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van der Helm, P.; Stams, G.J.; van Genabeek, M.; van der Laan, P.

**DOI**

[10.1080/14789949.2011.633615](https://doi.org/10.1080/14789949.2011.633615)

**Publication date**

2012

**Document Version**

Author accepted manuscript

**Published in**

The Journal of Forensic Psychiatry & Psychology

[Link to publication](#)

**Citation for published version (APA):**

van der Helm, P., Stams, G. J., van Genabeek, M., & van der Laan, P. (2012). Group climate, personality, and self-reported aggression in incarcerated male youth. *The Journal of Forensic Psychiatry & Psychology*, 23(1), 23-39. <https://doi.org/10.1080/14789949.2011.633615>

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group climate, personality and aggression in incarcerated male youth

**Running Head:** Group climate, personality and aggression in incarcerated male youth.

**Group Climate, Personality and Self-reported Aggression in Incarcerated Male Youth**

G.H.P. van der Helm<sup>1</sup>

Leiden University of Applied Sciences (School of Social Studies).

G.J.J.M Stams<sup>2</sup>

University of Amsterdam (Department of Forensic Child and Youth Care Sciences).

M. van Genabeek<sup>3</sup>

(Hartelborgt Youth Prison)

P.H. van der Laan<sup>4</sup>

Free University Amsterdam & the Netherlands Institute for the study of Crime and Law  
Enforcement

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<sup>1</sup> Peer van der Helm (MSc) is research director at Leiden University of Applied Sciences (School of Social Studies).

<sup>2</sup> Geert-Jan Stams (Ph.D) is Professor at the University of Amsterdam (Department of Forensic Child and Youth Care Sciences).

<sup>3</sup> Marijke van Genabeek (MSc) is director of the Hartelborgt Youth Prison in the Netherlands.

<sup>4</sup> Peter van der Laan (Ph.D.) is Professor at the VU University Amsterdam and he is a Senior Researcher of the NSCR (Netherlands Institute for the study of Crime and Law Enforcement)

group climate, personality and aggression in incarcerated male youth

Address correspondence to: Peer van der Helm, Leiden University of Applied Sciences,  
School of Social studies. P.O. Box 382,2300 AJ Leiden, The Netherlands

Email: [helm.vd.p@hsleiden.nl](mailto:helm.vd.p@hsleiden.nl)

**Abstract**

Aggression in youth prison is considered a major problem, probably interfering with treatment and rehabilitative goals, and creating an unsafe work environment for group workers. The present study examined how inmates' personality (dispositional characteristics) and living group climate (situational characteristics) contribute to aggression in a sample of 59 incarcerated delinquent boys. The results showed that open group climate was positively associated with agreeableness and openness and buffered against aggression through its positive effect on neuroticism. A repressive group climate was negatively associated with low neuroticism and proved to be unrelated to aggression. The discussion focuses on the importance of a positive living group climate for efficacious treatment and rehabilitation of incarcerated delinquent boys.

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**Key words:** group climate; youth prison; personality; Big Five; aggression

## **Introduction**

Aggression in youth prison – which refers to hostile, destructive, and/or violent behavior intended to cause harm or pain – is considered to be a serious problem, not only for young inmates but for staff as well (Harvey, 2005; Joint Dutch Inspections, 2007; Liebling & Maruna, 2005; Toch & Kupers, 2008). Some studies on aggression in youth prisons support a ‘dispositional’ or ‘import’ model, in which inmates’ characteristics, such as a propensity to behave aggressively, cause aggression (Delisi et al., 2009; Van Nieuwenhuijzen et. al, 2006). Other research (Dye, 2010; Gover, Layton Mackenzie, Styve, & Armstrong, 2000) supports a ‘situational’ or ‘deprivational’ model in which inmates react to the ‘pains of prison’ (loss of autonomy, humiliation, fear; Sykes, 1958), causing increased anger, stress, depression and anxiety (White, Shi, Mun, Hirschfeld, & Loeber, 2010), mutual hostility and aggression towards staff (Bracha, 2006, Whittle, Allen, Lubman, Yu’cel, 2006; Toch & Kupers, 2008). Gover, Mackenzie and Armstrong (2000), in their study on adjustment to youth prison, found empirical evidence for both models. The present study examines how young inmates’ personality (dispositional characteristics) and group prison climate (environment characteristics) contribute to aggression.

### *The relation between personality and aggression in juvenile delinquents*

Human personality can be described in terms of five dimensions, commonly designated as the ‘Big Five’ (McCrae & Costa, 1996): ‘neuroticism’, ‘conscientiousness’, ‘agreeableness’, ‘openness’ and ‘extraversion’. Digman (1997), replicated by DeYoung (2006), showed that associations among the Big Five dimensions can be explained by two

group climate, personality and aggression in incarcerated male youth

higher order factors, that is, stability (low neuroticism, agreeableness and conscientiousness) and plasticity (extraversion and openness).

There is empirical evidence showing that both juvenile and adult delinquents tend to have unstable personality traits (Trninić, Barančić, & Nazor, 2008), and that such unstable personality traits are associated with antisocial personality disorder (Saulsman & Page, 2004), a tendency to attribute hostile intent to others (Sato, Uono, Matsuura, & Toichi, 2009), and aggression (Bushman & Baumeister, 1998; Ostrowsky, 2010; for a review see: Van Goozen et al., 2007). The relations between on the one hand plasticity (extraversion and openness) and on the other hand delinquency and aggression, however, are still equivocal (e.g. Van Dam et al 2005), and there can be different impacts of extraversion and openness (e.g. Klimstra, Akse, Hale, Raaijmakers, & Meeus, 2010).

The dispositional or importational model (Gover, Mackenzie, & Armstrong 2000; Van der Helm, 2011) assumes that young inmates are at risk for aggressive behavior due to unfavorable personality characteristics, including high neuroticism, low agreeableness, and low conscientiousness (instability). Whether the plasticity dimension can explain aggression from the dispositional/importational model perspective too is still far from clear, but is exploratively examined in the present study.

### *Group climate in youth prison and aggression*

In youth prison, the social environment consists of delinquent inmates often showing a propensity to behave aggressively (Anderson & Ranckin, 2007). Ample research has shown that externalizing behavior, including aggression, can be contagious (Witvliet, 2009). In a situation where delinquent boys are forced to live together, aggression in the

## group climate, personality and aggression in incarcerated male youth

immediate environment can probably enhance aggressive behavior through emotional contagion (Baumann & DeSteno, 2010; Frijda, 1986,) and social learning (Dishion, McCord, & Poulain, 1999). Therefore, aggregation of delinquent inmates with antisocial tendencies is thought to increase aggressiveness at the living group, which may shape a negative group climate, reflected by repression and hostility. Recent research has shown that also group workers' professional behavior can shape group climate. The influence of group workers can be decisive in creating a more open (supportive) or closed (repressive) climate (Van der Helm, Boekee, Stams, & van der Laan, in press). The 'repression' construct pertains to the negative attitude of group leaders towards adolescent inmates, and consecutive feelings of anger, helplessness, depression and desolation, boredom and alienation (Harvey, 2006; Van der Helm, Klapwijk, Stams & Van der Laan, 2009).

A positive ('open') living climate is a structured, safe and rehabilitative environment, where support is high, opportunities for growth are evident, where flexibility is in balance with the organizational needs for control, and repression is minimal (Craig, 2004; van der Helm, Klapwijk, Stams & van der Laan 2009). In an 'open' climate incarcerated boys are motivated to connect to others in the environment, to take another person's perspective and show empathic responding (Chartrand & Dalton, 2008; Oettingen, Grant, Smith, Skinner, & Gollwitzer, 2006). This climate is thought to buffer against aggression at the living group by eliciting prosocial behavior, which counteracts aggressive tendencies resulting from instable personality traits (Janzing & Kerstens, 2002).

A repressive living group climate is characterised by distrust among young inmates and between inmates and group workers, contributing to mutual hostility.

## group climate, personality and aggression in incarcerated male youth

Hostility among young inmates is associated with aggression and violence as a means to maintain control (Cheng, Tracy, & Henrich, 2010; Van der Helm, Boekee, Stams & van der Laan, in press). A repressive group climate has been shown to result in low self worth, anxiety, and aggression (Ostrowsky, 2010; Thomaes, 2007). In fact, group climate in prison should be considered as both a precondition for and outcome of adolescent behavior. While young inmates' aggression can elicit repression by staff in order to maintain control, repression can subsequently aggravate aggression in inmates. This transactional mechanism (Sameroff, 2009) has been designated as a 'deviance amplifying feedback cycle' (Patterson & Bank, 1989), a 'coercive cycle with reciprocal negative reinforcement' (Gravine & Patterson, 2006) or a 'pathology amplifying cycle' (Baulieu & Bugental, 2009) and can result in a rapid deteriorating group climate, resulting in severe violence.

### *Group climate in youth prison and personality*

Advances in psychology and neuroscience question a trait-like property of personality and point to a more malleable nature of personality that is influenced by our social surroundings (Fraley & Roberts, 2005; Hassin, Uleman, & Bargh, 2005; Singer & Lamm, 2009). Fraley and Roberts propose a transactional model of personality change in that someone's personality has an effect on the social environment, which in its turn can influence individual personality characteristics. The role of transactional mechanisms in adolescent personality development could be especially strong in a secure environment, where eight to twelve delinquent boys with similar problems are living together, cannot



## group climate, personality and aggression in incarcerated male youth

leave the group, and cannot avoid each other and group workers (Van der Helm, et. al., 2009, Witvliet, 2009).

An open group climate is thought to have a positive effect on personality development (Chartrand, Dalton, & Fitzsimmons, 2008, Van der Helm, Stams, van der Stel, & van der Laan, submitted; Wikstrom & Treiber, 2009). Roberts, Wood and Smith (2005) propose that prosocial personality development is being directed by success in social roles, which is a major target in group therapy. Positive role-taking and openness towards the living group can be seen as a form of social investment and will elicit positive attention from group workers, who have been shown to have a great impact on young inmates' prosocial development (Arden & Linford, 2009; Van der Helm et. al. 2009, Van der Helm et. al, in press).

A repressive group climate is associated with a violent environment and a strict hierarchical system. Repeated violence in the immediate environment has been shown to change the hypothalamic-pituitary-adrenal axis (stress system) rapidly and influence the way we perceive others and their intentions (Fontaine, Burks, & Dodge, 1998; Miers, 2010), which may explain the tendency to attribute hostile intent in juvenile delinquents (Baumann & DeSteno, 2010; Orobio de Castro, Veerman, Koops, Bosch & Monshouwer, 2002). Recently, Tracy, Cheng, Robbins and Treszniewsky (2010) argued that hierarchically structured environments, like prisons, could induce emotional instability and poor mental health. Ostrowsky (2010) pointed in his recent review on the connection between violence and self esteem to the association between emotional instability and violence. Klimstra, Akse, Hal, Raaijmakers and Meeus (2010) found evidence for relations between neuroticism and aggression in their longitudinal research.

group climate, personality and aggression in incarcerated male youth

The present study examines relations among group climate, inmates' personality and aggression in a sample of incarcerated delinquent boys. We hypothesize a repressive group climate to be negatively related to low neuroticism, agreeableness and conscientiousness (the stability dimension, hypothesis one) and to be positively related to aggression (hypothesis two). An open climate (support, growth and a positive atmosphere) is hypothesized to be positively related to low neuroticism, agreeableness and conscientiousness and negatively related to aggression (hypothesis three). We also hypothesize that a negative relation exists between low neuroticism, agreeableness, conscientiousness and aggression (hypothesis 4). The relations among group climate, extraversion, openness (the plasticity dimension) and aggression will be exploratively examined.

## **Method**

### *Participants*

The present study was conducted in a Dutch youth prison. The sample consisted of 59 delinquent boys. The mean age of respondents was 17.4 years ( $SD = 1.79$ ) and the mean length of stay in the correctional facility was 10 weeks ( $SD = 2.3$ ). All delinquent boys participated voluntarily, signed an informed consent declaration and were told that their answers would be treated confidentially and anonymously and would be accessed only by the researchers. The response rate was 92%; three boys refused to participate and two were unable to participate because of disciplinary measures. As a token of gratitude for their participation, the boys received a telephone card of €2.50. All names on the

group climate, personality and aggression in incarcerated male youth

questionnaires and interview transcripts were deleted and given a code number. In order to protect the privacy of the adolescents, researchers had no access to the names.

### *Questionnaires*

Questionnaires were administered by specially trained graduate students of the Leiden School of Social Studies (Bachelor of Social Work and master of Youth care) and the University of Amsterdam (Department of Forensic Child and Youth Care Sciences).

*Prison Group Climate* (PGCI, Van der Helm, Stams & van der Laan, 2011). Items from the PGCI were derived from existing instruments measuring prison climate and were adapted for the living group setting. The PGCI consists of 36 items rated on a five-point Likert-type scale, ranging from 1 = 'I do not agree' to 5 = 'I totally agree'. Each item belongs to only one of the four scales for group climate. The support scale (12 items) assesses perceived professional behavior and in particular the responsiveness of group workers to specific needs of the inmates. Paying attention to inmates, taking complaints seriously, respect and trust are important characteristics of support. An example of a support item is: 'group workers treat me with respect'. The growth scale (8 items) assesses learning perceptions, hope for the future and giving meaning to the prison stay. An example of a growth item is: 'I learn the right things here'. The repression scale (9 items) assesses perceptions of strictness and control, unfair and haphazard rules and lack of flexibility at the living group. An example of a repression item is: 'You have to ask permission for everything here'. The group atmosphere scale (7 items) assesses the way inmates treat and trust each other, feelings of safety towards each other, being able to get some peace of mind and having enough daylight and fresh air. An example of a

group climate, personality and aggression in incarcerated male youth

relationship item is 'We trust each other here'.

For the purpose of this study, 'support' ( $\alpha = .88$ ), 'growth' ( $\alpha = .86$ ) and 'atmosphere' ( $\alpha = .78$ ) formed the 'open' climate scale ( $\alpha = .87$ ), while the 'closed' climate scale consisted of the 'repressive scale'. Reliability of both scales in this study was good (open climate  $\alpha = .87$ ; repression,  $\alpha = .77$ ).

*Aggression* was assessed with the Buss-Durkee Hostility Inventory. The BDHI was originally developed by Buss and Durkee (1957) and was revised by Buss and Perry (1992). Lange, Hoogendoorn and Widerspahn (1995), who translated the instrument into Dutch, found two independent factors: overt or direct aggression (20 items) and covert or indirect aggression (20 items), rated on a 'true'- 'not true' dichotomous scale. Direct aggression represents the combination of physical and verbal aggression. Anger and hostility are the core concepts of indirect aggression. Lange et al. (1995) reported excellent reliability and validity. An example of a 'direct aggression-item' was: 'If I am angry, I slam doors'. In this research reliability was found to be good for the direct aggression scale (Cronbach's  $\alpha = .76$ ), but reliability for the indirect aggression scale was unsatisfactory (Cronbach's  $\alpha = .42$ ). Indirect aggression could therefore not be examined in subsequent analyses.

*Personality* was assessed by means of Dutch version of the Big Five Inventory (BFI; John & Srivastava, 1999) with 43-items measuring neuroticism, conscientiousness, agreeableness, openness and extraversion. An example of a neuroticism item is: 'I am often sad or down' and an example of an agreeableness item was: 'I trust others'. Reliability was found to be satisfactory for all scales ('stability',  $\alpha = .68$ ; 'conscientiousness',  $\alpha = .61$ ; 'agreeableness',  $\alpha = .71$ ; 'openness',  $\alpha = .74$  and 'extraversion'  $\alpha = .62$ ).

group climate, personality and aggression in incarcerated male youth

Although instruments with more favorable psychometric properties exist, we deliberately chose to use a brief Big Five questionnaire that contains hardly any difficult sentences, but still has adequate psychometric properties. The brevity and low cognitive complexity of the instrument were considered important for use with adolescents having a short span of attention, and who generally have difficulties in comprehending difficult concepts and even written text or who may have mild intellectual disability.

*Socially desirable answering* was assessed with the social desirability scale (5 items,  $\alpha = .64$ ) of the Buss-Durkee Hostility Inventory -Dutch (BDHI=D, Lange et al. 1995). An example of an item is: 'I never detested anyone'.

#### *Statistical analyses*

The first paragraph of the results section presents the means and standard deviations of the group climate scales, the Big Five personality factors, direct aggression, and social desirability, and the correlations between these variables. Although it is common practice to use a multiple-comparison correction when several statistical tests are being performed simultaneously, we chose not to use such correction in order to preserve statistical power and because of the preliminary character of the correlational analyses. No firm conclusions can therefore be drawn from these preliminary analyses.

In the second paragraph of the results section, we conduct structural equation modeling to test a full model in which group climate is associated with the Big Five personality traits, and both group climate and the Big Five personality traits are associated with aggression. Although one might argue that the sample size is too small to conduct a SEM analysis, we considered the sample size sufficient given the favorable

ratio between the number of indicators and observations. To accommodate for the small sample size, we also used indicators of model fit that are not sensitive to sample size.

## Results

### *Preliminary analyses*

Table 1 presents the means and standard deviations of the group climate scales, the Big Five personality factors, direct aggression, and social desirability, and the correlations between these variables. Open group climate proved to be negatively associated with closed or repressive group climate ( $r = -.32, p < .05$ ) and direct aggression ( $r = -.30, p < .05$ ) and positively associated with agreeableness ( $r = .49, p < .01$ ). Repressive group climate was negatively associated with low neuroticism ( $r = -.24, p < .05$ ) and openness ( $r = -.26, p < .05$ ). Low neuroticism was negatively associated with extraversion ( $r = -.57, p < .01$ ) and positively associated with aggression ( $r = .29, p < .05$ ). Conscientiousness was positively associated with both agreeableness ( $r = .50, p < .01$ ) and openness ( $r = .61, p < .01$ ). Agreeableness was positively associated with openness ( $r = .52, p < .01$ ), extraversion ( $r = .41, p < .01$ ) and negatively associated with aggression ( $r = -.35, p < .01$ ). Finally, openness was positively associated with extraversion ( $r = .49, p < .01$ ).

### *Structural equation modelling*

A structural equation model was fitted to the data, testing a model in which group climate is associated with the Big Five personality traits, and both group climate and the Big Five personality traits predict aggression as the dependent variable. We chose only to present

## group climate, personality and aggression in incarcerated male youth

the best-fitting model. Fit-indices (CFI, TLI, and RMSEA<sup>5</sup>) and the model Chi-Square, also designated as the generalized likelihood ratio, were used to evaluate model fit (Kline, 2005). The following cut-off values are indicative of close model fit: NFI and CFI > .90, TLI > .95 and RMSEA < .06, whereas a non-significant Chi-Square indicates exact model fit (Arbuckle, 2005; Hu & Bentler, 1999; Kline, 2005).

The model showed an exact fit to the data when using a null hypothesis significance test:  $X^2(5) = 5.4, p = .37$ . Fit indices that are less sensitive to differences in sample size than the Chi-square test (Civo *et al.*, 2006) showed a good fit to the data: NFI= 0.94; CFI= 0.99; TLI = 0.96; RMSEA = 0.036. It can be derived from Figure 1 that repressive climate was negatively associated with low neuroticism ( $p = 0.03$ ). Open climate was positively associated with low neuroticism ( $p = 0.02$ ), agreeableness ( $p = 0.00$ ), and openness ( $p = .04$ ). Agreeableness was positively associated with openness ( $p = 0.00$ ). Finally, low neuroticism ( $p = 0.00$ ) and agreeableness ( $p = 0.04$ ) were both negatively related to direct aggression. We examined possible mediation by testing indirect effects using a bootstrap method in Amos (Arbuckle, 2005). Results show that the relation between open group climate and aggression was mediated by low neuroticism (Standardized indirect effect = .21; SE = 0.053,  $p < 0.05$ ). Other mediation tests did not yield significant effects. The relation between open group climate and aggression was not mediated by agreeableness, and the relation between repressive group climate and aggression was not mediated by low neuroticism.

## Discussion

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<sup>5</sup> CFI (Comparative Fit Index), TLI (Tucker-Lewis Index), NFI (Normed Fit Index) and RMSEA (Root Mean Square Error of Approximation) are indices of goodness of fit that are independent of sample size. Models that fit well score favourably on these fit-indices. For further references see Arbuckle (2007).

## group climate, personality and aggression in incarcerated male youth

This study examined the relations between group climate, personality traits and self reported aggression in a sample of incarcerated juvenile delinquents. Repressive group climate proved to be negatively associated with low neuroticism, but not with any of the other Big Five personality traits. Open group climate was positively associated with openness, agreeableness and low neuroticism, but not with conscientiousness and extraversion. We did not find a direct effect of repressive group climate on aggression. However, a relation between open group climate and aggression was found, which was fully mediated by low neuroticism.

The present study findings demonstrate that the dispositional and situational model should be examined in concert in order to be able to understand young inmates' aggression. Whereas open group climate buffered against aggression through its positive effects on low neuroticism, a repressive group climate did not affect aggression. The absence of an effect of a repressive climate on aggression is not in accordance with the deprivational hypothesis. It is possible that repression does not add or hardly adds to juvenile delinquents' personality problems and aggression, as repression could be a continuation of prior negative experiences with peers, parents and authorities within school or society at large (Anderson, 2000; Bugental, 2009; De Jong, 2007, Sato et. al., 2009; Van Spinhoven et al., 2010). In contrast, an open climate is thought to foster more positive social interactions in the lives of juvenile delinquents. The results of this study suggest that this experience could positively affect inmates' personality and aggression.

No relations were found between on the one hand conscientiousness, openness, extraversion and on the other hand aggression. Conscientiousness is thought to buffer against aggression through its association with planned behavior and control (McCrae &



group climate, personality and aggression in incarcerated male youth

Costa, 1994). In contrast to most research on the relation between personality and aggression, which has been carried out in the general population, this study was conducted with incarcerated juvenile delinquents. Youth prison offers very little opportunity for planned behavior and control (Harvey, 2007; Little, 1994; Van der Helm et al., 2009), which could explain the absence of an association between conscientiousness and aggression.

Relations between the two plasticity subtypes (extraversion and openness) and aggression were exploratively examined, because previous studies yielded equivocal results (De Young, Peterson, Sequin, & Tremblay, 2008), but no significant associations were found. It is therefore possible that extraversion and openness neither make incarcerated delinquent adolescents more vulnerable to aggressive behavior nor buffer against aggressive behavior. Research on this topic is still equivocal (Depue & Collins, 1999; De Young, Peterson, Sequin & Tremblay, 2008; Mc Crae & Costa, 1997; Miller & Lynam, 2001; Thomaes, 2007). Whereas extraversion was unrelated to both repressive and open group climate, openness proved to be associated with open group climate. This can be considered an important finding, since it is plausible that more openness to experience makes juvenile delinquents more susceptible to treatment. Van der Helm et al. (2009) found that open group climate was associated with greater treatment motivation. Future research should examine whether the relation between open group climate and treatment motivation is mediated by openness to experience.

There are some limitations of this study that need to be acknowledged. There are more aspects of adolescents' individual functioning that may have an impact on aggression, such as empathy, cognitive distortions and moral judgment (Joliffe &

## group climate, personality and aggression in incarcerated male youth

Farrington, 2004; Van der Helm, Giesen, van der Heide, & Stams, 2011; Stams et al., 2006; Oirobio de Castro et al., 2002) which are not addressed in this paper. Although we found no indication of social desirability bias in the self-report scales, we cannot rule out a general tendency of juvenile offenders to give socially desirable self- and other-descriptions (Breuk et al., 2007; Van der Helm et al. 2009). It should be kept in mind that living group climate is both a precondition for and outcome of adolescent behavior on the ward, which can be demonstrated only in longitudinal research using a cross-lagged panel design (Gershoff, Aber, & Clements, 2009) and multilevel analysis that takes into account that individual inmates are nested within living groups. Due to the cross-sectional nature of our study, it was not possible to examine transactional effects. The small sample size of our study did not allow for multi-level analysis in order to account for statistical dependency in hierarchically structured data (inmates are nested into living groups) and subsequently prevent chance capitalisation. Moreover, the small sample size and the inclusion of only one youth prison hamper the generalizability of the study findings. We used a short Big Five personality test of low cognitive complexity that hardly contains any difficult language and can be used in adolescents with a short attention span and difficulties in comprehending complex concepts and written text. Although the psychometric properties of this personality test are sufficient, other Big Five instruments exist, such as the NEO-PIR and the NEO-FFI, with in general more favorable psychometric properties (see Hoekstra, Ormel, & de Fruyt, 2011). Finally, possible effects of aggression treatment were not examined in this study. It should be noted that egotistic adolescents who benefit from a treatment program for aggressive behavior could exhibit less disruptive behavior on the ward, which may result in a better group climate.

## group climate, personality and aggression in incarcerated male youth

However, as the delinquent boys in our study did not attend an evidence-based treatment program during their stay in the institution, it is unlikely that regular group care may have had a positive effect on inmates' aggression. Notably, a recent comprehensive meta-analytic study of the effectiveness of institutional youth care showed that only (structured and manual-guided) evidence-based treatment, in stead of regular group care or treatment as usual, yielded positive intervention effects in institutional settings, with a small-to-medium effect size of Cohen's  $d = .36$  (De Swart et al., 2011). Because of the limitations of our study, the results presented here should be considered preliminary.

The present study is probably one of the first to examine the relation between group climate, personality and aggression in a youth prison. As our study only provides preliminary evidence of associations between a positive group climate, personality and aggression, results should be replicated in a prospective, longitudinal study that allows for the more dynamic examination of contextual effects by means of multi-level modelling (Gershoff et al., 2009). Despite its limitations, this study opens the way to further research into the effectiveness of residential interventions for delinquent boys (Garrido & Morales, 2007). Results of the present study can be used to inform group workers about the importance of a positive group climate. Moreover, some practical implications can be derived from the results of our study and comparable findings of a recent study of management of inpatient aggression in forensic mental health (Fluttert 2011):

1. Improving living group climate seems important to reduce aggressive tendencies with inmates (Van der Helm 2011).

group climate, personality and aggression in incarcerated male youth

2. Dispositional and situational factors as well as transactional mechanisms that may result in aggression should be better understood by both group workers and staff of secure correctional youth facilities.
3. Group workers should be trained to recognise early signals of aggression and improve conflict handling strategies that are in line with effective treatment of aggression (see Fluttert, 2011).

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group climate, personality and aggression in incarcerated male youth

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group climate, personality and aggression in incarcerated male youth

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*Table 1. Group Climate, Personality, and Aggression: Means, Standard Deviations and Correlations*

	M	SD	Open climate	Closed climate	Low neuroticism	Consciousness	Agreeableness	Openness	Extraversion	Direct aggression
Open climate	3.1	0.80								
Closed climate (repression)	1.7	0.76	-.32*							
Low neuroticism	2.2	0.55	-.00	-.24*						
Consciousness	3.8	0.57	-.07	-0.07	-.15					
Agreeableness	3.5	0.57	.49**	.15	-.07	.50**				
Openness	3.5	0.59	-.08	-.26 *	.21	.61**	.52**			
Extraversion	3.3	0.58	.08	-.15	-.57**	.23	.41**	.49**		
Direct aggression	1.5	0.56	-.30*	-.14	.29*	-.05	-.35**	.06	.03	
Social desirability	3.2	0.82	.22	.17	.19	.20	.23	.11	.21	-.23

\*  $p < .05$ , \*\*  $p < .01$ , (two-tailed significance),  $N=59$

Figure 1. SEM Model of Group Climate, Personality, and Direct Aggression

