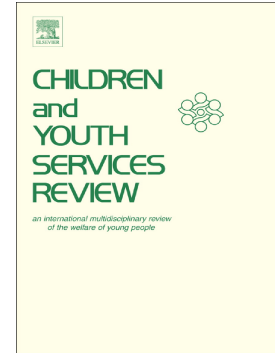


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## Determinants and Outcomes of Social Climate in Therapeutic Residential Youth

## Care: A Systematic Review

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**Disclosure of potential conflict of interest**

The authors declare that they have no conflict of interest.

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## Abstract

**Background:** Previous studies on effectiveness of therapeutic residential youth care (TRC) have indicated that, compared to short-term effects, long-term effects are less convincing. Moreover, there is limited evidence on how TRC achieves treatment goals: TRC remains too much of a “black box”. To gain durable treatment results we need to know more about how results are achieved, rather than investigating the achieved results itself. One of the factors associated with this process of change is the social climate within TRC institutions. Up until now, no literature reviews about how social climate is affected by institution and youth characteristics, and how social climate affects outcomes has been performed.

**Objective:** To provide an overview of the literature on associations between determinants and social climate and between social climate and outcomes in TRC.

**Method:** We searched multiple databases with a predetermined set of search criteria in the years 1990 and March 2017. We identified 8408 studies and reduced the final sample to 36 studies. Most studies were empirical assessments with a correlational design and were conducted in Western countries.

**Results:** Effect sizes for the studies ranged from small to large and varied between and within studies. Most associations were found between social climate and positive outcomes. The most mentioned social climate constructs were: an open climate, support, and autonomy.

**Conclusions:** The results are challenging to summarize due to variations in the concepts and operationalizations of social climate. The organizational culture must support a social climate which is supportive, structured and caring, and provide youth with an environment to grow. A positive social climate must constantly be evaluated and recreated based on combining the perspectives of residents, staff and external perspectives.

**Keywords:** Social climate, determinants, outcomes, therapeutic residential youth care, systematic review

## Introduction

Therapeutic Residential Youth Care (TRC) concerns the treatment and care of young people outside their family environment and aims to provide services to protect, care, and prepare young people for returning to life outside the institution (Harder & Knorth, 2015). These young people have been unable to live at home mainly due to parental problems or severe behavioral problems (Handwerk, Friman, Mott, & Stairs, 1998; Knorth, Harder, Zandberg, & Kendrick, 2008; Whittaker et al., 2016). Treatment usually takes place within a therapeutic holding and learning environment (Hair, 2005) and the number of institutions adhering to evidence-based treatment interventions is growing (De Swart et al., 2012). Recently, an international workgroup on therapeutic residential care created a consensus statement (Whittaker et al., 2016) using the following definition of TRC: “the planful use of a purposefully constructed multi-dimensional living environment designed to enhance or provide treatment, education, socialization, support, and protection to children and youth with identified mental health or behavioral needs in partnership with their families and in collaboration with a full spectrum of community-based formal and informal helping resources” (Whittaker, Del Valle, & Holmes, 2015, p. 24). Within this definition, we distinguish TRC from other types of residential care that serve other primary purposes, such as detention and basic care (e.g. non-therapeutic prisons and orphanages). The defining characteristic is the inclusion of a pronounced ‘therapeutic’ component.

Meta-analyses on outcomes in residential youth care (RYC) (e.g. De Swart et al., 2012; Grietens, 2002; Knorth et al., 2008; Scherrer, 1994) show small to moderate effects on improvement in emotional problems, a decrease in externalizing behavior problems, and less recidivism of adolescents re-admitted into residential care. However, long-term results show that the longer the follow-up period, the less convincing the effect of the intervention, while short-term effects show more positive results (Frensch & Cameron, 2002; Harder & Knorth,

2015; Knekt et al., 2016; Scherrer, 1994). Moreover, there is limited evidence for how RYC actually achieves treatment goals: RYC remains too much a “black box” (e.g. Harder & Knorth, 2015; Knorth, 2003; Libby, Coen, Price, Silverman, & Orton, 2005). In order to gain more durable positive treatment results we need to know more about how results are achieved, rather than investigating the achieved results (Harder & Knorth, 2015). One of the factors associated with this process of change is the living environment, hereafter denoted as social climate, within TRC institutions.

Social climate concept originates from social ecology and assumes that the behavioral direction of the individual is not determined solely by personality characteristics and individual needs, but also by the environmental demands (termed “press”) (Feagans, 1974; Murray, 1938; Stern, 1970). Social climate can be defined as the discrete, consistent and continuity of events containing collective elements in the “press”. This “press” is shared among individuals in the same environment (Moos, 2003). For example, when staff members always make sure the place is neat (continuous discrete event) and they make sure that everyone follows the house rules (“press”), the social environment may be perceived as organized. Social climate also relates to the concepts of Self-Determination Theory by Deci and Ryan (1985; 2000). The theory specifies that an environment that satisfies three innate basic psychological needs (competence, relatedness, and autonomy) is a necessity for growth and motivation to learn. In addition, the “common factors” in youth care (factors considered effective in any youth care intervention), including a clear structure and good relationships between staff and adolescents, illustrate the importance of having a positive social climate (Van Yperen, Van der Steege, Addink, & Boendermaker, 2010).

Studies have shown that a positive (or open) social climate consists of high levels of support and autonomy, low levels of repression and anger, and a clean, safe, clear and structured environment. In addition, an environment that focuses on targeting young people’s

problems and positive relationships between staff and young people is considered positive. A negative (or closed) social climate consists of lower levels of support, autonomy, staff-adolescent relationships and higher levels of repression, anger, non-clarity, and structure (Eltink, Van der Helm, Wissink, & Stams, 2015; Moos, 2012; Moos, 2003; Van der Helm, Stams, & Van der Laan, 2011). Social climates that adhere to the concepts of growth, support, and autonomy are thought to serve as the best conduciveness for the well-being of young people in TRC (Heynen, Van der Helm, & Stams, 2017; Strijbosch et al., 2014; Van der Helm, 2011).

According to the theoretical model of Moos and Lemke (1996), social climate in TRC can be regarded as an outcome factor for determinants and as a predictive factor for TRC outcomes. There can both be factors that have an effect on social climate (panel I and II) as well as aspects of social climate (panel III) that can affect care outcomes (panel IV and V). The framework thus emphasizes the central position of social climate in relation to determinants and outcomes (Moos, 2012; Moos & Lemke, 1996). Additionally, this model can be used to facilitate ‘matching’ the person with the environment in order to promote an environment most beneficial for positive treatment outcomes (Timko, Moos, & Finney, 2000).

Previous research has shown that social climate is an important factor for the well-being of young people in different types of TRC settings, such as child welfare (CW) (Glisson, Green, & Williams, 2012), RYC (e.g. Attar-Schwartz, 2013; Lanctôt, Lemieux, & Mathys, 2016; Pinchover & Attar-Schwartz, 2014), therapeutic youth prisons (YP) (e.g. Eltink et al., 2015; Van der Helm, Stams, Van der Stel, Van Langen, & Van der Laan, 2012), supported group homes (SG) (e.g. Brunt & Hansson, 2002a; 2002b), and mental health facilities (MH) (e.g. Ilgen & Moos, 2006; Schalast, Redies, Collins, Stacey, & Howells, 2008).

Up until now, limited research has been conducted on what can be considered social

climate determinants in a TRC context. Previous cross-sectional studies on the relation between determinants and social climate have shown that a small residential group size (Chipenda-Dansokho, 2003), publicly owned institutions, and institutions that adhere to routines and policies have a more positive social climate compared to larger, privately owned institutions and institutions that do not have structured policies (Moos, 2012). In addition, associations between social climate and previous treatment experiences (Picardi et al., 2006), psychiatric diagnoses, and behavioral problems (Attar-Schwartz, 2013; Attar-Schwartz, 2017) indicate that different environmental factors foster positive outcomes depending on the adolescents' problems. For example, adolescents showing externalizing behavioral problems benefit more from a highly structured environment, compared to adolescents showing internalizing behavioral problems (Timko et al., 2000).

Furthermore, studies have reported on associations between social climate and TRC outcome measures. For example, a positive social climate is positively associated with the development of adolescents' treatment motivation (Heynen et al., 2017), active coping strategies (Van der Helm, 2011), and higher levels of client and staff satisfaction about the treatment program (Mesman Schultz, 1992). On the other hand, a negative social climate is associated with more social and behavioral problems, peer victimization of adolescents during TRC (Pinchover & Attar-Schwartz, 2014; Sekol, 2016), and higher recidivism rates in therapeutic youth prisons (Van der Helm et al., 2012).

A comparison of the results proves to be difficult due to usage of various definitions of social climate (cf. group climate, living, physical, and psychosocial environment) (Brunt & Rask, 2012; Moos, 1974). Moreover, there are many different instruments to assess social climate and reliability and validity of those instruments for TRC is limited (Leipoldt, Kaye, Harder, Grietens, & Rimehaug, 2018; Tonkin, 2015). Consequently, we need more systematic knowledge of the social climate impact in TRC. The first aim of this systematic review is to



provide systematic knowledge on what constitutes a good social climate according to adolescents and staff members. The second aim is to formulate “what works for whom” principles regarding good quality of TRC for adolescents with psychosocial problems by identifying how determinants affect social climate and obtain a more accurate view of how social climate can improve treatment results in TRC (Harder & Knorth, 2015). The main questions this review will address are:

- Which determinants are related to a positive social climate in TRC?
- Which determinants are related to a negative social climate in TRC?
- What aspects of social climate in TRC are associated with positive outcomes of TRC?
- What aspects of social climate in TRC are associated with negative outcomes of TRC?

This systematic review is guided by the theoretical framework of Moos and Lemke (1996). Based on previous research, we expect that different determinants, such as staff and organizational, and youth characteristics are related to positive and negative social climates and that a positive social climate is associated with both positive and negative outcomes for youth and staff.

## Method

### Inclusion and Exclusion Criteria

Inclusion and exclusion criteria for this review are presented in Table 1. We chose to slightly modify the definition of TRC (Whittaker et al., 2015, p. 24) when evaluating studies for inclusion, because of practical concerns. We removed the following part: “in partnership with their families and in collaboration with a full spectrum of community-based formal and informal helping resources”, as we expected that not all studies would report on this aspect. In addition, we expected that not all TRC settings would utilize community-based resources (such as therapeutic youth prisons).

&lt;&lt;&lt; INSERT TABLE 1 HERE &gt;&gt;&gt;

**Evidence Acquisition**

This review adhered to the protocol of the preferred reporting items for systematic reviews and meta-analyses (PRISMA-P; Shamseer et al., 2015). We carried out a systematic literature search in the following databases between 1990 and the end of March 2017: ERIC, PsycINFO, SOCindex, Academic Search Premier, and Web of Science. The keywords that we used in the search are based on the Person, Intervention, and Outcome (PICO) model and are illustrated below.

*Person:* child\* OR adolescen\* OR juvenile\* OR youth\* OR teen\* OR young\*;

*Intervention:* residential OR therapeutic OR inpatient OR in-patient OR institution\* OR incarcerat\* out-of-home OR detention centre\* OR secure unit\* OR secure care OR secure resident\* OR secure unit\* OR institution\* OR group home\* OR children\* home\* OR hospitali?ed OR juvenile justice facilit\* OR correctional institution\* OR coercive treatment OR congregate care;

*Outcome:* (Social OR group OR relational OR correctional OR organi?ational OR therapeutic OR living OR institution\* OR psychosocial OR treatment OR ward) *climate* OR (social OR group OR relational OR correctional OR organi?ational OR therapeutic OR living OR institution\* OR psychosocial OR treatment OR ward) *environment* OR (social OR group OR relational OR correctional OR organi?ational OR therapeutic OR living OR institution\* OR psychosocial OR treatment OR ward) *atmosphere*.

The search terms between the PICO statements were entered with an AND statement and the search was performed on the field “All Text”, except for Web of Science, which was performed on the field “Topic”. We did not use keywords for the Control part, since this study does not exclusively focus on experimentally designed studies.

## Procedure

We carried out the search separately in each database. During the search we specified filters for age groups, time, and settings (see the abovementioned inclusion and exclusion criteria). We extracted the results from each database and uploaded them into Microsoft Excel where duplicate records were identified and omitted. To ensure a reliable selection procedure, three authors screened the identified records against the inclusion criteria.

We performed the selection procedure in three steps. First, the first author (JL) screened the titles yielded by the search against the inclusion criteria. Second, for the remaining studies, three authors screened the abstracts (JL, AH, and TR) and cases of inclusion uncertainty ( $n = 53$ ) were discussed until consensus was reached. Third, the first two authors (JL and AH) determined the eligibility of the remaining studies by reading the complete manuscript. To ensure literature saturation, we scanned the reference lists of the included studies resulting in no extra studies being included.

After determining the final selection, the first author assessed the quality of the included studies using critical review forms (Law et al., 1998; Letts et al., 2007). The critical review criteria consist of yes/no questions that provide an indication of study quality. The following aspects of each study were assessed in the quality evaluation: Study's purpose, justification, design, (justification of the) sample, reliability, validity, and appropriateness of measures and analyses. Finally, descriptions of results, adequacy of conclusions, and implications were assessed. If a criterion was met, one point was credited up to a maximum of 14 points for qualitative studies and 13 points for quantitative studies. Quality assessment was discussed with the second author and the awarded points were reported together with the characteristics of the study. The goal of this assessment was to provide a general quality indication of the strengths and weaknesses of the included studies. We did not base further decisions in this review (e.g. providing weights to conclusions) on quality assessment. The

main reason for this decision is the ambiguity that exist between the usage of different appraisal instruments and the contested relevance of quality assessment (Dixon-Woods, Shaw, Agarwal, & Smith, 2004; Hannes, Lockwood, & Pearson, 2010).

### Data synthesis and presentation

Figure 1 presents the inclusion flowchart with the number of identified records at each screening stage (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009).

<<<INSERT FIGURE 1 HERE>>>

A total of 8408 studies were identified and the final selection consists of 36 studies. All manuscripts were subject to a three-step qualitative synthesis. First, we extracted general study characteristics, such as country, setting, study design, participant statistics, focus, and a quality appraisal (Table 2). Next, we extracted the variables under investigation and reported the associations between determinants and a positive social climate (Table 3), determinants and a negative social climate (Table 4), social climate and positive outcomes (Table 5), and social climate and negative outcomes (Table 6).

For the included quantitative studies, we calculated standardized effect sizes to provide an indication of the strength of the reported association. This was not possible for eight studies due to missing of complete statistical information and we reported those studies in the qualitative sections. For Cohen's  $d$ , effect sizes of .20, .50, and .80 are considered small, medium, and high respectively. For Cohen's  $f^2$ , effect sizes of .02, .15, and .35 are considered small, medium and high respectively. For the product-moment correlation, effect sizes of .10, .30, and .50 are considered small, medium, and high respectively (Cohen, 1992), and for Cramer's  $V$  with one degree of freedom, values of .10, .30, and .50 are considered small, medium, and high respectively (Cohen, 1988). For Odds Ratio's ( $OR$ ), we used the following interpretation:  $OR < 1$  indicated a negative effect,  $OR$  close to 1 indicated no effect, and  $OR > 1$  indicated a positive effect.

### Study Characteristics

The characteristics and quality assessment of the included studies are shown in Table 2. Nearly all ( $n = 31$ , 86.1%) studies were performed in the USA, Australia, and European countries. Sample sizes ranged from 17 to 2043 participants. After correcting for studies that have re-used samples, this review involves 6775 adolescents ( $M_{age} = 14.84^1$ ,  $SD = 3.93$ , range 5-22) and 1980 staff members (with an age range of 20-64). The majority of the selected studies reported on RYC settings (47.2%) or therapeutic youth prisons (44.4%). One study (2.8%) reported on a mental health (MH) setting and two (5.6%) on a combination of RYC, YP, and MH settings. Quantitative study designs were most prevalent (77.8%), followed by qualitative designs (16.7%) and mixed-methods designs (5.6%). Most studies (69.4%) were concerned with the association of social climate and outcomes and eleven studies (30.6%) focused on associations of determinants with social climate.

<<<INSERT TABLE 2 HERE>>>

### Results

#### Associations Between Determinants and a Positive Social Climate

In the ten studies that focused on the associations between determinants and a positive social climate we identified a total of 27 different determinants and 20 different positive social climate variables. The significant results of the six quantitative studies, ordered by effect size strength and number of identified constructs, are presented in Table 3.

<<< INSERT TABLE 3 HERE >>>

The ‘strength-based treatment approach’, which has the most associations with positive social climate aspects, is a program description (and an assessment tool) designed to incorporate youths’ strengths into their individual treatment plans and in evaluation of those plans. Incorporating youths’ strengths is achieved by supporting efforts to repair harm, use

mistakes and past negative behavior as learning opportunities, encourage involvements in pro-social activities, build on positive mentoring opportunities, and identification and generation of resources to support the youth in being successful (Barton & Mackin, 2012; Barton et al., 2008). No significant associations to ‘order and organization’ and ‘personal problems orientation’ were found. Second, we found medium effect sizes for positive associations between improvement of youths’ perception of spontaneity, safety, autonomy, and having a positive focus on youths’ problems after implementing the Sanctuary treatment model in TRC. The main feature of the Sanctuary model is that the treatment environment is the core modality for modeling healthy relationships among interdependent members of the community and provide empowerment to youths to influence their own live (Rivard et al., 2005). Third, staff and adolescents in an open unit perceived the social climate as more positive compared to staff and adolescents in secure units (Langdon et al., 2004). The most important determinant of a positive social climate seems to be staff characteristics, especially more working experience (with the highest effect-size), is associated with a positive social climate.

The three qualitatively described studies mainly focus on program, organizational and staff characteristics as determinants of a positive social climate in TRC. For program characteristics, and in line with the strength-based treatment approach, Daly and Dowd (1992) show that a focus on positive aspects of youths characterize a positive social climate. Moreover, an intensive, structured, and less emotionally charged treatment program with varied activities and a daily routine are prerequisites to create a positive and safe social climate (Anglin, 2002; Caldwell & Rejino, 1993). Finally, active monitoring of program implementation, improving safety protocols with proper incident investigation, and integrating non-clinical staff members with protocols associate with a safe environment (Caldwell & Rejino, 1993). Staff characteristics, such as being responsive to youths, having

supervision protocols for staff members, continuous staff training, measures to prevent burnout, and clinical leadership associate with a perceived positive and safe environment by youth (Anglin, 2002; Caldwell & Rejino, 1993; Daly & Dowd, 1992). In terms of organizational characteristics, a small group size associates with a positive extrafamilial environment (Anglin, 2002; Daly & Dowd, 1992).

### **Associations Between Determinants and a Negative Social Climate**

The three studies that focus on the associations between determinants and a negative social climate include a total of six different determinants and thirteen different negative social climate variables. The significant results of these three studies, ordered by effect size strength and number of identified constructs, are presented in Table 4.

<<<INSERT TABLE 4 HERE>>>

Table 4 shows that youth having five or more previous placements perceive the social climate as more negative. Furthermore, staff members working in urban or rural facilities more often perceive a negative social climate compared to staff members working in middle-size city areas. Third, youths with a distressed pretreatment profile, which includes more internalizing, trauma-related symptoms, occurrence of substance abuse, and more personal problems in terms of self-doubt, self-blame, and low self-efficacy more often perceive the social climate as negative than youth with self-efficient and conflictual pretreatment profiles. Fourth, a severe pretreatment profile characterizes youths with internalizing problems, a tendency to dominate and control other people, a strong propensity to engage in disruptive behavior, many trauma-related symptoms, and being referred because of abuse also perceive the social climate as negative, more often than youth with self-efficient and conflictual pretreatment profiles. Besides the findings in Table 4, Langdon et al. (2004; study 20) report that adolescents within secure (vs. open) units report less supportive environments and room

for autonomy, while staff ratings regarding on support and autonomy were similar in both secure and open units.

### **Associations between Social Climate and Positive Outcomes**

The 22 studies that focus on the associations between social climate and positive outcomes include a total of 27 social climate variables and 53 different outcome variables. The significant results of the 14 quantitative studies are shown in Table 5 and are again ordered by effect size and number of identified constructs.

<<<INSERT TABLE 5 HERE>>>

The strongest associations with positive outcomes were found in five studies describing an open climate, defined as an environment with high levels of staff support, peer support and youth autonomy, low levels of youth repression and anger, and a clean, safe, clear and structured environment. On the other hand, a closed climate, which consists of lower levels of youth support by staff, perceived autonomy by youth, higher levels of repression, anger, non-clarity, and structure show one small effect size in association with positive outcomes. Second, the constructs caretaker support, peer support, and caretaker and peer support in combination are associated with positive outcomes in terms of focusing on youths' cognitive strategies and a lower odds ratio for being classified as a bully or a victim of bullying. Third, we found small to medium effect sizes for positive associations between higher levels of youth growth and a positive atmosphere and the positive outcomes youths' lower scores on problematic reactions to social problem situations and aggression. Finally, for staff members, we found positive associations between treatment structure and positive outcomes in terms of staffs' perception of safety, innovation, work motivation, and perception of transformational leadership.

In the ten qualitative studies, we found that an open climate is associated with positive outcomes in terms of youths' perceived autonomy, motivation to work on their own problems,



staff members having attention for youths' feelings (Van der Helm et al., 2009), and experiencing less staff punishment and aggression by delinquent peers (De Valk et al., 2015). Second, staff support is associated with secure attachment, successful adaptation after treatment, higher treatment motivation, and positive behavior of youth (Mathys, 2017). Moreover, higher caretaker support is associated with less runaway from care (Attar-Schwartz, 2013), physical victimization by peers (Khoury-Kassabri & Attar-Schwartz, 2014), and less physical and verbal maltreatment by RYC staff (Attar-Schwartz, 2011). For peer support, Mathys (2017) shows positive associations with youths' solidarity enhancement, lower stress levels, and less peer contagion behaviors. Fourth, balanced levels of staff control is associated with a perceived democratic parenting style and less anxiety, dropout, and misconduct by youth (Mathys, 2017). Fourth, a positive organizational climate profile (which consists of high levels of staff and youth engagement and functionality with low levels of stress) is associated with more treatment success (e.g. increased skills, accomplished goals, reduced risk behavior), more discharges to less intensive treatment settings (Wolf et al., 2014), and less aggression towards peers and less property destruction by youth (Izzo et al., 2016). Fifth, in a mental health setting, youths' perception of structure, staff containment, and treatment program involvement are associated with a decrease in problem behavior (less conflict), more trust in treatment effectiveness, and development of peer helping relationships, respectively (Creedy & Crowe, 1996). Finally, a positive social climate, consisting of high caretaker support, youth satisfaction levels, and low levels of strictness is associated with less adjustment difficulties among youths (Pinchover & Attar-Schwartz, 2014).

### **Associations between Social Climate and Negative Outcomes**

In the eight studies that focused on the associations between social climate and negative outcomes we identified a total of eight social climate variables and 11 negative

outcome variables. The significant results of four quantitative studies are shown in Table 6 and are again ordered by effect size.

<<<INSERT TABLE 6 HERE>>>

Table 6 shows that the youths' perceived repression by staff members, is associated with medium effect sizes to six specified negative outcomes related to youths' reaction to social problem situations. Second, there is a large effect size for the association between more staff control and more externalizing youth problems. Third, we find small effect sizes for associations between staff's autonomy granting, warmth and more internalizing youth problem. These associations are only documented in one study each.

Four studies with associations between social climate and negative outcomes are described qualitatively. First, youths' perception of a closed climate associates with more feelings of strictness, unfair rules, more group punishment versus individual punishment, lack of attention and trust, boredom, lack of perspective, and perception of differential treatment from group workers (Van der Helm et al., 2009). Second, youth's perceptions of staff strictness are associated with more physical peer victimization (Khoury-Kassabri & Attar-Schwartz, 2014) and verbal and physical maltreatment by staff members (Attar-Schwartz, 2011). Finally, staffs' perception of their workload and work fairness is associated with more internalizing problems of youth (Jordan et al., 2009).

## Discussion

The main aim of this systematic literature review was to identify associations between determinants and both positive and negative outcomes of social climate in TRC. Out of 8408 studies from various sources we eventually included 36 studies of which 12 studies focused on the association between determinants and social climate and 24 on the association between social climate and outcomes. As expected, the results are challenging to summarize due to

variations in the concepts and operationalizations of social climate. Most evidence was found for associations between social climate and positive outcomes, followed by associations between determinants and social climate, and least for social climate associations with negative outcomes. Nearly all studies used cross-sectional designs and the quality of the included studies was above average.

As expected in our first hypothesis, the results showed that a wide variety of determinants in terms of staff, youth, and organizational characteristics were associated with a positive social climate. Staff members that incorporate youths' strengths into their daily live and treatment plans were associated with youths' positive perception of the social climate. Furthermore, we found that staff members who are satisfied with their jobs in terms of leadership, working with protocols, working day shifts, having less burnouts, and having more work experience, report more positive views on social climate in terms of authority, structure and perceiving the environment as safe. These aspects are in line with studies in related fields, which showed that positive expectations and affective communication skills of the therapist are associated with higher academic achievement and less anxiety in youth (Cheung, Lwin, & Jenkins, 2012; Dill, Flynn, Hollingshead, & Fernandes, 2012; Verheul, Sanders, & Bensing, 2010). For youth, determinants that promote a positive social climate are feelings of involvement in the treatment program, being supported, living in an open unit, and having a social personality match with the therapist. For determinants in terms of organizational characteristics, TRC programs that are small in size, structured, have daily intensive routines and protocols in place for dealing with incidents are related to a positive social climate. These program aspects create more space for a constructive focus on treatment of behavioral problems, and promote a sense of autonomy in youths (Anglin, 2002; Caldwell & Rejino, 1993). TRC settings should carefully evaluate how their organization is built up, which protocols are in place, and how their work routines are organized in order to facilitate

safe and positive social climate (Ainsworth & Fulcher, 2006).

With regard to determinants associated with negative perceptions of social climate, we found associations between having experienced five or more previous placements and less getting along with staff, and receiving less positive attention from staff. A possible interpretation is that the placement history resulted in feelings of hopelessness and less confidence in the treatment, because it has failed many times in the past (Bollinger, 2017). In line with this finding, we also found that youths who have distressed and severely disturbed pretreatment profiles tend to interpret the social climate as more negative (Lanctôt et al., 2016). This indicates that the specific problems that youth have when entering TRC moderates their experience of the climate and requires consideration in order to tailor treatments plans that may promote positive outcomes. For staff, we found that working in urban and rural areas were less satisfied with their organization and perceived more stress on the job, compared to staff working in small-sized cities. This result expands the importance of staff satisfaction to the possibilities and limitations represented by the larger environment where the institution is located.

This review found that the major portion of the included studies investigated associations between social climate factors and positive outcomes in TRC. Youths experiencing an open climate, support, growth, a positive atmosphere, and clear structure was associated with the most positive outcomes. These aspects help youths increasing treatment motivation, stimulate active coping strategies, well-being, resilience, and treatment satisfaction. These factors also promote less aggression, bullying, and problems with solving social problems among youths, and is associated with passive leadership. This highlights the importance for TRC to focus on having supportive and structured environments (Ainsworth & Fulcher, 2006), including opportunities for youth to experience autonomy and have a say in the treatment program (Moore, McArthur, Death, Tilbury, & Roche, 2018).

The fourth research question regarding negative outcomes, showed that youth experiencing a climate with autonomy granting and support were related to more internalizing problems among youths. This could be interpreted as an adaptation to problems the youth has brought with them into TRC rather than resulting from these climate characteristics. The association could also reflect a reduction in externalized problems with a shift towards internalized outcomes. However, this does not necessarily mean that that autonomy and support result in internalized problems. Longitudinal studies are needed to investigate these and other interpretations.

### **Strengths and Limitations**

The primary strength of this review is that it is the first to systematically identify social climate determinants and outcomes in TRC. Second, the review had a broad focus, which has enabled us to identify many variables which contributes to a more complete picture. The results may prove to be valuable when recommending policies and practices for TRC, and for improving and tailoring the social climate in existing TRCs. It enables us to better answer the question: what works for whom in TRC.

As any other study, our review also has some limitations. The first limitation is that the effect sizes should be interpreted with caution as some were calculated with only small sample sizes (Barton & Mackin, 2012; Barton et al., 2008) and several results and studies are based on the same/reused sample. We did not perform a meta-analysis, because of the broad nature of this review, and therefore we could not compare the effects of different aspects of social climate with each other. The second limitation is that most of the studies included in this review were cross-sectional studies with correlational designs. This makes it difficult to formulate causal links between social climate, determinants, and outcomes. Third, although the broad review is also a strength, it implied including several different and partly overlapping social climate constructs and outcome indicators, which makes it challenging to

summarize the results and dubious to point to some as more important than others. Finally, we only focused on published literature and significant findings while omitting books, dissertations, and non-published studies. This may have resulted in a biased selection of determinants, social climate variables, and outcome indicators.

### **Future Directions and Implications**

Despite these limitations, some future directions for research, policy, and practice can be identified. The reported determinants, social climate constructs, and outcome variables should be examined in an integrated empirical longitudinal study to investigate how these constructs function together as most studies entered into our review examined them separately and cross-sectionally. Factors may moderate and interact with each other, especially between individual characteristics, experiences, and program factors, which is relevant to the issue of “what works for whom”. Factors within each panel may also fade each other out due to overlap. The abundance of over 50 different social climate aspects, indicates the need for an overarching integrative model of social climate aspects, potentially reducing the number of constructs and factors.

This review has some potential concrete implications for TRC treatment staff and managers. Treatment staff can gather information regarding strengths of the young people and discuss how these strengths can help them when faced with difficult situations during treatment. In addition, this can also help staff to have a concrete focus on positive aspects of the youth compared to only focusing on problematic behaviors. Furthermore, managers should ensure continuous training programs for staff members, because this has positive effects on organizational satisfaction and can lead to less incidents. This study has also shown that different youth characteristics, such as treatment history and trauma related problems of a youth does have implications for the perception of the social climate. Staff members should therefore consider how these factors have shaped a young person’s perceptions of group care

and intervene in an early stage to ensure that both staff members and the social climate remains positive. Finally, a relevant recommendation for policy and evaluation is that information in this review can be used to critically evaluate TRC settings on how social climate is shaped by the determinants and whether the current living environment is adequate to promote positive outcomes. They can use these specific findings to improve organizational culture, procedures, staffing and the tailoring between youth characteristics and the program. As this review has also demonstrated that evidence-based treatment models are relevant for social climate, these aspects together with determinants for a positive social climate and aspects of a positive social climate can be integrated into a measure of quality assessment domains for TRC (Daly et al., 2018). By utilizing a quality framework, policy makers can continue to monitor and improve the provided care in TRC.

## **Conclusion**

Social climate seems to profit from a location which is surveyable, but has varied opportunities for activity, growth and learning. Staff should be selected, educated, trained and cared for, and given adequate working conditions, procedures and support systems. The organizational culture must support a social climate which is supportive, structured and caring, and provide youth with an environment to grow as formulated by Ainsworth and Fulcher (2006). A positive social climate must constantly be evaluated and recreated based on combining the perspectives of residents, staff and external perspectives. The general aspects of a good social climate are rather well developed, so the “black-box problem” in TRC (Harder & Knorth, 2015) does no longer need to continue. However, our knowledge about causal links and “what works for whom” – tailoring social climate to youth characteristics - is still underdeveloped and will require future attention.

## Notes

<sup>1</sup> This statistic is based on a weighted mean and standard deviation from studies ( $n = 19$ ) where means and standard deviations were reported. This was the case for a total of 4531 participants.



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Table 1

*Inclusion and Exclusion Criteria*

Category	Inclusion criterion	Exclusion criterion
Intervention setting	Residential therapeutic program <sup>1</sup> or prison with therapeutic program or combined samples with one of the included settings.	Foster care, outpatient setting, combined care, medical setting, school setting, and prisons without therapeutic program.
Research respondents	Adolescent residents with a mean age between 12 and 18 and at least 80% of sample within the age range 10-23 years old, staff member, or registry data.	More than 20% of the sample above 23 years of age and the mean age outside the range of 12-18.
Key variables	Social climate measure <sup>2</sup> and potential determinants <sup>3</sup> or potential outcome measures <sup>4</sup> .	Qualitative non-structured interpretation of observations or responses.
Research methods	Qualitative and quantitative studies Cross-sectional studies, reviews, meta-analyses and RCT studies.	Case studies and review studies with less than 50% included studies with a measurement of social climate.
Cultural and linguistic range	Written in or translated to English or Dutch. Studies can be conducted in any country.	Other languages than Dutch or English.
Time Frame	Research published from 1990 up until March 2017.	Studies before January 1990.
Publication type	Scientific peer-reviewed articles.	Conference abstracts, books, chapters, dissertations, and reports.

1 Definition of residential therapeutic program: a purposefully constructed multi-dimensional living environment designed to enhance or provide treatment, education, socialization, support, and protection to children and youth with identified mental health or behavioral needs.

2 Definition of a measure for social climate: Structured scoring criteria or categorization of responses and observation of social climate.

3 Examples of relevant determinants that may predict social climate are institutional size, staff characteristics, routines, and organizational characteristics.

4 Examples of relevant outcome measures for social climate are behavior problems, goal realization, and treatment satisfaction.

Table 2

*Characteristics of Included Studies*

Study	Country	Type of TRC <sup>1</sup>	Design <sup>2</sup>	N <sup>3</sup>	Participants	Mean age (SD) [range]
1. Anglin (2002)	AUS	RYC	QL – Policy	N/A	-	N/A
2. Attar-Schwartz (2011)	ISR	RYC	QN – CS	1324	Youth (54% male)	14.06 (3.1)
3. Attar-Schwartz (2013)	ISR	RYC	QN – CS	1324 <sup>5</sup>	Youth (54% male)	14.06 (3.1)
4. Barton & Mackin (2012)	USA	YP	QN – SCD	17	Youth	[15-18]
5. Barton, Mackin, & Fields (2008)	USA	YP	QN – SCD	17 youth, 12 staff	Youth (100% male)	[15-18]
6. Bastiaanssen et al. (2012)	NLD	RYC	QN – CS	212	Youth (64% male)	12.63 (3.8)
7. Caldwell & Rejino (1993)	USA	RYC	QL – RVW	N/A	-	N/A
8. Creedy & Crowe (1996)	NZ	MH	QL – RVW	N/A	-	N/A
9. Daly & Dowd (1992)	USA	RYC	QL – Policy	N/A	-	N/A
10. De Valk et al. (2015)	NL	YP	QL – RVW	114 studies	-	N/A
11. Eltink, Van der Helm, Wissink, & Stams (2015)	NL	RYC, YP	QN – CS	128 RYC: 105 YP: 23	Youth (n=105), RYC (55.2% male), YP: (100% male)	RYC: 15.7 YP: 17.0 [14-18]
12. Hoag, Primus, Taylor, & Burlingame (1996)	USA	RYC	QN – RCT	21	Youth (47.6% male)	
13. Izzo et al. (2016)	USA	RYC	QN – COH	11 agencies 264 youth 143 staff	Youth and staff members	Youth: [7-14]
14. Jordan et al. (2009)	USA	RYC	QN – CS	407 youth, 349 staff	Youth (59% male) Staff members	Youth: 14
15. Khoury-Kassabri & Attar-Schwartz (2014)	ISR	RYC	QN – CS	1324 <sup>5</sup>	Youth (54% male)	14.06 (3.1)
16. Lancot et al. (2016)	CAN	RYC	QN – CS	153	Youth (100% female)	15.3 (1.31)
17. Langdon, Cosgrave, & Tranah (2004)	UK	YP	QN – CS	43 youth 49 staff	Youth (100% male), Staff	Youth: 14 Staff: [22-25]
18. Marsh, Evans, & Williams (2010)	USA	YP	QN – CS	543	Youth (71% male)	Males: 16 Females: 22, Female: [13-21]
19. Mathys (2017)	BE	YP	QL – RVW	-	Unknown number of studies	-
20. Minor, Wells, & Jones (2004)	USA	YP	QN – CS	107	Staff (67% male)	Median 20
21. Mota & Matos (2015)	PT	RYC	QN – CS	246	Youth (46.3% male)	14.87 (1.7)
22. Palareti & Berti (2010)	IT	RYC	QN – CS	59	Youth (55.9% male)	16.2 (1.9)
23. Wolf, Dulmus, Maguin, & Cristalli (2014)	USA	RYC, YP, MH	QN – CS	2043 youth, 1273 staff	Youth and staff members	Aggregate
24. Pinchover & Attar-Schwartz (2014)	ISR	RYC	QN – CS	1324 <sup>5</sup>	Youth (54% male)	14.06 (3.1) [11-19]
25. Rivard, Bloom, McCorkle, & Abramovitz (2005)	USA	RYC	QN – SCD	158	Youth (63% male)	15.0 [12-21]
26. Scholte & Van der Ploeg (2000)	NL	YP	QN – SCD	200	Youth (67% male)	15.3 (1.7)
27. Sekol (2016)	CRT	RYC	QN – CS	272	Youth (68% male)	15.5 [11-21]
28. Southwell & Fraser (2010)	AUS	RYC	QN – CS	169	Youth	Median 14
29. Towberman (1992)	USA	YP	QN – CS	96	Youth (100% female)	15.4 [13-18]
30. Van der Helm, Klapwijk, Stams, & Van der laan (2009)	NL	YP	QN/QL – CS <sup>6</sup>	49	Youth (77.6% male)	16.5 (1.28)



31. Van der Helm, Boekee, Stams, & Van der Laan (2011)	NL	YP	QN/QL – CS <sup>7</sup>	59	Staff members (40% male)	32.2 (7.4)
32. Van der Helm et al. (2012)	NL	YP	QN – CS	59 <sup>5</sup>	Youth (100% male)	17.4 (1.79)
33. Van der Helm, Stams, van Genabeek, & Van der Laan (2012)	NL	YP	QN – CS	59 <sup>5</sup>	Youth (100% male)	17.4 (1.79)
34. Van der Helm, Wissink, De Jongh, & Stams (2012)	NL	YP	QN – CS	264	Youth (84.4% male)	14.0 (2.5)
35. Van der Helm et al. (2013)	NL	YP	QN – CS	128	Youth (62% male)	15.7 (1.4)
36. Van der Helm, Beunk, Stams, & Van der Laan (2014)	NL	YP	QN – CS	59 <sup>5</sup>	Youth (43% male)	16.1 (1.5)

*Note.* Quality ratings for the included studies ranged between 5 and 12 points (on a maximum of 13 for quantitative and 14 for qualitative studies;  $M = 9.38$ ,  $SD = 1.70$ ). Nearly all quantitative studies described usage of reliable and valid measurements to examine social climate and determinants or outcome variables. Eight studies did not report on ethical considerations. Quality ratings were not applied (noted as N/A) in policy and review studies, because the appraisal instrument was more suited for empirical studies.

1 MH = mental health setting; YP = therapeutic youth prison; RYC = residential youth care.

2 QN = quantitative study; QL = qualitative study; RVW = review study; SCD = single case design; COH = cohort study; RCT = randomized control trial; CS = cross-sectional design.

3 N/A = not applicable due to review study types.

4 D = study focus on determinants; O = study focus on outcomes.

5 Studies using the same sample as other included studies; Study 2 = Study 3, 15 and 24; Study 31 = Study 32, 33 and 36.

6 Data was gather by performing unstructured interviews based on a topic list. All interviews were written out verbatim, transcribed, and coded. Afterwards, thematic analysis was done to identify the most important themes.

7 The findings for this study were based on unstructured interviews. All interviews were written out verbatim, transcribed, and coded into aspects related to an open and closed social climate.

Table 3

*Significant Associations Between Determinants and a Positive Social Climate*

Study <sup>1</sup>	Determinant	Positive Social Climate	Effect <sup>2</sup>
4, 5 <sup>3</sup>	Strength-based approach treatment program	Perceived staff and peer support	$d = \mathbf{1.0}$ , .3
		Room for expressiveness of feelings	$d = \mathbf{.95}$
		Clarity of treatment program rules	$d = \mathbf{.75}$ , .0
		Perceived autonomy by youth	$d = \mathbf{.73}$
		Perceived involvement by youth	$d = .32^3$
		Less perceived staff control by youth	$d = .09^3$
		Perceived practical orientation by youth	$d = .21^3$
25	Sanctuary treatment model <sup>4</sup>	Spontaneity of youth	$d = .45$
		Youth's perceived support	$d = .39$
		Perceived safety of youth	$d = .36$
		Youth's perceived autonomy	$d = .34$
		Problem orientation of youth <sup>5</sup>	$d = .34$
17	Staff and adolescents in an open unit	Perceived staff and peer support	$d = \mathbf{.54}$
		Perceived practical orientation by youth	$d = .44$
		Clarity of treatment program rules	$d = .43$
20	Previous work experience at private facilities	Positive perception of authority and structure by staff	$f^2 = .12$
		More facility satisfaction by staff	$f^2 = .06$
	Staff with completed academy training	More organizational satisfaction by staff	$f^2 = .12$
		More job satisfaction by staff	$f^2 = .10$
	More years of working experience	More facility satisfaction by staff	$f^2 = \mathbf{.55}$
	Older employees		$f^2 = .10$
	Male staff members		$f^2 = .08$
	Staff members working in day shifts	Positive perception of authority and structure by staff	$f^2 = .06$
18	Ethnicity (non-White youth)	Engaged vs. balanced relationship with staff <sup>6</sup>	$OR = .54$
	More perceived social support by youth		$OR = .41$
	More perceived program belonging by youth		$OR = .39$
29	Personality match between youth and therapist on poise, ascendancy self-assurance, and interpersonal adequacy	Program <sup>7</sup>	$f^2 = .15$
		Relationship <sup>8</sup>	$f^2 = .08$

<sup>1</sup> The study numbers correspond to the studies reported in Table 2.

<sup>2</sup>  $d$  = Cohen's  $d$ ,  $f^2$  = Cohen's  $f^2$ ,  $OR$  = Odds Ratio. Medium and high effect sizes marked in bold.

<sup>3</sup> This effect size indicates follow-up data compared with post-implementation data of the strength-based approach treatment program.

<sup>4</sup> The effect sizes related to the Sanctuary treatment model indicate how social climate improved after implementation as compared to standard residential services (treatment as usual).

<sup>5</sup> This construct relates to seeking to understand youth feelings and personal problems (Moos, 2009).

6 An engaged social climate is defined by high levels of satisfaction and closeness and low levels of coping. A balanced social climate consists of high levels of satisfaction, coping and closeness (Marsh et al., 2010).

7 Aggregated score of scales describing perceived autonomy, room for anger and aggression, practical and personal problem perceived by youth (Moos, 2003).

8 Aggregated score of scales describing perceived support, involvement, and room for spontaneity perceived by youth (Moos, 2003).

Table 4

*Significant Associations Between Determinants and a Negative Social Climate*

Study <sup>1</sup>	Determinant	Negative Social Climate	Effect Size
28	Having five or more previous placements <sup>3</sup>	Less getting along with caregivers Caregivers care less for what is best for youth Caregivers listen less to youth	V V V
20	Previous work experience at private facilities	Negative staff perception of supervision	f <sup>2</sup>
	Staff working in urban facilities	More job stress Less organizational satisfaction	f <sup>2</sup> f <sup>2</sup>
	Staff working in rural facilities	Less facility satisfaction More job stress	f <sup>2</sup> f <sup>2</sup>
16	Distressed vs. self-efficient pretreatment profile <sup>4</sup>	Unsafe, connected <sup>6</sup> vs. healthy social climate <sup>9</sup>	OR
		Unsafe, connected <sup>6</sup> vs. safe, disconnected social climate <sup>7</sup>	OR
		Unhealthy <sup>8</sup> vs. healthy social climate <sup>9</sup>	OR
		Unhealthy <sup>8</sup> vs. safe, disconnected social climate <sup>7</sup>	OR
	Severe vs. self-efficient pretreatment profile <sup>4</sup>	Unsafe, connected <sup>6</sup> vs. healthy social climate <sup>9</sup>	OR
		Unhealthy vs. healthy social climate	OR
		Unsafe, connected vs. safe, disconnected social climate	OR
	Distressed vs. conflictual pretreatment profile <sup>5</sup>	Unsafe, connected <sup>6</sup> vs. safe, disconnected social climate <sup>7</sup>	OR
		Unhealthy <sup>8</sup> vs. safe, disconnected social climate <sup>7</sup>	OR
	Severe vs. conflictual pretreatment profile <sup>5</sup>	Unsafe, connected <sup>6</sup> vs. safe, disconnected social climate <sup>7</sup>	OR

<sup>1</sup> The study numbers correspond to the studies reported in Table 2.

<sup>2</sup> f<sup>2</sup> = Cohen's f<sup>2</sup>, V = Cramer's V, OR = Odds Ratio.

<sup>3</sup> As compared with having one up to and including four previous placements.

<sup>4</sup> A self-efficient pretreatment profile characterizes youth that exhibited the fewest problems. They are less disruptive, have fewer anger problems, less trauma-related symptoms, and showed a strong self-efficacy.

<sup>5</sup> A conflictual pretreatment profile characterizes youth with anger management problems and problems with maintaining healthy relationships with others, also showing few internalizing symptoms and having conflictual relations with their teachers.

<sup>6</sup> Youths' perception of an unsafe but connected social climate is characterized by feelings of unsafety within their group, higher chances of having experienced verbal and indirect aggression, but feelings of connections with their peers and showing trusting relationships. They perceive care workers as warm, close, and fair with having a voice in the unit.

<sup>7</sup> Youths' perceptions of a safe but disconnected social climate is the opposite of the above described profile with having the worst relationships with care workers and feelings of less support, clarity, equity, and more unfairness.

<sup>8</sup> Youths' perceptions of an unhealthy social climate is characterized by poor relationships with peers, feelings of unsafety, relationships with care workers that lack closeness, warmth, unfair practice, and low autonomy.

9 Youths' perceptions of a healthy social climate is the opposite of the unhealthy social climate. They show considerably more positive relationships with their peers and care workers, being valued, perceive the rules and procedures as fair and feel less unsafe.

Table 5

*Reported Social Climate Constructs and Significant Associations with Positive Outcomes*

Study <sup>1</sup>	Social climate construct	Positive Outcome	Effect <sup>2</sup>
34, 36, 30	Open climate	Youths' treatment motivation	$r = .70, .66, .57$
30		Internal locus of control	$r = .47$
33		Agreeableness personality trait	$r = .49$
36		Detention length	$r = .39$
34		Active coping strategies	$r = .50$
33		Youths' direct aggression	$r = -.30$
35	Caretaker support	Problems with accepting authority <sup>3</sup>	$r = -.48$
		Youths' indirect aggression	$r = -.43$
		Experiencing disadvantage <sup>3</sup>	$r = -.40$
		Problems with accepting/giving help <sup>3</sup>	$r = -.35$
		Youths' direct aggression	$r = -.32$
		Problems with competition <sup>3</sup>	$r = -.19$
	Youth growth <sup>4</sup>	Problems with accepting authority <sup>3</sup>	$r = -.37$
		Youths' indirect aggression	$r = -.36$
		Experiencing disadvantage <sup>3</sup>	$r = -.31$
		Problems with competition <sup>3</sup>	$r = -.30$
		Problems with accepting/giving help <sup>3</sup>	$r = -.25$
		Youths' direct aggression	$r = -.21$
	Positive atmosphere <sup>5</sup>	Youths' indirect aggression	$r = -.45$
		Experiencing disadvantage <sup>3</sup>	$r = -.33$
		Problems with accepting/giving help <sup>3</sup>	$r = -.30$
		Problems with accepting authority <sup>3</sup>	$r = -.27$
32		Youths' cognitive empathy	$r = .27$
35		Youths' direct aggression	$r = -.19$
31	Treatment program structure	Innovation of treatment program	$r = .55$
		Transformational leadership	$r = .45$
		Staffs' perception of safety	$r = .45$
		Staffs' work motivation	$r = .39$
		Passive leadership	$r = -.27$
27	Peer support	Bully classification	$OR = .89$
		Victim classification	$OR = .86$
32	Caretaker and peer support	Youths' cognitive Empathy	$r = .27$
21	Relationship to significant caregivers	Youths' well-being	$f^2 = .16$
		Resilience of youth	$f^2 = .13$
11	Positive living group climate <sup>6</sup>	Less social problem situations	$f^2 = .66$
22	Relational routines	Youths' treatment satisfaction	$f^2 = .16$
12	Positive curative climate <sup>7</sup>	Less therapist iatrogenic effects	$d = .46$
26	Balanced support and control	Less externalizing behavioral problems	$V = .28$
33	Closed climate	Low neuroticism personality trait	$r = -.24$

<sup>1</sup> The study numbers correspond to the studies reported in Table 2.

2  $d$  = Cohens'  $d$ ,  $f^2$  = Cohen's  $f^2$ ,  $r$  = product-moment correlation,  $OR$  = Odd's Ratio,  $V$  = Cramer's  $V$ . Medium and high effect sizes marked in bold.

3 These variables indicate how adolescents react to social problem situations.

4 Youth Growth relates to learning perceptions, hope for the future and giving meaning to the stay in care (Van der Helm et al., 2013).

5 A positive atmosphere concerns how young people treat and trust each other, safety perceptions, feelings of having privacy, and a fresh environment (Van der Helm et al., 2013).

6 Living group climate consists of the subscales support, atmosphere, and repression (Eltink et al., 2015).

7 Curative climate is defined as an index to assess curative factors in group therapy and consists of items that measure cohesion, catharsis, and insight related to Yalom's therapeutic factors (Yalom, 1995).

Table 6

*Reported Social Climate Constructs and Associations with Negative Outcomes*

Study <sup>1</sup>	Social climate construct	Negative Outcome	Effect <sup>2</sup>
35	Repression <sup>3</sup>	Indirect aggression	$r = .38$
		Problems with accepting/giving help <sup>4</sup>	$r = .33$
		Problems with competition <sup>4</sup>	$r = .30$
		Experiencing disadvantage <sup>4</sup>	$r = .30$
		Problems with accepting authority <sup>4</sup>	$r = .28$
32		Youths' cognitive empathy	$r = -.28$
34	Closed climate	Youths' treatment motivation	$r = -.39$
33		Openness personality trait	$r = -.26$
6	Staff control	Externalizing behavior problems	$r = .54$
	Autonomy granting	Internalizing behavior problems	$r = .35$
	Warmth/staff support	Internalizing behavior problems	$r = .21$

<sup>1</sup> The study numbers correspond to the studies reported in Table 2.

<sup>2</sup>  $r$  = product-moment correlation. Medium and high effect sizes marked in bold.

<sup>3</sup> Repression assesses perceptions of staff control, fairness of regulations, and flexibility in the group (Van der Helm et al., 2013).

<sup>4</sup> These variables indicate how adolescents react to social problem situations. The variable social problem situations is an aggregated scale of the subscales disadvantage, competition, accepting authority, and accepting/giving help.



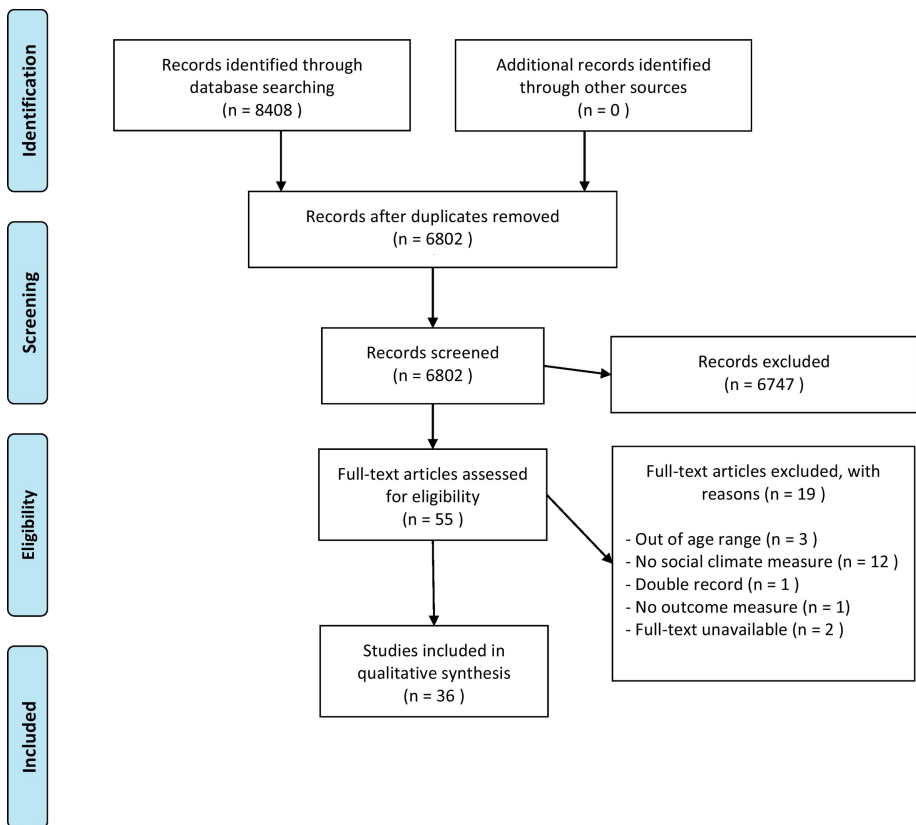


Figure 1