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Residential Youth Care Combined with Systemic Interventions: Exploring Relationships between Family-Centered Care and Outcomes

A. M. M. M. Blankestein [a,b], R. E. A. Van der Rijken [b,c], J. L. Broekhoven [d,e], A. M. C. Lange [b], I. Simons [f], L. Van Domburgh [d,e], F. Van Santvoort [e], and R. H. J. Scholte [a,b,c,g]

[a] Behavioural Science Institute, Radboud University, Nijmegen, The Netherlands [b] Research, Development & Education, Viersprong Netherlands Institute for Personality Disorders, Halsteren, The Netherlands [c] Praktikon, Nijmegen, The Netherlands [d] Department of Child and Adolescent Psychiatry, AmsterdamUMC, Duivendrecht, The Netherlands [e] Research & Development Department, Pluryn, Nijmegen, The Netherlands [f] Youz (Parnassia Group Psychiatric Institute), Zoetermeer, The Netherlands [g] Tranzo, Tilburg University, Tilburg, The Netherlands

ABSTRACT

Family-centered care, in terms of parental involvement and family-centered staff attitude and behavior during placement in secure residential youth care, is increasingly being combined with systemic interventions. Little is known, however, about this combination of family-centered residential care and systemic interventions. This study assessed whether levels of parental involvement or family-centered staff attitude and behavior during placement predicted outcomes of systemic interventions. We first assessed the outcomes in the full sample of families receiving systemic interventions and thereafter in families receiving systemic interventions with a strong evidence base (Multidimensional Family Therapy, Multisystemic Therapy [specializing in treatment of individuals with an intellectual disability/with problem sexual behavior], Relational Family Therapy [MDFT, MST(-ID/-PSB), RGT]) and systemic interventions with a less strong evidence base (Attachment Based Family Therapy, Flexible Assertive Community Treatment [FACT], FamilyFACT, Forensic Ambulant Systemic Therapy, Systemic Therapy [ABFT, (Family)FACT, FAST, ST]). Results revealed that higher levels of parental involvement predicted less family empowerment and a longer duration of the systemic intervention. Higher levels of family-centered staff attitude and behavior predicted more parental distress, a shorter duration of the residential placement and a shorter duration of the systemic intervention. Combinations of secure residential youth care with different systemic interventions of different evidence bases resulted in different outcomes. Future research is needed to establish which components of family-centered care or systemic interventions contribute to adolescent outcomes.

KEYWORDS

Residential youth care, parental involvement, family-centered care, systemic interventions, family functioning

CONTACT A. M. M. M. Blankestein Annemarieke.Blankestein@deviersprong.nl Viersprong Netherlands Institute for Personality Disorders, The Netherlands.

Practice Implications

- Improving aspects of family-centered care when combined with systemic interventions could help improve adolescent outcomes in secure residential youth care.
- When a shorter duration of residential placement is desirable, implementing family-centered care or systemic interventions could be beneficial.
- Institutions should consider implementing systemic treatments with a strong evidence base to improve adolescent outcomes.
- In designing studies on family-centered care, parental and adolescent perspectives need to be represented more often.

Introduction

In recent years, residential treatment is increasingly being combined with systemic interventions to enhance outcomes of adolescents and their families (Hoogeveen et al., 2017; Rovers et al., 2019; Trupin et al., 2011). Historically, residential treatment has been largely child-centered (Knorth et al., 2008; Sunseri, 2020). Today, an increased focus on family functioning in secure residential youth care is necessitated by the knowledge that family functioning affects adolescent problem behavior (Carr, 2019). It is hypothesized that combinations of residential care and systemic interventions ensure that behavioral improvements achieved during placement are maintained after departure (Knorth et al., 2008), with families showing improved family functioning (e.g., less parental distress, improved family empowerment, and caregiver–child relationships after treatment; Preyde et al., 2011; Smulders et al., 2018). In addition, these combinations may reduce the duration of placement, as these interventions aim for adolescents to return home as soon as possible or to live independently after placement (Rovers et al., 2019; Trupin et al., 2011).

Placement in secure residential youth care is warranted if and when adolescents show multiple problems which either affect society, such as aggression or delinquency, or their personal safety, such as self-harming behavior or sexual exploitation (Vermaes et al., 2014). In the Netherlands, where the present study was conducted, most of the adolescents in secure residential youth care (85%–99%) have severe externalizing behavior problems (Vermaes et al., 2014). Secure residential youth care is one of the most restrictive forms of residential youth care in the Netherlands, where adolescents are placed through a court order under civil law (Harder, 2011) and where residential groups and bedrooms that accommodate adolescents are locked (at night). Aside from offering treatment, attention is paid to the pedagogical climate of residential groups. A good pedagogical climate offers support and responsivity between group care works and adolescents, offers adolescents the opportunity to grow and develop, offers structure and rules, offers positive interactions between adolescents and a good atmosphere, offers safety, and encourages interactions between adolescents and their parents (De Lange et al., 2017; Van der Helm et al., 2018).

The risk and protective factors of the severe behavioral problems of adolescents are often found within the systems surrounding them. The social-ecological model developed by Bronfenbrenner (1979) explains that adolescent behavior is largely determined by the functioning of proximal systems such as the family system. Family characteristics associated with severe behavioral problems include parent–child relationship problems (Carr, 2019), poor parental monitoring (Biglan et al., 2004; Harder et al., 2017), and high levels of parenting stress (Vermaes et al., 2014). Higher parental involvement and monitoring, as well as empowerment and resilience processes (Liebenberg, 2020) can mitigate the development of severe behavior problems in adolescents (Biglan et al., 2004; Damen et al., 2019).

Viewing severe behavioral problems of adolescents as a result of interactions between systems, implies that the treatment of these problems should involve the systems surrounding adolescents (Carr, 2019; Figge et al., 2017). This has translated to residential youth care increasingly employing family-centered care (Geurts et al., 2012; Merritts, 2016; Sharrock et al., 2013). For example, juvenile justice institutions implemented the family-centered care program (Simons et al., 2017). Family-centered care in secure residential youth care aims to enhance parental involvement and family-centered staff attitude and behavior (See Figure 1 for a visualization of the conceptual model). To avoid further disruption of family relationships, it is often combined with systemic interventions. Because family functioning is predictive of adolescent outcomes post-discharge (Merritts, 2016), and because studies have found that residential programs offering systemic treatment had better outcomes than programs offering only individual treatment (Gorske et al., 2003), this study focuses on adolescent and familial outcomes of families who receive secure residential youth care combined with systemic interventions in the Netherlands.

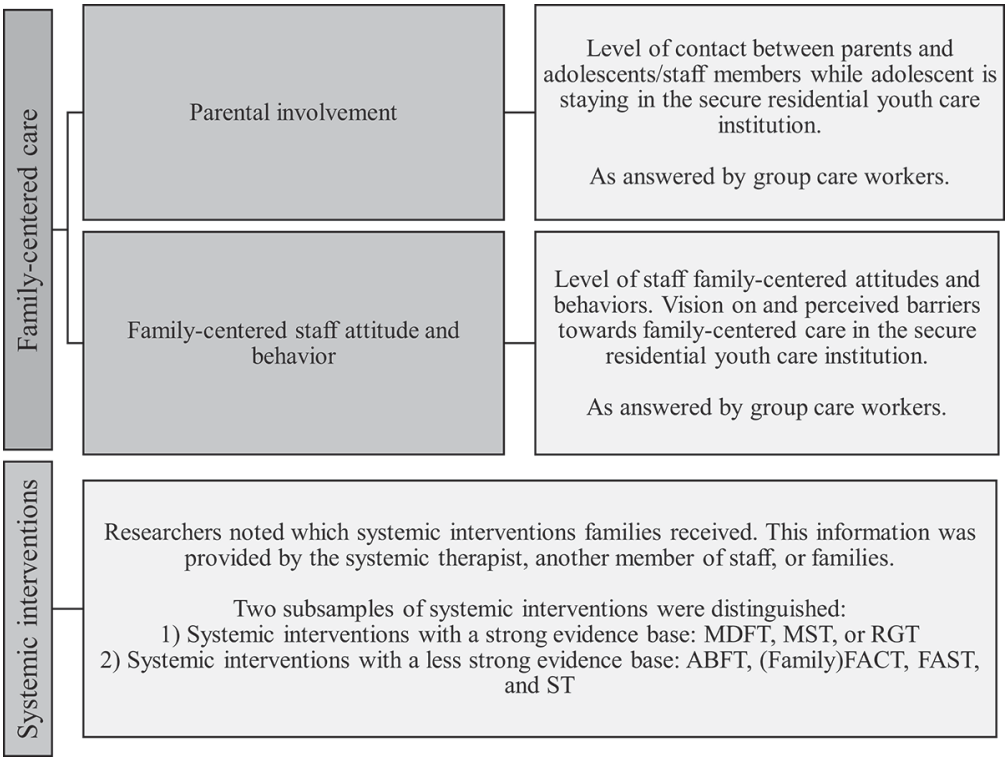

Figure 1. Operationalization of Family-centered Care and Systemic Interventions.
Note. Systemic interventions with a strong evidence base are well documented, manualized, well researched and use a quality assurance system as well as treatment fidelity measures to assure adequate treatment delivery. All other systemic interventions were grouped together to form a subsample of systemic interventions with a less strong evidence base.

Parental involvement in residential youth care has been shown to improve family relationships and treatment engagement, and to lead to reductions in parenting problems and adolescent behavior problems (Huefner et al., 2015; Merritts, 2016; Preyde et al., 2011). Greater parental involvement has the potential to improve bonding and relationships between parents and adolescents. These relationships may have been negatively affected prior to placement due to adolescent association with delinquent peers, mental illness of family members, or family instability (Robst et al., 2013). Improving family relationships is important for maintaining treatment gains after leaving the residential youth care institution. In fact, research has shown that treatment gains are better maintained with parental involvement during and after placement (Leichtman, 2006; Sharrock et al., 2013).

In addition to increasing parental involvement, residential youth care is also increasingly encouraging family-centered staff attitude and behavior. Group care workers (learn to) reason from a systemic perspective, encourage parents to be involved in all steps of the treatment, engage parents in decision-making, and take away perceived barriers of parental involvement (Simons et al., 2017).

Another optional component of family-centered care in residential youth care is the use of systemic interventions (Simons et al., 2017). Systemic interventions aim to change adolescent problem behavior by addressing factors from systems surrounding the adolescent. These systems not only include the family, but also the school and the neighborhood (Carr, 2019). Alongside the family system, interactions of adolescents with peers and within the neighborhood can influence the development and persistence of severe behavior problems. According to Dopp et al. (2017), a major limitation of traditional adolescent-focused treatments for severe problem behavior is that they have a relatively narrow individual focus on behavioral problems. The benefit of employing systemic interventions is that these involve members from the social-ecological context of adolescents and families and as a result are able to produce greater changes in severe behavior problems of adolescents than treatments delivered outside of an adolescent's social-ecological context (Dopp et al., 2017; Gorske et al., 2003).

Study Aims

Based on the above-mentioned insights, it could be assumed that family-centered care, combined with systemic interventions, is associated with better outcomes for adolescents and their families than care that is not combined with systemic interventions. Therefore, the current study aimed to assess whether levels of parental involvement or family-centered staff attitude and behavior predicted adolescent problem behavior, parental distress, family empowerment, and problems in the caregiver–child relationship in families receiving a systemic intervention. Secondly, we aimed to assess whether levels of parental involvement or family-centered staff attitude and behavior predicted the duration of the residential placement or the duration of the systemic intervention. Combining parental involvement or family-centered staff attitude and behavior in secure residential youth care with systemic interventions may enhance treatment efficiency and interdisciplinary cooperation. This could positively influence the duration of treatment; both in terms of a shorter duration of the residential placement and in terms of a shorter duration of the systemic intervention. Lastly, because it was expected that a variety of systemic interventions were employed within secure residential youth care, which could affect family functioning study outcomes (e.g., less parental distress, improved family empowerment, and caregiver–child relationships after treatment), the results were analyzed in two subsamples of families receiving either a systemic intervention with a strong evidence base or a systemic intervention with a less strong evidence base (this will be discussed in 'Instruments' in more detail).

Materials and Methods

Participants and Procedure

In this prospective study, participants received a combination of secure residential youth care and systemic interventions. This was a subsample (N = 111) of a larger study sample (Blankestein et al., 2021) of adolescents from seven secure residential youth care institutions located across the Netherlands. The majority of the adolescents in our study had a Dutch background (71%), the other adolescents had at least one biological parent who was born outside the Netherlands (29%; e.g., in Surinam, Turkey, Morocco, etc). The parents referred to in this manuscript include a variety of caregivers: biological parents, step parents, foster parents, siblings, or other relatives acting as guardians, amongst others. Of the 111 adolescents in our study, 48% were female. The average age was 15.58 years (SE = .11; range 12–18 years).

All parents and adolescents consented either passively, through an information letter, or actively, by signing a consent form. For institutions using the information letter procedure, participants were asked for their consent for treatment and informed that their data were being collected as part of clinical practice (i.e., Routine Outcome Monitoring) as well as for the purpose of this study. Contact details of the lead researcher were provided so participants could express their wish to not participate. The study complied with the APA ethical principles and the Internal Review Board of (VU University Medical Center) approved compliance with the ethical standards of Dutch law.

Parents answered baseline and outcome measures (pertaining to problem behavior, parental distress, family empowerment, and problems in the caregiver–child relationship) at the start of the combined trajectory of secure residential youth care and a systemic intervention (T1) and at the end of the combined trajectory (T2). Group care workers answered questionnaires regarding parental involvement and family-centered staff attitude and behavior. Psychologists, systemic therapists, or families informed the researchers of which systemic intervention was received and when it started and ended.

Instruments

Predictors

Parental Involvement All adolescents in secure residential youth care institutions are assigned a group care worker as a mentor. At the end of the residential placement, this mentor answered a questionnaire pertaining to parental involvement, specified in terms of level of contact between parents and adolescents or between parents and staff members. The questionnaire consisted of six questions: 1) '*Did parents visit the adolescent during their residential placement?*', 2) '*Has there been telephone contact between staff members and parents?*', 3) '*Did the adolescent spend furlough with parents?*', 4) '*Did an initial family meeting take place?*', 5) '*Did parents attend the treatment plan meetings?*', and 6) '*Did parents visit the institution for other activities?*' For questions 1–3, if mentors answered the questions with yes, they also indicated if this was up to once a week (0) or more than once a week (1). If their answer to the questions was no, the assigned score was 0 too. Questions 4–6 were answered with yes (1) or no (0).

From these six items, an average score was calculated on a scale from 0 to 1, with (0) indicating the lowest possible level of parental involvement and (1) indicating the highest possible level of parental involvement. Because we did not expect the different items to correlate with one another (as different institutions may choose to focus on one type of contact over another type), reliability of the instrument was not assessed.

Family-Centered Staff Attitude and Behavior Every 6 months all group care workers answered a questionnaire consisting of 31 items pertaining to their practice of and views on family-centered care in their residential group. This questionnaire was in large parts based on an earlier version used to measure family-centered staff attitude and behavior in Juvenile Justice Institutions in the Netherlands (Simons et al., 2016). The questionnaire used in our study consisted of 17 items that were answered on a 10-point scale (completely disagree [1] to completely agree [10]) and 14 items that were answered on a 5-point scale (never [1] to always [5]; later recoded to a 10-point scale), totaling 31 items. Two examples of the questions are '*Parents are difficult to work with*' and '*Parents are a source of support for staff members*.' For each assessment, an average score per group care worker was calculated based on all 31 questions. These average scores were then used to calculate an overall average score of family-centered staff attitude and behavior per residential group over the whole research period. The reliability of the total scale was acceptable (range $\alpha = .62$ to .86 across 6-month measurements).

Interventions

Systemic Interventions In line with Carr's recent paper (Carr, 2019), the current study used a broad definition of systemic interventions, covering various interventions consisting of family therapy and other family-based treatments, which engage family members or members of the wider network in order to resolve problems of children until the age of 18 years. The systemic interventions that were combined with secure residential youth care in this study are shown in Table 1. In most cases (85%), systemic interventions commenced during the stay of the adolescent in secure residential youth care. In other cases, the systemic intervention followed (immediately) after placement (15%). The systemic interventions were delivered by professionals who were trained in the delivery and models of the respective systemic interventions (i.e., trained MST therapists delivered MST in the home environment).

Table 1. Overview of numbers of families receiving various systemic interventions (Table view)

No	Systemic interventions	Reference	Frequency
Systemic intervention with a strong evidence base			
1	Multidimensional Family Therapy (MDFT)	Liddle et al., 1991	13
2	Multisystemic Therapy (MST, standard)	Henggeler et al., 2009	37

No	Systemic interventions	Reference	Frequency
3	MST specializing in treatment of problem sexual behavior (MST-PSB)	Borduin et al., 2009	3
4	MST specializing in treatment of individuals with an intellectual disability (MST-ID)	Blankestein et al., 2019	5
5	Relational Family Therapy (RGT)	Tjaden & Albrecht, 2015	3
Systemic intervention with a less strong evidence base			
6	Attachment Based Family Therapy (ABFT)	Diamond et al., 2016	8
7	Flexible Assertive Community Treatment (FACT)	Van Veldhuizen, 2007	2
8	FamilyFACT	Intermetzo, 2020	5
9	Forensic Ambulant Systemic Therapy (FAST)	Hoogsteder, 2016	3
10	Systemic Therapy (ST)	Savenije et al., 2010	32

Because of the large variety of systemic interventions with different levels of evidence base seen in the current study, the study population was first analyzed as a whole and afterward subdivided into 1) a subsample of families who received a systemic intervention with a strong evidence base and 2) a subsample of families who received a systemic intervention with a less strong evidence base. This first subsample received systemic interventions that have been well documented, manualized, and have attained a strong (international) evidence base for effectively treating severe adolescent problem behavior. Moreover, the selected interventions had to use a quality assurance system and treatment fidelity measures to assure good quality of treatment delivery (Garland & Schoenwald, 2013). Three interventions matched these criteria: Multidimensional Family Therapy (MDFT), Multisystemic Therapy (MST, standard), MST specializing in treatment of individuals with intellectual disabilities (MST-ID), MST specializing in treatment of problem sexual behavior (MST-PSB), and Relational Family Therapy (RGT). These three interventions were included in the subsample of systemic interventions with a strong evidence base (55% of full sample, n = 61). All other systemic interventions were then grouped together to form a subsample of systemic interventions with a less strong evidence base (45% of full sample, n = 50).

In secure residential youth care institutions, psychologists are in charge of referrals made to systemic interventions. Depending on which home-based systemic interventions are available in or near the place of residency of a family or which systemic interventions are available in the vicinity of the institution, psychologists were free to choose which systemic intervention they referred a family to. In this study, families were referred to 10 systemic interventions.

Characteristics of Adolescents and Their Families

Sociodemographic Characteristics Age, gender, and the cultural background of the adolescent were registered by researchers at the start of treatment. The start and end dates of the residential placement and the systemic intervention were used to calculate the duration of the residential placement and the duration of the systemic intervention in number of weeks.

Problem Behavior The Brief Problem Monitor for Parents (BPM-P; Achenbach et al., 2011) was used to assess adolescent externalizing problem behavior. The subscale externalizing problem behavior consists of seven items. One example of these items is: '*Argues a lot*.' Answers range from never (0) to often (2). A total score was calculated. A higher score indicates that parents see more externalizing problem behavior in their child. The reliability of the subscale was good in this study (α = .82). Chorpita et al. (2010) and Piper et

al. (2014) found a similar reliability of externalizing problem behavior in their studies (α = .81 and .86, respectively).

Parental Distress The Parental Distress subscale of the Parenting Stress Index (PSI; Abidin, 1990) was used to assess perceived parental distress. The subscale consists of eight items and measures the extent to which a parent feels competent, restricted, conflicted, supported, or depressed in their role as a parent. One example of these items is: '*Raising my child is more difficult than I expected*.' Possible answers range from completely disagree (1) to completely agree (6). An average score was calculated. Higher scores indicate parents experience more parental distress. Reliability (α = .88) of this subscale was good. Most studies use the short form of the PSI, for which a reliability of .79 for the subscale Parental Distress has been reported (Pérez-Padilla et al., 2015).

Family Empowerment The Family Empowerment Scale (FES; Koren et al., 1992) was used to assess family empowerment. The subscale Family Empowerment consists of 12 items with answers ranging from never (1) to very often (5). One example of these items is: '*I feel that my family life is under control*.' An average score was calculated. A higher score indicates a higher level of family empowerment experienced by parents. The reliability of this subscale was very good (α = .91). Prior research reported similar findings (α = .88; Koren et al., 1992).

Problems in Caregiver-Child Relationship The Burden of Parenting Questionnaire [Opvoedingsbelasting Vragenlijst] (OBVL; Vermulst et al., 2015) was used to assess problems in the caregiver–child relationship. The subscale consists of six items with a higher score indicating more problems in the caregiver–child relationship. One example of these items is: '*I feel calm when my child is with me*.' A total score was calculated. Answers range from not at all true (1) to completely true (4). The reliability was very good (α = .93). Earlier (Dutch) research provided similar reliability findings for this subscale (α = .94; Vermulst et al., 2015).

Statistical Analyses

Missing Data

To assess patterns of missing data, the 111 families in this study were divided into a group with no missing data at all and a group with missing data on at least one variable across time points (T1-T2). Analyses showed that 49% (n = 54) of families had missing data on at least one variable, while 51% (n = 57) of families had no missing data at all. A comparison of families with and without missing data was made using t test analyses for continuous variables. For dichotomous variables Chi squares were calculated. Analyses showed that the two groups did not differ on any of the baseline variables, including parental involvement and family-centered staff attitude and behavior.

To enable the use of data of all 111 families, data were imputed 40 times on all variables using the Multiple Imputation (MI) Bayesian estimation procedure and a two-level model in Mplus version 8.3 Muthén & Muthén (1998–2017). Imputed values were restricted to values falling within the range of the relevant (scale of the) variables. By using the MI procedure, nonresponse bias can be reduced and power of analyses can be increased (Enders et al., 2016).

Multilevel Linear Regression Analyses

Adolescents were nested in residential groups in the secure residential youth care institutions. Except for family-centered staff attitude and behavior, all variables were measured at the individual adolescent level.

Therefore, multilevel linear regression analyses were employed. Parental involvement and family-centered staff attitude and behavior were included as predictors. The baseline measures of the outcome measures were also included in the analyses as predictors. Outcomes were assessed separately using the Robust Full Maximum Likelihood (MLR) method. Any potential deviations from normality are addressed using MLR, because it is a robust estimator for non-normal and dependent data (Muthén & Muthén, 1998–2017). The analyses were performed in the full sample and subsamples.

Although not the primary focus of this paper, comparative AN(C)OVA analyses were used to establish whether the study variables differed significantly between the subgroups. The baseline measures of the outcome measures were included in the analyses as covariates.

All analyses were two-sided with a significance level of $p < .05$.

Results

Descriptive Results and Group Comparison

Table 2 displays the levels of parental involvement and family-centered staff attitude and behavior for the full sample and the subsamples. The levels of the outcome variables have also been detailed for these groups in Table 2.

Table 2. Descriptive statistics of baseline and outcome variables in full sample and subsamples (Table view)

Variables	Start of trajectory		End of trajectory		
Full sample	*M*	*SE*	*M*	*SE*	Range
Parental involvement			.56	.02	0.00–1.00
Staff family-centered attitude and behavior			7.33	.02	1.00–10.00
Adolescent externalizing problems	8.14	.32	5.11	.32	0.00–14.00
Parental distress	3.58	.11	3.59	.12	1.00–6.00
Family empowerment	3.85	.06	4.01	.05	1.00–5.00
Problems in caregiver-child relationship	14.96	.44	12.69	.45	6.00–24.00
Duration of residential placement (weeks)			26.61	2.71	6.00–106.00
Duration of systemic intervention (weeks)			30.95	2.65	5.00–110.00
Subsample strong evidence base	*M*	*SE*	*M*	*SE*	Range
Parental involvement			.55	.02	0.00–1.00
Staff family-centered attitude and behavior			7.43	.04	1.00–10.00
Adolescent externalizing problems	8.38	.45	5.55	.44	0.00–14.00
Parental distress	3.57	.13	3.44	.16	1.00–6.00
Family empowerment	3.88	.08	4.11	.06	1.00–5.00
Problems in caregiver-child relationship	15.31	.63	13.21	.59	6.00–24.00
Duration of residential placement (weeks)			19.26	4.42	6.00–106.00
Duration of systemic intervention (weeks)			24.97	2.31	5.00–110.00
Subsample less strong evidence base	*M*	*SE*	*M*	*SE*	Range
Parental involvement			.56	.03	0.00–1.00
Staff family-centered attitude and behavior			7.22	.04	1.00–10.00
Adolescent externalizing problems	7.85	.45	4.58	.48	0.00–14.00
Parental distress	3.59	.17	3.77	.18	1.00–6.00
Family empowerment	3.81	.09	3.89	.09	1.00–5.00
Problems in caregiver-child relationship	14.54	.63	12.06	.73	6.00–24.00
Duration of residential placement (weeks)			35.58	3.73	6.00–106.00
Duration of systemic intervention (weeks)			38.25	4.21	5.00–110.00

Note. The possible range of scores is displayed under Range.

AN(C)OVA analyses indicated that the subsample of systemic interventions with a strong evidence base showed significantly higher levels of family-centered staff attitude and behavior (F[1, 109] = 24.64, p = .00), less parental distress (F[1,109] = 12.18, p = .01), and a shorter duration of both the residential placement (F[1, 109] = 20.57, p = .00) and the systemic intervention (F[1, 109] = 16.36, p = .00) than the subsample of systemic interventions with a less strong evidence base.

Results of Regression Analyses in Full Sample

The predictors of parental involvement and family-centered staff attitude and behavior were sufficiently unrelated (r < .70; Akoglu, 2018) to be included in the analyses together (see Table 3 for the correlation matrix).

Table 3. Pearson correlations (Table view)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	
1. Parental inv	-												
2. Staff FC	.04	-											
3. SI-EB	−.00	.43***	-										
4. Age	−.06	.08	.02	-									
5. Cul backg	.05	.02	.01	.04	-								
6. Gender	.11	−.16	−.25**	−.05	.03	-							
7. Ext beh T1	.25**	.12	.08	−.10	−.20*	−.05	-						
8. Par dis T1	.01	−.03	−.01	.08	−.28**	−.00	.29**	-					
9. Fam em T1	.14	.06	.06	.01	.15	−.13	.02	−.49***	-				
10. Prob rel T1	−.03	.10	.08	−.02	−.25**	.00	.49***	.42***	−.36***	-			
11. Ext beh end	.13	.20*	.15	.05	.20*	−.13	.46***	.12	.10	.27**	-		
12. Par dis end	.03	.19*	−.14	−.02	−.15	−.08	.35***	.30**	−.23*	.26**	.49***	-	
13. Fam em end	−.12	.22*	.20*	−.02	.02	.03	−.09	−.18	.52***	−.16	−.23*	−.53***	
14. Prob rel end	.12	.07	.13	.20*	−.02	−.13	.25**	.17	−.14	.52***	.58***	.42***	−
15. Dur place	.02	−.47***	−.40***	−.22*	.14	.13	.07	.15	−.19*	.18	.13	.06	·
16. Dur SI	.33***	−.25**	−.35***	−.15	.34***	.18	.03	−.11	.08	.02	.08	.05	

Note. 1. Parental involvement 2. Family-centered staff attitude and behavior 3. Systemic intervention – evidence base (1 = strong evidence base) 4. Age 5. Cultural background adolescent (1 = Dutch background) 6. Gender (1 = female) 7. Externalizing problem behavior at the start of trajectory 8. Parental distress at the start of trajectory

9. Family empowerment at the start of trajectory 10. Problems in caregiver-child relationship at the start of trajectory 11. Externalizing problem behavior at the end of trajectory 12. Parental distress at the end of trajectory 13. Family empowerment at the end of trajectory 14. Problems in caregiver-child relationship at the end of trajectory 15. Duration of residential placement 16. Duration of systemic intervention.
*p < .05 **p < .01 ***p < .001

The results of the multilevel linear regression analyses are detailed in Table 4. For the regression analyses predicting the outcomes in the full sample, results showed that a higher level of parental involvement predicted a lower level of family empowerment as reported by parents. In addition, when staff reported higher levels of family-centered attitudes and behaviors, the duration of the placement was shorter.

Table 4. Predictors of treatment outcomes of families receiving systemic interventions (Table view)

			Imputed data								
			Full sample			Subsample strong EB[a]			Subsample less strong EB[a]		
Model	Dependent variables	Predictors	*b*	*SE*	*p* value	*b*	*SE*	*p* value	*b*	*SE*	*p* value
1	Adolescent externalizing problems	PI[b]	−.54	2.05	.791	.34	2.26	.881	−.73	4.98	.884
		FC[c]	3.54	2.79	.204	5.50	4.38	.209	1.02	4.28	.812
2	Parental distress	PI[b]	−.05	.83	.952	−.30	.72	.678	.09	2.73	.975
		FC[c]	.96	1.26	.446	**1.86**	**.62**	**.000*** **	1.28	.91	.157
3	Family empowerment	PI[b]	**−.54**	**.25**	**.032***	**−.78**	**.33**	**.017***	−.52	.60	.390
		FC[c]	.42	.29	.144	.10	.38	.789	.44	.98	.654
4	Problems in caregiver-child relationship	PI[b]	2.74	2.69	.308	3.99	3.18	.209	.66	4.18	.875
		FC[c]	.66	3.37	.846	2.40	6.92	.729	−.83	3.94	.833
5	Duration of residential placement	PI[b]	−7.31	11.63	.530	−12.14	11.22	.279	7.00	23.17	.763
		FC[c]	**−27.05**	**11.37**	**.017***	**−32.53**	**14.85**	**.028***	−17.83	13.16	.175
6	Duration of systemic intervention	PI[b]	26.75	16.68	.109	**13.77**	**5.18**	**.008** **	**39.50**	**10.29**	**.000*** **
		FC[c]	−14.12	10.14	.164	**−18.93**	**8.54**	**.027***	.74	8.91	.934

Note. Significant results are presented in bold.
[a]EB = Evidence base of the systemic intervention
[b]PI = Parental involvement
[c]FC = Family-centered staff attitude and behavior
*p < .05 **p < .01 ***p < .001

Results of Regression Analyses in Subsamples

Subsample with Strong Evidence Base

In the subsample of families receiving a systemic intervention with a strong evidence base, multilevel linear regression analyses showed that higher reported levels of family-centered staff attitude and behavior predicted a higher level of parental distress, a shorter duration of the residential placement, and a shorter

duration of the systemic intervention. Additionally, higher reported levels of parental involvement predicted a lower level of family empowerment as reported by parents and a longer duration of the systemic intervention.

Subsample with Less Strong Evidence Base

In the subsample of families receiving a systemic intervention with a less strong evidence base, multilevel linear regression analyses showed that family-centered staff attitude and behavior did not predict any of the outcomes. Parental involvement, however, predicted the duration of the systemic intervention. Results indicated that higher levels of parental involvement predicted a longer duration of the systemic intervention.

Discussion

This study is among the first to examine how parental involvement and family-centered staff attitude and behavior relate to outcomes of families receiving secure residential youth care combined with systemic interventions. Consequently, it contributes to the limited body of literature highlighting the outcomes of these combined trajectories, especially those outcomes pertaining to family functioning which have historically received little attention (Knorth et al., 2008; Sunseri, 2020).

In this study, parental involvement predicted few of the outcomes of secure residential youth care combined with systemic interventions. When the level of parental involvement was related to an outcome, these relationships were rather unexpected. Higher levels of parental involvement predicted a lower sense of family empowerment as experienced by parents in the full sample and in the subsample of systemic interventions with a strong evidence base. Higher levels of parental involvement also predicted a longer duration of the systemic intervention in the subsamples of systemic interventions with a strong evidence base and with a less strong evidence base. This indicates that when the level of contact during the residential placement is higher, parents felt less empowered at the end of the combined trajectory and the duration of the systemic intervention became longer.

Parental involvement correlated significantly, although not very strongly, with the level of adolescent externalizing problem behavior at the start of the trajectory. This indicates either that when adolescent problem behavior was more severe, parents were more involved during placement or that when parents were more involved during placement, they saw and reported more severe problem behaviors of adolescents. It is possible that through having more frequent contact, parents are more exposed to the behavior problems their children display during their placement in secure residential youth care. Consequently, they can perceive themselves as not being able to provide enough support to alleviate the problems which may result in parents experiencing a lesser sense of empowerment. Increased contact during placement combined with working through issues in family functioning in the systemic intervention could relate to a lowered sense of empowerment at the end of the trajectory.

Alternatively, higher levels of parental involvement in families experiencing less empowerment could result from staff members involving parents more. Staff members may increase the frequency of contact with parents when they notice changes in family empowerment. This may also lead to them encouraging parents to strengthen their parenting competencies (for instance, by improving parental monitoring, reducing parenting stress, and improving parent–child relationship problems) – an important component of empowerment (Damen et al., 2019). In this case, one may have expected staff family-centered attitude and behavior to relate to family empowerment as well. This relationship was, however, not found. This may be because the total scale of staff family-centered attitude and behavior is not sensitive enough to establish the degree to which group care workers feel they encourage parental involvement or because staff family-centered attitude and behavior was measured at the residential group level. Future research could therefore opt to look into specific staff family-centered attitudes and behaviors.

Looking more closely into the relationship between parental involvement and the duration of the systemic intervention, we found that when systemic interventions had a very short duration (defined as less than 12 weeks) significantly lower levels of parental involvement were reported than when systemic interventions had longer durations (defined as 12 weeks and over). It may be that combinations of secure residential youth care with very short systemic interventions tend to reflect the unsuccessful implementation of treatment of families with whom engagement could not be achieved, leading to lower levels of parental involvement. This way, lower parental involvement could be reflective of a lack of engagement which could lead to attrition, as seen in prior research (Carl et al., 2020).

In regard to family-centered staff attitude and behavior, higher levels predicted 3 out of 6 outcomes in this study for the subsample of families receiving a systemic intervention with a strong evidence base. In these families, higher levels of family-centered staff attitude and behavior predicted a higher sense of parental distress, a shorter duration of the residential placement and a shorter duration of the systemic intervention. In the full sample, higher levels of family-centered staff attitude and behavior also predicted a shorter duration of the residential placement.

The finding that a higher level of family-centered staff attitude and behavior predicted higher parental distress – at the end of the combined trajectory of secure residential youth care and systemic interventions with a strong evidence base – was somewhat surprising. It may be that the increase in staff involving parents in treatment or decision-making, could lead to parents gaining more insight into how their parenting interrelates with adolescent problem behavior. As a consequence, this could result in parents feeling less competent. Here, the correlation between higher parental distress and higher levels of adolescent externalizing problem behavior at the end of the systemic intervention is worth noting, since studies on parental perspectives of parenting stress and competence note that when behavior problems of adolescents are severe, parents experience less competence (Harder et al., 2017). In other words, higher levels of family-centered staff attitude and behavior and more externalizing behavior problems at the end of the trajectory, seem to contribute to lower sense of competence in parents.

A higher level of family-centered staff attitude and behavior also predicted a shorter duration of the residential stay. This finding may indicate that when treatment staff, including group care workers and systemic therapists, work in a more family-centered way, this helps to minimize the duration of the residential stay. In secure residential youth care institutions these stays currently average 6 months (Jeugdzorg Nederland, 2020). Our study shows that when a systemic intervention with a strong evidence base is implemented in combination with secure residential youth care, the average stay is reduced to less than 20 weeks (<5 months). This is not entirely surprising given that some combined trajectories of family-centered care at the residential group level and evidence-based systemic interventions explicitly aim to reduce the duration of residential stay to a maximum of for example, 6–8 weeks (Rovers et al., 2019).

The combination of family-centered care in secure residential youth care and systemic interventions with a strong evidence base seems to reduce the duration of the systemic intervention as well. In this study, the average duration of systemic interventions with a less strong evidence base was 38 weeks, whereas the average duration of systemic interventions with a strong evidence base was less than 25 weeks; indicating a significant difference in duration of the systemic intervention. Some systemic interventions explicate the maximum duration of the treatment and some systemic interventions aim to be shorter than others, depending on the accumulation of family problems the intervention addresses. It may be that combined trajectories of secure residential youth care and systemic interventions with a strong evidence base enhance treatment efficiency, especially when quality assurance systems and close monitoring of treatment adherence and treatment duration are in place.

Whether or not treatments employed in residential youth care should be of a stronger evidence base, is an ongoing debate (James, 2017; Lee & McMillen, 2017). According to Lee and McMillen (2017) evidence-

based practices are more often discussed than implemented in residential care. They emphasize that evidence-based manualized treatments have neither been designed for nor tested in a residential care setting (Lee & McMillen, 2017), which may be due to a lack of research on the adaptation and implementation of high quality and evidence-informed treatments for residential care (James, 2017; Vaskinn et al., 2020). Our study suggests that combining family-centered residential youth care with evidence-based systemic interventions may shorten the durations of both the residential placement and the systemic intervention. More research is needed to compare the outcomes of such combined trajectories with the outcomes of usual residential youth care and to establish what kind of care works best for which adolescents and families.

Limitations and Strengths

It is important to interpret the results of this study with care. Though the multilevel regression analyses allowed us to identify relations between predictors and outcomes, causal relationships could not be established (Pearl et al., 2016). Also, while a group comparison was conducted between outcomes of the subsample of families with a systemic intervention with a strong evidence base and the subsample of families with a systemic intervention with a less strong evidence base, these groups were not matched on baseline characteristics and so results cannot be ascribed to the treatment condition with certainty.

A strength of this study is the above-average response rate (51%). Since response rates after placement in secure residential youth care are generally lower (38%; Barendregt & Wits, 2018), the number of families with missing data across time points was unsurprising. Moreover, using Multiple Imputation (MI) allowed for a reduction of the nonresponse bias, an increase in the power of analyses, and for inclusion of all 111 families in the analyses (Enders et al., 2016).

Another limitation of this study is that the constructs of family-centered staff attitude and behavior and parental involvement were measured exclusively from the perspective of the professional. Perspectives on these constructs may, however, differ when assessed from the parental or adolescent perspective (Sulimani-Aidan & Paldi, 2020). Future studies could opt to assess parental involvement from a different perspective, therewith allowing parents' or adolescents' voices to take a more central role in research (Rap et al., 2019).

As discussed, the concept of parental involvement was measured in terms of the level of contact between parents and staff or parents and adolescents. This level or the frequency of contact has previously been found to be inversely affected by the distance between where parents reside and where a residential youth care institution is located (e.g., Huefner et al., 2015; Robst et al., 2013). Unfortunately, we did not include the distance to the care institution in our study and this should be considered a limitation of this study. Efforts were made in this practice-based study to minimize the number of additional questionnaires for parents and staff members. Because parental involvement may have been (negatively) affected by distance to the institution, the authors strongly encourage future studies to include this variable and to assess its relation with parental involvement.

A further limitation of this study is that no information pertaining to the dosage or the fidelity of the systemic interventions was gathered. As mentioned previously, the systemic interventions were delivered by professionals who were trained in the delivery and models of the respective systemic interventions (i.e., trained MST therapists delivered MST in the home environment), which monitored whether professionals delivered the systemic intervention as intended. Nevertheless, future research could opt to collect fidelity (and dosage) data from the organizations administering systemic interventions to ensure that all treatments were carried out as intended.

Finally, it must be noted that while a large variety of systemic interventions (10) were present in this study, 2 of the systemic interventions made up the majority of the study sample: MST (including specializations thereof) and ST were received by 69% of families. Since MST is part of the subsample of

families receiving a systemic intervention with a strong evidence base and ST is part of the subsample of families receiving a systemic intervention with a less strong evidence base, this may affect the generalizability of the results.

Future Studies

Future studies could opt to include larger samples of adolescents who have received different systemic interventions. It may also be valuable for future studies to identify which facilitating factors and barriers staff members who are responsible for referrals to systemic interventions, encounter. Insight into strategies of staff members relating to how families are engaged and how various forms of contact, or a higher level of parental involvement is achieved, would be of value too. Finally, giving adolescents and parents a more central role in research on family-centered care and parental involvement, is advisable. Qualitative research in the form of interviews could help shed light on these aspects.

Conclusion

This study has shown that elements of family-centered care, namely levels of parental involvement and family-centered staff attitude and behavior in secure residential youth care, can improve outcomes of adolescents receiving systemic interventions. The study also indicates that levels of family-centered attitude and behavior are higher when systemic interventions have a strong evidence base. When systemic interventions with a strong evidence base are employed, parents also experience less parental distress and the durations of the residential placement and systemic intervention are shorter. Therewith, it provides the discussion pertaining to whether or not to implement evidence-based practice in residential youth care with valuable information. More research is needed to identify how outcomes of families receiving systemic interventions and secure residential youth care compare to outcomes of families who do not receive systemic interventions. Giving parents and adolescents a more central role in research on family-centered care, is advisable.

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Declaration of Interest Statement

The authors have no conflicts of interest to declare.

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