenuniv.nl

Anouk Q. Bosma | Leiden University | Institute of Criminal Law and Criminology | a.q.bosma@law.leidenuniv.nl

Amanda Pasma | Leiden University | Institute of Criminal Law and Criminology | a.j.pasma@law.leidenuniv.nl

Hanneke Palmen | Leiden University | Institute of Criminal Law and Criminology | j.m.h.palmen@law.leidenuniv.nl

Appendix I

Table 4. Unit-level and individual-level determinants of prison climate

	Autonomy	Safety	Peer relations	Staff-prisoner relations	Meaningful activities	Total rating
Work climate (level 2)						
Job satisfaction	-0.02	-0.01	-0.03	0.06	0.05	0.06
Workload	-0.03	-0.14*	-0.13*	0.12	-0.03	0.01
Co-worker support	0.21*	0.04	0.04	0.22*	0.12	0.29*
Proportion female staff	-0.21	0.03	0.20	0.10	-0.05	-0.02
Staff/prisoner ratio	-0.41***	-0.16	0.18*	-0.03	-0.34***	-0.44***
Work experience staff (years)	0.01	0.00	0.01	0.01	0.01	0.02*
Unit capacity	0.00	0.00	0.00	0.00*	0.00	0.00
Unit occupancy rate	-0.20	-0.01	0.12	-0.28	-0.02	0.16
Regime (level 2)						
Regular prison	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Pre-trial	-0.24***	0.06	0.01	0.01	-0.22***	-0.13
Minimum security	0.36***	0.27***	0.28***	0.24*	0.21*	0.13
Short-stay custody	-0.30***	0.01	0.01	0.18	-0.36***	-0.26*
Extra-care unit	0.01	-0.21***	-0.01	0.33***	0.03	0.03
Persistent offenders	0.13	-0.04	-0.09	0.17	-0.04	-0.01
Individual background (level 1)						
Age	0.01***	-0.01***	0.00	0.02***	0.01***	0.02***
Non-Dutch	0.03	-0.08*	-0.02	-0.02	0.23***	-0.02
Male	-0.07	0.07	0.19*	-0.19	-0.16	-0.26
Time served (days)	0.00	0.00	0.00*	0.00	0.00	0.00
Previous incarcerations	0.00	0.00	-0.02***	-0.02***	0.00	-0.02***
Violent index offence (yes)	0.01	0.02	-0.04	0.00	0.02	0.03
Physical health	0.32***	0.28***	0.15***	0.29***	0.29***	0.40***
Double cell (yes)	-0.16***	-0.07	-0.06	-0.12*	-0.10	-0.20***
Partner (yes)	-0.01	0.04	0.03	-0.02	-0.08*	-0.09*
Children (yes)	0.02	-0.03	-0.10***	-0.03	0.00	-0.01

Note. B-coefficients are reported. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5. Unit-level determinants of prison climate (*N* = 135)

	Autonomy	Safety	Peer relations	Staff-prisoner relations	Meaningful activities	Total rating
Work climate						
Job satisfaction	-0.01	-0.05	-0.03	0.03	-0.00	0.03
Workload	-0.06	-0.22**	-0.09	0.04	-0.08	-0.04
Co-worker support	0.23*	0.11	0.03	0.23*	0.14	0.35**
Control variables						
Average age prisoners	0.01	-0.01	0.01*	0.02**	0.02*	0.02
Staff/prisoner ratio	-0.44***	-0.18**	0.15*	-0.07	-0.42***	-0.51***
Work experience staff (years)	0.01	-0.00	0.00	0.01	0.01	0.02
Unit capacity	-0.00	-0.00	-0.00	-0.00*	-0.00	-0.00*
Regime						
Regular prison	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Pre-trial	-0.26**	0.06	0.08	0.04	-0.18*	-0.17
Minimum security	0.49**	0.33**	0.44***	0.26*	0.19	0.36
Short-stay custody	-0.45**	-0.10	0.02	0.09	-0.40**	-0.52**
Extra-care unit	0.01	-0.33***	-0.04	0.29*	-0.03	-0.03
Persistent offenders	-0.05	-0.24**	-0.37***	-0.12	-0.06	-0.28*

Note. B-coefficients are reported. * $p < .05$, ** $p < .01$, *** $p < .001$.