The Mediating Role of Social Climate in the Association of Youth and Residential Service Characteristics and Quality of Life

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Previous research has shown that social climate (SC) is important for the daily life of youths living in therapeutic residential youth care (TRC). However, little is known on how SC can promote a positive quality of life (QoL) for the heterogeneous TRC population. This study, therefore, investigates how TRC and youth characteristics are associated with SC and QoL. We employed a combination of person-centered and variable-centered approaches in a cross-sectional design using a sample of 400 Norwegian youths. We used previously established TRC and youth classes in a structural equation model, where these classes were regressed on latent SC and QoL. Both direct and indirect effects were analyzed. All youth classes were associated with SC and QoL, such that youth with family problems, incidental problems, and the migrant background class scored higher on SC and QoL compared to the severe problems class. In addition, SC mediated the association of the incidental problems and migrant background classes on QoL. TRC staff should acknowledge that a positive SC can strengthen the QoL of youths with severe problems. Future research should longitudinally investigate these associations to establish long-term effects on QoL during stay in TRC.

Public Policy Relevance Statement
Little is known about the association of social climate (SC) and quality of life (QoL) for the heterogeneous population of young people living in therapeutic residential youth care (TRC). The results of this study indicate that SC may increase the QoL for young persons who suffer from severe problems. It is thus important for policy makers to provide a safe, involved, and supportive SC and continuously monitor the living environment together with TRC youth and staff.

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The authors declare that they have no conflict of interest.
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E xperienced social climate (SC) may function as a mediating (or moderating) factor between outcomes of therapeutic residential youth care (TRC) and youth characteristics. The outcomes are assumed to be influenced by an interplay between SC and TRC and youth characteristics. In the present study, we examine an associative model, the multiphasic environmental assessment procedure (MEAP; Moos & Lemke, 1996), to clarify this interplay and relate these factors to a positive mental health outcome, namely, quality of life (QoL).

Norwegian TRC offers care and treatment to young persons (0–25 years old) who can no longer (temporarily) live at home or in a foster family. TRC
In most countries, including Norway, TRC is seen by policymakers as a “last resort” which preferably should be avoided as a treatment option (Knorth et al., 2008).

There was a decline of 21.5% in the number of youths admitted to TRC in Norway from 1,246 at the end of 2013 (Statistics Norway, 2014) to 978 at the end of 2019 (Statistics Norway, 2020). TRC is the treatment of choice if outpatient treatment and foster care placements have been unsuccessful (Backe-Hansen et al., 2011; Frensch & Cameron, 2002). As a result, many young persons in TRC have previously experienced placements and treatment that were unsuccessful, which can result in disappointment, distrust, and negative expectations among youths (Farmer et al., 2003; Harder et al., 2012; Lodewijks, 2007). Young people living in TRC often have also experienced a high rate of earlier adversities, including abuse and neglect (Euser et al., 2013; Greger et al., 2015), attachment problems (Farmer et al., 2003; Harder et al., 2012; Lodewijks, 2007). They regularly show substance use problems (Harder et al., 2017). Furthermore, they report low levels of QoL (Nelson et al., 2014). Both QoL and mental health problems are considered important treatment outcomes in TRC (Knorth, 2005).

Various meta-analyses indicate that youth in TRC show small-to-moderate effects in terms of improvement in emotional problems, decrease in externalizing behavior problems, and in recidivism of youths after residential care (e.g., De Swart et al., 2012; Grietens, 2002; Knorth et al., 2008; Scherrer, 1994). Furthermore, the longer the follow-up period, the less convincing TRC effects are (Frensch & Cameron, 2002; Harder & Knorth, 2015; Knekt et al., 2016; Scherrer, 1994). There is even evidence that nonresidential youth care is more effective in terms of mental health problems than residential youth care (Gutterswijk et al., 2020; Strijbosch et al., 2015), but quasi-experimental longitudinal research also contests this view (Leloux-Opmeer, 2018). Therefore, more research on how TRC can achieve positive outcomes is necessary. One of the factors that may set the prerequisites for achieving successful treatment outcomes is the living environment, hereafter denoted as SC (Andrews, 2011; Cantora et al., 2014; Lanciotto et al., 2016).

SC is considered to be a critical aspect for change or development of young people in TRC (e.g., Attar-Schwartz, 2017; Bastiaansen et al., 2012; Hair, 2005; Huefner & Ainsworth, 2021; Lanciotto et al., 2016; Leipoldt et al., 2019; Mathys, 2017; Mathys et al., 2013; Moore et al., 2018; Souverein et al., 2013; Van der Helm, 2011, 2019; Ward, 2004). It can be defined as the quality of the social and physical environment in terms of the provision of sufficient and necessary conditions for the physical and mental health, well-being, and personal growth of the residents, with respect for their human dignity and human rights as well as (if not restricted by judicial measures) their personal autonomy, aimed at participation in society (Stams & Van der Helm, 2017, p. 4).

SC has a clear relation with self-determination theory (Van der Helm et al., 2018), where relatedness, autonomy, and competence are necessary for motivation and personal growth of youths (Ryan & Deci, 2000). Furthermore, the MEAP framework (Moos, 2012; Moos & Lemke, 1996) suggests that experienced SC assumes a central role in the interplay of TRC and youth characteristics, and TRC outcomes (see Figure 1). Using this model may aid in investigating how TRC can facilitate “matching” the person with the environment (Andrews & Bonta, 2010; Leipoldt et al., 2019; Timko et al., 2000) by promoting a SC that is most beneficial for the positive outcome of QoL.

QoL concerns the perception of well-being in various life domains (e.g., physical, and emotional well-being, school, friends, and family; Ravens-Sieberer & Bullinger, 2000; Singstad et al., 2021). A high QoL is associated with lower societal costs (Wallander & Koot, 2016) and a useful universal indicator of success in programs advancing the well-being of young people through interventions, programs, or policies (Joze et al., 2017; Wallander & Koot, 2016). Although QoL is negatively related to psychopathology (e.g., Chen et al., 2006; Dey et al., 2012; Ravens-Sieberer et al., 2008), youth with mental health problems can experience a high QoL (Bastiaansen et al., 2005; Joze & Wallander, 2016). Therefore, investigating QoL in addition to mental health problems is meaningful to improve well-being of youth in TRC.

Despite the relevance of QoL in the context of TRC, there are limited studies investigating QoL in TRC. These studies show that youth in TRC typically report a lower QoL compared to youths in foster care (Dannijanović et al., 2012; Davidson-Arad, 2005) and the general population (Bronsard et al., 2013; Dannijanović et al., 2012; Greger et al., 2016; Joze & Sønnichsen Kayed, 2015). However, Carroll et al. (2014) show that this does not always apply; they explain this as the result of limited reference groups available to young persons living in TRC. Young persons might compare themselves to other young persons in TRC and, therefore, obtain a skewed perception of what is “normal.” Furthermore, Nelson et al. (2014) found that low QoL of youths in TRC was associated with psychotropic medication usage, a lower age, and being female. Previous research with youth in TRC, based on the same sample as in the present study, found that QoL was lower for TRC youths on all relevant aspects of QoL: Emotional and physical well-being, self-esteem, and friends compared to the general population (Joze & Sønnichsen Kayed, 2015). In addition, youth with a higher number of earlier experienced adversities and with the experience of maltreatment reported a lower QoL (Greger et al., 2016). Finally, Singstad et al. (2021) showed that youth QoL is positively associated with perceived social support from TRC staff.

Previous studies have used the MEAP, adapted to TRC, to investigate associations between determinants and outcomes of SC (Leipoldt et al., 2019, 2021; Timko et al., 2000). Leipoldt et al. (2021) used parts of the MEAP to investigate how TRC (Panel-I) and youth (Panel-II) characteristics interacted and predicted SC (Panel-III) as potential determinants of SC. They identified two TRC types (family-style TRC and larger TRC settings) and four youth profiles (severe problems, incidental problems, family problems, and a migrant background group) using latent class analysis (LCA). Youths with severe problems experienced SC most negatively. In addition, some differences in experienced SC between family-style and larger TRC settings could be identified. Furthermore, previous studies investigating SC and outcomes...
Panel-IV showed that a positively experienced SC is associated with more treatment motivation (Heynen et al., 2017; Van der Helm et al., 2014, 2018), less aggression (Ros et al., 2013; Van den Tillaart et al., 2018), less peer victimization (Pellerin et al., 2020; Pinchover & Attar-Schwartz, 2014; Sekol, 2016), less running away behavior (Attar-Schwartz, 2013), less usage of restraint and seclusion (Roy et al., 2020), and less internalizing problems (Lanctôt et al., 2016) and behavioral problems (Handwerk et al., 1998).

Although the above findings illustrate the importance of SC for TRC outcomes in terms of mental health, studies investigating the association between SC and QoL in TRC are lacking. A recent study based on the sample from the present study showed that more support persons available to the young persons were associated with a higher perception of QoL. It also revealed that support from TRC staff was almost as important as perceived social support by their mothers (Singstad et al., 2021). However, SC represents a broader array of TRC aspects than just the availability of support.

In general, it remains unclear how TRC achieves treatment goals, which is known as the “black box problem” (Evenboer et al., 2016; Harder & Knorth, 2015; Knorth, 2003; Knorth et al., 2014; Libby et al., 2005; Miller & Rowe, 2009; Palareti & Berti, 2009; Reime & Tysnes, 2021; Yohalem & Wilson-Ahlstrom, 2010). To gain more durable positive outcomes, we need to know more about how outcomes are achieved and with whom, in addition to just investigating the achieved outcomes (Harder & Knorth, 2015). Whom refers to youth characteristics, how is about TRC characteristics and the resulting SC, and the achieved relates to positive mental health aspects. Using the MEAP can provide insight into how organizational and youth factors are predictive of SC and TRC outcomes. This can help TRCs to align youth characteristics and environment strategies to each other and to use this knowledge to be more effective in promoting positive outcomes for different youth groups.

The Present Study

Given the importance of a positive SC for positive TRC outcomes, this study aims to investigate the role of SC associated with TRC and youth characteristics on one hand and QoL on the other hand. To the best of our knowledge, no studies have, directly or indirectly, assessed the relationship between experienced SC and QoL in TRC. Furthermore, studies on the interplay of TRC characteristics and youth characteristics in TRC are scarce (Leipoldt et al., 2021) and have not been conducted in connection to QoL. In the present study, we aim to fill this gap in the literature and address the following two research questions:

1. How are TRC and youth characteristics associated with SC and QoL?
2. How are TRC and youth characteristics on QoL mediated by experienced SC?

Regarding the first research question and based on previous results from the same sample (Leipoldt et al., 2021), we expect that (a) family-style TRC is associated with a higher level of QoL, compared to larger TRC settings. In addition, we expect that (b) youth with “severe problems” will experience a lower QoL compared to youth with “incidental problems,” “family problems,” and a “migrant background.” For the second research question, we expect that (c) youths’ experienced SC will partially mediate the associations of TRC and youth characteristic on QoL, such that the indirect effect of SC will strengthen the association between TRC and youth characteristics on QoL.
Method

Treatment Setting

TRC settings in Norway can be commercially, noncommercially, or publicly owned, organized as a group of several smaller units with, on average, three-to-five residents and staff presence ratios of 1:2 in an environment similar to a group home (Backe-Hansen et al., 2011; Jozefiak & Sønnichsen Kayed, 2015). Young people between the ages of 12 and 23 are placed according to the Child Welfare Act due to family or parental problems, or behavioral problems for which parents can no longer provide adequate care (Kayed et al., 2015). The primary goal is to provide care and parenting substitution to young people to catch up with typical adolescent development regarding education and social life, reducing social and psychological problems of the residents and improving their QoL, through relationships with staff members and the resident group. TRCs in Norway are not considered to be treatment facilities, so direct services (e.g., mental health treatments) are provided by other agencies (Singstad et al., 2021).

In our sample, placements for 76% of all cases were based on (solely) abuse or neglect for, and for the other cases (24%) on a variety of problems, that is, criminal behavior, substance use, or other social dysfunctional behavior usually in combination with parental dysfunction. More than two-thirds of staff working with young people within TRC settings (70.87%, \(SD = 22.47\)) has bachelor’s degree or other degrees relevant for social work. Staff members either work in 3 × 8 hr shifts or live with the young persons for several days followed by a period of off time—reflected in two classes of TRC characteristics—family style TRC and larger TRC units.

Participants

Youth in the present study participated in a large-scale Norwegian research project on mental health in adolescents living in TRCs (Jozefiak et al., 2016), including the majority of TRC settings for adolescents aged 12–23 years (see Figure 2).

Unaccompanied minors without asylum in Norway and adolescents living in emergency care units were excluded due to an expected high state of crisis (Jozefiak & Sønnichsen Kayed, 2015). Adolescents with insufficient proficiency in Norwegian language were excluded in addition to centers specialized in severe conduct problems (due to high research activity) (Andreasen, 2015). Of the 98 eligible centers and 601 eligible adolescents, 86 centers and 400 adolescents consented, resulting in a 67% response rate. For the 201 youths who refused to participate, an attrition analysis was performed based on 141 anonymous Child Behavior Checklist (CBCL) scores filled out by their main contact in TRC. There was no significant difference between the inclusion and exclusion groups (see Jozefiak et al., 2016, for more information).

More than half of the 400 participating adolescents in the present study (57.5%) was female. The average age was 16.7 years (\(SD = 1.37\)), ranging from 12 to 20 years old. The average number of previous placements was 3.34 (\(SD = 2.43\)), average first time in care from 12.5 years old (\(SD = 3.86\)), mostly voluntarily placed (56.4%). Most of them attend school (69.2%) or have jobs (11.3%). A majority (76%) met criteria for at least one psychiatric diagnosis.

For more details about the sample characteristics, see Jozefiak et al. (2016).

Materials

TRC Program Characteristics. TRC program characteristics were measured with a questionnaire for TRC leaders that have been specifically designed for the research project, including information on TRC leaders, staff members, staff routines, leisure time routines for adolescents, school organization, and routines for daily activities using open-ended, yes/no, or Likert-scale items. An example item from the routines for daily activities is: “Does this institution have routines in place to deal with drug problems?”

Using LCA, in a previous study, we identified two TRC types which are used in the present study: Family-style (54%) and larger group-style (46%) TRC settings (Leipoldt et al., 2021). The two TRC types mainly differ in size and staff work routines, where larger TRC settings organize staff in three shifts per 24 hr, whereas family-style TRC is characterized by staff cohabitation and more participation in unorganized activities outside TRC. The two types are not statistically different on other characteristics (see also Leipoldt et al., 2021).

Youth Characteristics. Youth characteristics were measured with various (standardized) instruments, which were subsequently entered into an LCA to obtain youth characteristics profiles (Leipoldt et al., 2021). We used the following concepts (based on standardized instruments) to obtain a latent classification into groups: Emotion Regulation, measured with the Difficulties in Emotion Regulation Scale (Grazt & Roemer, 2004), and Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) Diagnosis, measured with the Child and Adolescent Psychiatric Assessment (CAPA; Angold & Costello, 2000). Furthermore, information about youth background characteristics based on a semistructured interview designed for the study. Furthermore, care history, family, own and parental substance use problems, and school history were included. Response formats were open-ended formats (later classified), and others used yes/no or Likert-scale response alternatives. An example item from the care history theme is: “How old were you at your first placement?”

Using LCA, the previous study (Leipoldt et al., 2021) obtained four youth profiles, which are reused in the present study. These profiles are: (a) severe problems (38%), (b) incidental problems (36%), (c) family problems (13%), and (d) a migrant background class (13%). The “severe problems” profile is mainly characterized by nonvoluntarily placed females, with a high prevalence in all major categories of psychiatric disorders, high emotion dysregulation, and low school attendance. The “incidental problems” profile is characterized by voluntarily placed males with low rates in all major categories of psychiatric disorders. Most youth are enrolled in school with average school problems. Their placement reason is mainly due to mental health problems or drug problems. The “family problems” profile is characterized by youths that were first placed at a younger age, with the highest number of previous placements, and showing a high rate of parental problems and present (and previous) psychiatric disorders. Finally, the “migrant background” profile includes voluntarily placed youth males with a non-Norwegian origin or native language. They have experienced family violence or other parental problems (e.g., parental illness), and have
somewhat less family visits during placement. For more detailed, information see Leipoldt et al. (2021).

**SC.** We measured SC with a short, refined version (Leipoldt et al., 2018) of the Community Oriented Programs Environment Scale (CPES; Moos, 2009). The scale consists of 40 true/false statements which are divided over ten subscales (four items per scale) and three second-order dimensions (see Table 1). Higher scale scores indicate a higher endorsement of a particular SC aspect, ranging between 0 (low endorsement) and 4 (high endorsement) for all subscales. An example item of the autonomy scale is: “Members have a say in making rules.” The reliability and construct validity of the original CPES have been well-documented (Moos, 2009). In the present study, the refined version shows good internal consistency values for the total score ($\alpha = .81$) and for the subscales between $\alpha = .50$ and $\alpha = .66$, which is acceptable for group comparisons using such short scales (Schmitt, 1996). In addition, composite reliability (Raykov, 1997) scores indicated acceptable to good reliability for the short version of the CPES (Leipoldt et al., 2018).

**QoL.** We measured youth QoL with the Norwegian translation of the Kinder Lebensqualität Fragebogen revised self-report version (KINDL-R; Ravens-Sieberer & Bullinger, 2000). The KINDL-R consists of 24 five-point Likert-scale items divided over six subscales: Physical well-being, emotional well-being, self-esteem, family, friends, and school, and a total score, transformed into a 0–100 scale, whereby

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**Figure 2**

_inclusion Flowchart of Participants (Jozeffak et al., 2016)_

- All young people aged 12-23 years, living in Norwegian RYC institutions.
- Official number of approved beds in RYC from 2010: 163 institutions (N = 1600)
- Eligible institutions: 58 RYC institutions (N = 731)
- Included in the study: 86 RYC institutions with eligible youths (N = 601)
- Number of youths participating in the study: N = 400 (Response rate 67%)
- Adolescent CAPA interviews available for N = 335 (84%)
- Diagnostic interview by primary contact available for N = 382 (96%)
- Complete information for any diagnosis available for N = 323 (80%)

_Exclusion criteria: Unaccompanied minors without asylum in Norway, acute crisis placements and insufficient proficiency in Norwegian._

- Excluded at institutional level: Other target groups 10, Empty/shut down 24, Acute placements 21, Unaccompanied minors 3, Participated in pilot 2, Not able to contact* 5, Total 65 (N = 869, approved beds)

_Exclusion at individual level: Unaccompanied minors without asylum in Norway, acute crisis placements and insufficient proficiency in Norwegian. (N = 70)_

- 12 institutions** did not want to participate (N = 60)
- 201 youths did not want to participate
- 65 youths did not complete the CAPA

_Additionally, anonymous information about non-participants on the CBCL available for N = 141 (54%)

*Note.* See the online article for the color version of this figure.
higher scores indicate a higher level of perceived QoL. An example item of the emotional well-being scale is: “During the past week I felt scared or unsure of myself.” The family subscale was excluded in the present study as not relevant. The school subscale was only included for youths attending school. Internal consistency (Bullinger et al., 2008), convergent validity, and discriminant validity (Ravens-Sieberer & Bullinger, 2000) have been reported. In the present sample, internal consistency ranged from $\alpha = .50$ to $\alpha = .89$ for the subscales, and $\alpha = .89$ for the total QoL scale without the family subscale.

### Procedure

All eligible Norwegian TRC centers listed in the 2010 national database of the Directorate for Child and Family Affairs were contacted in random order, providing information about the research project and its goals. Data collection was from July 2011 and July 2014 by four research assistants, all of whom were holding master’s degrees in psychology or social work and extensive experience, administering multiple questionnaires and interviews to youths, teachers, primary contacts, and TRC leaders.

The CPES was administered as the second instrument in the data-collection process, immediately after the CAPA interview, given its importance to the main study, followed by several questionnaires, totaling on average 3 hr of participation. During the data-collection period, a team of child and adolescent psychiatrists and psychologists was available in case of emergencies. Each participant received a gift certificate of 500 NOK (approximately USD 90) for participation and four random chosen adolescents won an iPhone.

### Ethics

The recruitment and data collection procedures were approved by the Norwegian Regional Committee for Medical and Health Research Ethics (reference number 2016/1169/REC Central). Consent was given by the young person, and for those younger than 16 years of age, informed consent was also obtained from the legal caregiver. Informed consent was confirmed once more when data collection was initiated.

### Statistical Analyses

This study used a cross-sectional design. First, we calculated descriptive statistics for the variables TRC and youth characteristics on SC, QoL, and checked for outliers. Second, we checked the assumptions of variable and residual normality of the outcome variables, linearity, and multicollinearity. Third, associations between youth characteristics and TRC on SC and QoL were analyzed with structural equation modeling (SEM).

We first established a measurement model by regressing the SC subscales on the single latent variable SC and the five subscales of QoL on a single latent variable total QoL. We used the first item of each factor as a marker variable to identify the model. TRC and youth characteristics are defined as dummy variables in the model with the severe problems class for youth characteristics and the larger group-style TRC for TRC characteristics as reference classes. Thereafter, we established a structural model by regressing TRC and youth characteristics on SC and QoL and regressing SC on QoL. Finally, we added the indirect effects of SC to the model and analyzed the effects with bias-corrected bootstrapped standard errors (MacKinnon et al., 2004) based on 2000 samples.

To assess model-fit, we used the Chi-square test and Chi-square/degrees of freedom ($\chi^2/df$) index, root mean square error of approximation (RMSEA) with its 90% confidence interval, comparative fit index (CFI), Tucker–Lewis index (TLI), standardized root mean square residual (SRMR), and the sample-size adjusted Bayesian information criteria (SBIC). We considered an $\chi^2/df$ index $< 2$, RMSEA $< .06$, CFI and TLI $> .95$, SRMR $< .08$, and a low SBIC as indicators of good model fit (Hu & Bentler, 1999; Schreiber et al., 2006; Yu, 2002). In addition, we checked if modification indices $> 10$ were present to investigate potential correlated error terms. Finally, we used Raykov’s reliability coefficient (RRC; Raykov, 1997) to assess factor reliability with values of $>.70$ indicating good reliability (Bagozzi & Yi, 1988).

For all analyses, two-sided $p$ values of $<.05$ were considered statistically significant. We used Stata SE, Version 16 to calculate descriptive statistics and within Stata used the program RELICOEF (Mehmetoglu, 2015) to obtain RRC values for factor reliability. Mplus version 8.3 (Muthén & Muthén, 1998–2017) with maximum
Results

Descriptive Statistics of SC and QoL

Preliminary analyses showed no noteworthy outliers in the data, and all continuous variables follow an approximate normal distribution. Furthermore, the assumptions of linearity and collinearity are met. Descriptive statistics and correlations for the SC and QoL subscales are presented in Table 2. Most correlations are significant, and in the expected direction, for the SC aspects “staff control” and “personal problem orientation,” few correlations are significant. Means and standard deviations for TRC and youth characteristics on SC and QoL are presented in Table 3.

Measurement Models of SC and QoL

Interactions between TRC and youth characteristics on SC and QoL were examined, but none of them reached significance and they were excluded from the model. Based on modification indices with values > 10 and content similarity, we correlated the error term between the SC subscales “spontaneity” and “personal problem orientation” (b = 0.32, SE = 0.07, β = 0.29, p < .001). Thereafter, model-fit indices indicated, except for the Chi-square test (which is sensitive to sample size, see Hu & Bentler, 1999), that the model fitted the data well, χ²(140) = 199.25, p < .001, χ²/df = 1.42, RMSEA = .034, 90% CI [.023, .044], CFI = .960, TLI = .953, SRMR = .044, SBIC = 22549.27. The results of the measurement models, including factor reliability, unstandardized, and standardized factor loadings, are presented in Table 4. All factor loadings were significant, and the factor reliability was high for SC and QoL. For personal problem orientation and staff control, the standardized loadings were low.

Associations of TRC and Youth Characteristics on SC and QoL

Table 5 presents the results of the structural model with the direct, indirect, and total effects for TRC and youth characteristics on SC and QoL. The final full standardized solution is graphically presented in Figure 3. The TRC classes and the family problems class (compared to the severe problems class) were not significantly associated with latent SC. However, the incidental and migrant background classes were significant and positively associated with latent SC, indicating that these classes score higher on SC than the severe problems class.

There were no significant associations between the TRC classes and latent QoL. However, there was a significant direct positive relationship between family, incidental, and migrant classes on QoL, indicating that these classes scored higher on QoL than the severe problems class. Finally, there was a significant direct positive association between latent SC and latent QoL, indicating that a positive SC was associated with a higher QoL.

SC partially mediates the relationship between the incidental and migrant background classes (compared to the severe problems class) on QoL, whereas the direct effects remained statistically significant (see Table 5). The small mediating effect via SC strengthens the relationship by b = 4.01, SE = 1.11, 95% CI [2.04, 6.49], β = 0.11 for the incidental class and by b = 4.57, SE = 1.53, 95% CI [2.00, 8.05], β = 0.09 for the migrant background class on QoL, compared to the severe problems class. There was no significant indirect effect for TRC classes and the family problems class. Finally, TRC and youth characteristics and latent SC explain 34.7% of the variance in latent QoL, which is considered a large effect (F² = .53; Cohen, 1992).

Discussion

The aim of this study was to investigate how TRC and youth characteristics are associated with QoL of young residents. Furthermore, this study examined whether experienced SC is a mediator in the association between TRC and youth characteristics on one hand and QoL on the other hand. Results from the SEM show that SC
partially mediated the association of youth characteristics and QoL, but this was not found for TRC characteristics. Experienced SC is positively associated with QoL differently for groups based on youth characteristics.

In contrast to our expectation that family-style TRC, compared to larger TRC settings, was associated with a higher QoL, we did not find any differences between the two types of TRC settings regarding latent SC and QoL. This is not in line with previous literature on experienced SC (Attar-Schwartz, 2017; Leipoldt et al., 2019, 2021) and QoL (Damnjanović et al., 2012). An explanation for this finding is that the differences between the two groups of TRC characteristics are small, indicating that Norwegian TRC settings are more homogeneous in their organization and provided services, possibly due to state standards for TRC approvals and that a few specialized institutions were excluded from the study. This is also illustrated by the fact that the prevalence of psychiatric problems did not differ significantly between different types of TRC ownerships (Kayed et al., 2015). Second, investigating a latent SC structure with a single indicator rather than subscales may have masked-specific aspects of SC effects for the TRC groups on QoL (McNeish & Wolf, 2020). A third explanation is that we did not include length of stay in this study; however, 90% of youths in our sample have been in TRC for 3 months (Kayed et al., 2015). This may mask the potential impact on QoL during treatment (Davidson-Aral, 2005). Previous research has shown that length of stay is positively associated with SC (Van der Helm et al., 2014). Furthermore, a recent study showed that length of stay had a moderating effect in the association of staff support and youths’ adjustment problems, such that more staff support is negatively associated with adjustment problems for above average stays compared to below average stays (Hoffnung Assouline & Attar-Schwartz, 2020). This in turn may impact a young person’s QoL (Lukšik & Hargašová, 2018). More research is, therefore, necessary to clarify the associations between contextual or setting characteristics, experienced SC and QoL by investigating these associations on a more detailed level.

In correspondence with our expectation, only youths presenting severe problems experienced a lower QoL and SC compared to youths with incidental problems, family problems, or youths with a migrant background. This is consistent with findings that having more mental health problems is associated with a lower QoL (Chen et al., 2006; Dey et al., 2012; Ravens-Sieberer et al., 2008) and a negative experience of SC (Eltink et al., 2021; Handwerk et al., 1998; Jordan et al., 2009; Lantctôt et al., 2016; Leipoldt et al., 2019; Pinchover & Attar-Schwartz, 2014; Robinson et al., 2018; Van den Tillaart et al., 2018). Although youths with family and incidental problems do experience a positive QoL, they also present mental health problems, however, less severe. This means that the results also support the literature that despite mental health problems, youths can still experience a positive QoL (Bastiaansen et al.,

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### Means and Standard Deviations for TRC and Youth Characteristics on Social Climate and Quality of Life

<table>
<thead>
<tr>
<th>Variable</th>
<th>Family-style TRC</th>
<th>Larger group-style TRC</th>
<th>Severe problems</th>
<th>Incidental problems</th>
<th>Family problems</th>
<th>Migrant background</th>
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<tbody>
<tr>
<td>M (SD)</td>
<td>M (SD)</td>
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<tr>
<td>Involvement</td>
<td>2.23 (1.25)</td>
<td>2.33 (1.39)</td>
<td>1.97 (1.31)</td>
<td>2.49 (1.23)</td>
<td>1.96 (1.43)</td>
<td>2.89 (1.11)</td>
</tr>
<tr>
<td>Support</td>
<td>2.70 (1.29)</td>
<td>2.70 (1.34)</td>
<td>2.46 (1.37)</td>
<td>2.99 (1.19)</td>
<td>2.55 (1.42)</td>
<td>3.00 (1.08)</td>
</tr>
<tr>
<td>Spontaneity</td>
<td>2.46 (1.10)</td>
<td>2.50 (1.25)</td>
<td>2.30 (1.23)</td>
<td>2.66 (1.03)</td>
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<td>Autonomy</td>
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<td>1.84 (1.39)</td>
<td>2.37 (1.21)</td>
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<td>2.24 (1.35)</td>
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<td>1.96 (1.41)</td>
<td>2.25 (1.41)</td>
</tr>
<tr>
<td>Personal problem orientation</td>
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<td>1.56 (1.15)</td>
<td>1.61 (1.21)</td>
<td>1.60 (1.18)</td>
<td>1.55 (1.14)</td>
<td>1.56 (1.18)</td>
</tr>
<tr>
<td>Anger and aggression</td>
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<td>2.04 (1.40)</td>
<td>2.67 (1.19)</td>
<td>1.98 (1.37)</td>
<td>2.45 (1.45)</td>
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<td>Order and organization</td>
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<td>2.60 (1.19)</td>
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<td>2.79 (1.11)</td>
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<td>2.67 (1.28)</td>
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<tr>
<td>Program clarity</td>
<td>2.35 (1.25)</td>
<td>2.52 (1.22)</td>
<td>2.10 (1.22)</td>
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<td>2.37 (1.36)</td>
<td>2.77 (1.20)</td>
</tr>
<tr>
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<td>2.79 (1.21)</td>
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<td>2.73 (1.22)</td>
<td>3.12 (0.88)</td>
</tr>
<tr>
<td>Physical well-being</td>
<td>57.06 (25.27)</td>
<td>58.69 (25.67)</td>
<td>47.63 (22.10)</td>
<td>67.02 (21.47)</td>
<td>54.83 (29.71)</td>
<td>62.84 (25.77)</td>
</tr>
<tr>
<td>Emotional well-being</td>
<td>62.55 (23.94)</td>
<td>66.25 (24.62)</td>
<td>51.81 (23.47)</td>
<td>73.72 (18.84)</td>
<td>64.73 (24.25)</td>
<td>68.75 (25.38)</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>46.59 (26.56)</td>
<td>47.51 (27.75)</td>
<td>34.23 (23.24)</td>
<td>55.81 (25.12)</td>
<td>50.29 (26.34)</td>
<td>58.33 (32.01)</td>
</tr>
<tr>
<td>Emotional well-being</td>
<td>62.55 (23.94)</td>
<td>66.25 (24.62)</td>
<td>51.81 (23.47)</td>
<td>73.72 (18.84)</td>
<td>64.73 (24.25)</td>
<td>68.75 (25.38)</td>
</tr>
<tr>
<td>Involvement</td>
<td>53.40 (21.34)</td>
<td>54.81 (22.39)</td>
<td>44.59 (19.55)</td>
<td>60.58 (21.61)</td>
<td>58.33 (19.42)</td>
<td>57.35 (21.40)</td>
</tr>
<tr>
<td>Total QoL*</td>
<td>57.23 (18.92)</td>
<td>59.54 (18.64)</td>
<td>48.06 (15.88)</td>
<td>66.60 (15.67)</td>
<td>58.72 (18.71)</td>
<td>63.08 (20.12)</td>
</tr>
</tbody>
</table>

**Note.** TRC = therapeutic residential youth care; QoL = quality of life. *Total QoL calculated without the family subscale.

<table>
<thead>
<tr>
<th>Table 4</th>
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### Measurement Model for Social Climate and QoL: Factor Reliability, Unstandardized and Standardized Factor Loadings

<table>
<thead>
<tr>
<th>Variables</th>
<th>B (SE)</th>
<th>β (SE)</th>
<th>RRC</th>
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</thead>
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<tr>
<td>Social climate</td>
<td>.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>1.00 (0.00)</td>
<td>.68 (0.03)</td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td>1.05 (0.08)</td>
<td>.71 (0.03)</td>
<td></td>
</tr>
<tr>
<td>Spontaneity</td>
<td>0.73 (0.08)</td>
<td>.56 (.05)</td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td>0.99 (0.08)</td>
<td>.71 (0.03)</td>
<td></td>
</tr>
<tr>
<td>Practical orientation</td>
<td>0.89 (0.09)</td>
<td>.59 (.04)</td>
<td></td>
</tr>
<tr>
<td>Personal problem orientation</td>
<td>0.30 (0.08)</td>
<td>.22 (.06)</td>
<td></td>
</tr>
<tr>
<td>Anger and aggression</td>
<td>−0.72 (0.09)</td>
<td>−.46 (.05)</td>
<td></td>
</tr>
<tr>
<td>Order and organization</td>
<td>0.76 (0.06)</td>
<td>.56 (.04)</td>
<td></td>
</tr>
<tr>
<td>Program clarity</td>
<td>0.99 (0.08)</td>
<td>.71 (.03)</td>
<td></td>
</tr>
<tr>
<td>Staff control</td>
<td>0.28 (0.07)</td>
<td>.22 (.06)</td>
<td></td>
</tr>
<tr>
<td>Quality of life</td>
<td>.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical well-being</td>
<td>1.00 (0.00)</td>
<td>.70 (.04)</td>
<td></td>
</tr>
<tr>
<td>Emotional well-being</td>
<td>1.41 (0.10)</td>
<td>.83 (.03)</td>
<td></td>
</tr>
<tr>
<td>Self-esteem</td>
<td>1.21 (0.10)</td>
<td>.79 (.03)</td>
<td></td>
</tr>
<tr>
<td>Friends</td>
<td>0.70 (0.09)</td>
<td>.54 (.05)</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>0.71 (0.09)</td>
<td>.58 (.06)</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** QoL = quality of life; RRC = Raykov’s reliability coefficient. All factor loadings are significant (p < .001).
2005; Jozeﬁk & Wallander, 2016) and report a positive experience of TRC SC. These findings illustrate that only focusing on symptom reduction in TRC’s treatment plans is a too limited approach and does not contribute to opening the “black-box” (Knorth et al., 2008). Inclusion of QoL in treatment outcomes does more right to all the facets involving a young person’s life and should be studied in more detail to better understand the impact of TRC treatment (Bastiaansen et al., 2005; Knorth, 2005).

The final hypothesis was that SC would partially mediate the associations of TRC and youth characteristics on QoL. First, our results indicate that a positive SC is associated with a higher QoL. This is consistent with previous literature on the positive association

### Table 5

<table>
<thead>
<tr>
<th>Variables</th>
<th>Direct effect $B$ (SE)</th>
<th>Indirect effect $B$ (SE)</th>
<th>Total effect $B$ (SE)</th>
<th>Direct effect $\beta$ (SE)</th>
<th>Indirect effect $\beta$ (SE)</th>
<th>Total effect $\beta$ (SE)</th>
<th>$R^2$</th>
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</thead>
<tbody>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.10*</td>
</tr>
<tr>
<td>TRC</td>
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<td></td>
<td></td>
<td>–0.04 (.06)</td>
<td>–0.04 (.06)</td>
<td>–0.04 (.06)</td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td>0.05 (0.18)</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Incidental</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Migrant</td>
<td>0.63 (0.17)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.35**</td>
</tr>
<tr>
<td>TRC</td>
<td>–1.62 (2.02)</td>
<td>–0.56 (0.74)</td>
<td>–2.17 (2.06)</td>
<td>–0.05 (.06)</td>
<td>–0.02 (.02)</td>
<td>–0.07 (.07)</td>
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</tr>
<tr>
<td>Family</td>
<td>10.76 (3.52)*</td>
<td>0.38 (1.29)</td>
<td>11.14 (3.60)**</td>
<td>0.21 (.07)*</td>
<td>0.01 (.02)</td>
<td>0.22 (.07)*</td>
<td></td>
</tr>
<tr>
<td>Incidental</td>
<td>15.12 (2.44)**</td>
<td>4.01 (1.11)**</td>
<td>19.13 (2.44)**</td>
<td>0.42 (.06)**</td>
<td>0.11 (.03)**</td>
<td>0.53 (.05)**</td>
<td></td>
</tr>
<tr>
<td>Migrant</td>
<td>9.15 (4.08)*</td>
<td>4.57 (1.53)**</td>
<td>13.73 (4.02)**</td>
<td>0.17 (.08)*</td>
<td>0.09 (.03)*</td>
<td>0.26 (.07)**</td>
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</tr>
<tr>
<td>Social climate</td>
<td>7.27 (1.47)**</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note. TRC = therapeutic residential youth care; QoL = quality of life. Youth characteristics entered as dummy variables and contrasted with the severe problems group. The standard errors are based on bias-corrected bootstrapped analysis. * $p < .05$. ** $p < .001$.

2005; Jozeﬁk & Wallander, 2016) and report a positive experience of TRC SC. These findings illustrate that only focusing on symptom reduction in TRC’s treatment plans is a too limited approach and does not contribute to opening the “black-box” (Knorth et al., 2008). Inclusion of QoL in treatment outcomes does more right to all the facets involving a young person’s life and should be studied in more detail to better understand the impact of TRC treatment (Bastiaansen et al., 2005; Knorth, 2005).

The final hypothesis was that SC would partially mediate the associations of TRC and youth characteristics on QoL. First, our results indicate that a positive SC is associated with a higher QoL. This is consistent with previous literature on the positive association

### Figure 3

Standardized Solution of the Final Structural Model for Therapeutic Residential Youth Care (TRC) and Youth Characteristics on Social Climate and Quality of Life
between social support and the QoL domains of emotional well-being and self-esteem (Singstad et al., 2021). For youth characteristics, SC did partially mediate the association to QoL for the incidental group and the migrant background group (but not for the family problems group), as compared to the severe problems group, on QoL. The implication is that QoL increases with a positive SC for these two groups. Contrary to this, however, a more negative SC lowered the QoL for the contrasted severe problems group. This finding demonstrates the significance of a positive SC in TRC as discussed in recent studies (e.g., Huefner & Ainsworth, 2021; Leipoldt et al., 2021; Levrouw et al., 2020; Pellerin et al., 2020; Strijbosch et al., 2019; Van der Helm et al., 2018) and is further illustrated by TRC and youth characteristics and SC showing a large effect on QoL. More specifically, the lower experienced physical well-being of TRC youth compared to outpatient youth and the general population (Jozefiak & Sønnichsen Kayed, 2015) could be explained by more experiences of childhood abuse and adversities (Greger et al., 2015, 2016). This in turn may, in the long run, lead to increased risk for type-II diabetes (Rich-Edwards et al., 2010) and cardiovascular disease (Springer et al., 2007). Therefore, the poorer QoL of youths in TRC related to physical well-being is of major concern (Jozefiak & Sønnichsen Kayed, 2015). As SC is also perceived more negatively by abused TRC youth (Lancôt et al., 2016), it is important to investigate how a more positive experienced living environment can improve specific QoL-domains. Furthermore, there were no indirect associations of TRC classes via SC to QoL. Future longitudinal studies are, therefore, needed to examine in more detail which aspects of SC impacts which QoL aspects to optimize treatment during placement in TRC.

**Strengths and Limitations**

A first strength of this study is the combination of using a person-centered approach and a variable-centered approach (Meessen et al., 2018; Von Eye & Bergman, 2003). This enabled us to identify how SC and QoL are affected for different groups of youths, based on natural clusters rather than predefined grouping. The indirect effect of SC also allowed us to generate practical implications for how QoL can be improved by optimizing the environment for various heterogeneous groups of youths presenting different problems. In addition, this study used a large unique nation-wide sample of youths living in Norwegian TRC. This strengthens the external validity of our findings, as it is an excellent representation of the population.

This study also has some limitations that researchers and practitioners should consider. The most important limitation is the correlational design of the study, which prohibits causal interpretations and generalization of SC and QoL effects during stay. Therefore, the differences in QoL and the indirect effects of SC for the included youth groups are mere associations that point towards possible causal mechanisms. Second, this study used single latent variables for SC and QoL rather than specifying their aspects. This limits our understanding of how specific aspects of SC and domains of QoL are affected for the diverse population of youths in TRC. Third, most data came from youth self-report measures. Although especially appropriate for QoL (because of the subjective and multidimensional aspect of the construct), this is more problematic for information regarding parental psychopathology used to establish youth classes. In addition, a large proportion of the present sample does not attend school, which may have affected the validity of the measurement of the school domain in QoL. Results regarding school functioning and perceptions of school should, therefore, be interpreted with caution. Finally, the characteristics of the TRCs appear to be rather homogeneous, limiting the possibility for studying the impact of TRC characteristics.

**Clinical Implications and Future Research**

Despite our limitations, the findings from this study offer some recommendations for clinical practice and future studies. In general, TRC staff should be aware of the impact that SC has for a better QoL. This is especially relevant for youths with severe problems, as a negative perception of SC may further decrease their QoL. Therefore, a continuous dialogue on the SC and how daily life and activities are organized starting already at intake (Knorth, 1987; Levrouw et al., 2018, 2020) can promote a positive daily interaction between youth and staff, and may result in an improved QoL (Polsky, 1977). During treatment, these conversations can focus on daily atmosphere and shared decision-making to increase autonomy (Ten Brummelaar et al., 2018). Organized activities can include, for example, organization of a friends’ afternoon, celebration of birthdays, and inviting parents to cook and share meals with the group (Levrouw et al., 2018). This in turn may increase youths’ QoL aspects of friends and emotional well-being. Furthermore, TRC organizations can conduct routine SC assessments. The results can be presented in an app to provide input for a dialogue among youth and staff members to discuss where improvement or adjustment is necessary (Knorth et al., 2004; Leipoldt & Strijbosch, 2020). Such practical tools can be used to facilitate this conversation and increase the strengths and creativity of youths to stimulate positive interactions (Haigh, 2017).

This study also provides clear recommendations for future studies. First, research should focus on longitudinal associations to determine how the perception of SC changes over time and how the interplay with youth development affects QoL during treatment. Longitudinal studies monitoring SC change over time are scarce but underway (Strijbosch et al., 2019). Second, a more detailed examination of QoL and SC is necessary to establish which specific aspects are affected and can be improved. For example, externalizing problems are associated with more peer problems compared to externalizing problems (Ranøyen et al., 2019) and internalizing problems are associated with a lower QoL compared to externalizing problems (Lack et al., 2009). Therefore, QoL measurements should be complemented with a parallel measurement of mental health symptoms to investigate how improvements of mental health are associated with improvements in QoL. Finally, future studies should investigate how specific aspects of SC, for example, on a dimensional level (Moos, 2009), can promote a positive QoL and reduction in mental health problems for the heterogeneous youth population. In sum, this may provide a more thorough understanding of what works for whom in TRC (Harder & Knorth, 2015).

**Conclusion**

Youths in TRC have often experienced a long treatment history with a high prevalence of adversities, which has negatively affected their QoL. Therefore, it is important for TRC to facilitate a positive living environment to reduce previous negative experiences and
improve their QoL. This was the first study that investigated associations between SC and QoL and how youth and organizational characteristics are associated with QoL. This study indicated that the small differences in Norwegian TRC organizations are neither directly associated with youths’ SC and QoL-perception nor indirectly associated with QoL through SC. This means that policy adjustments that improve TRC organizations can be used widely. Furthermore, this study showed that a positive SC may provide an additional increase in QoL for the heterogeneous groups of youth. This clearly requires daily attention to SC within TRC to ensure positive treatment outcomes. Future studies should investigate how SC and QoL are affected over time during treatment to achieve more durable treatment results.

**Keywords:** therapeutic residential youth care, youth characteristics, service characteristics, social climate, quality of life

**References**


Kayed, N. S., Joze, K., Rimehaug, T., Tjelfaat, T., Brubakk, A. M., & Wichstrom, L. (2015). Resultater fra forskningsprosjektet psykisk helse hos barn og unge i barneverninstisjoner [Results from the research project mental health in adolescents living in child welfare institutions]. https://bufdir.no/Bibliotek/Dokumentside/?docid=BUCF0002834


