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Observations of Group Care Worker-Child Interaction in Residential Youth Care: Pedagogical Interventions and Child Behavior

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Abstract

Background   The work of group care workers in residential youth care is often described as professional parenting. Pedagogical interventions of group care workers influence the quality of care for looked-after children.

Objective   The aim of the current study was to observe the pedagogical interventions of group care workers within residential youth care and their associations with child behaviors.

Methods   Group care worker interventions and child behaviors were videotaped during structured observations. Participants included 95 children (64 % boys, $M_{age} = 9.19$) and 53 group care workers (74 % female, $M_{age} = 33.79$ years). A coding system was developed to code pedagogical interventions and child behaviors.

Results   It showed that group care workers mainly used positive pedagogical interventions (warmth/support and positive control) and seldom used negative pedagogical interventions (permissiveness and negative control). Frustration and anger of children was associated with positive controlling interventions and permissiveness of group care workers. The hypothesis that child anxiety and nervousness is associated with warm and supportive interventions could not be confirmed.

Conclusions   Pedagogical interventions should be part of education, training, and supervision of group care workers.

Keywords   Youth · Residential care · Group care worker · Pedagogical interventions · Problem behaviors · Observations

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Introduction

In the Netherlands, approximately 30,000 children are placed in residential care every year because of behavioral problems, developmental disorders, and family dysfunction [Sociaal Cultureel Planbureau (SCP) 2009]. Residential care is 24/7, and includes various components such as living arrangements, education, family care, and individual and group therapy. Next to school attendance and therapy, children spend most of their time in residential care within the living group environment; aptly put as "the other 23 hours" (Trieschman et al. 1969). The current study deals with this component of care in which the largest part of treatment takes place. Within the living group environment, group care workers are the most important staff members (Bastiaanssen et al. 2012; Knorth et al. 2010; Smith et al. 2013). It is the task of group care workers to shape treatment by interacting with children and helping them through difficult events and processes (Anglin 2002; Petrie et al. 2006; Ward 2004, 2007). However, the role of group care workers in residential care has been largely neglected in research. After reviewing the literature on the role of group care workers, Knorth et al. (2010) suggested that "what their precise share in the 'production' of behavioral improvement is cannot be given on the basis of empirical research" (p. 61). However, according to these authors, researchers do know whether the work of group care workers substantially influences the quality of care for looked-after children. Studies that picture this quality of care and demonstrate a relationship between quality and child problem behaviors are very much needed (Lee and McMillen 2008). The present study aimed to be a step in this direction.

The activities of group care workers include not only physical and material matters, but also pedagogical and psychological care (Knorth et al. 2010). Some empirical studies on the quality of the relationship and working alliance between group care workers and youth in residential care do exist (Handwerk et al. 2008; Harder et al. 2012a, b; Moses 2000). These studies have reported on the associations between alliance skills of residential staff, quality of the relationship between staff and youth, and treatment outcomes. In addition to basic skills for building relationships and working alliances with youth, group care workers also have a pedagogical task. Several scholars have described the work of group care workers in youth residential care as professional parenting. McGuiness and Dagan (2001) compared group care workers to parents, as these workers fulfill the role of parents. Smith et al. (2013) referred to group care workers as being corporate parents. Shealy (1996) developed the Therapeutic Parent Model as a guideline for the selection and training of group care workers. The theoretical and empirical foundations from the Therapeutic Parent Model are based on the literature on associations between parenting and child psychopathology and common factors of therapist efficacy. According to the Therapeutic Parent Model, group care workers must be predictable and consistent, not abusive, know about teaching and counseling, and supervise residents. Cameron and Maginn (2011) highlighted the importance of high quality of parenting by group care workers because they work with children who are often traumatized within their families of origin. These scholars stated: "Professional residential and foster 'parenting' for particularly vulnerable children and young people demands that the skills and knowledge of parenting cannot be left to trial and error, but need to be unpacked, analyzed, understood and implemented so that even in challenging circumstances, the 'professional parents' will know what they should do" (p. 49). This view on group care workers as professional parents is in line with Kok's (1997) theory. Specifically, Kok developed one of the most elaborated conceptual frameworks for group care worker interventions in the Netherlands. He described the tasks of group care workers as being specific parenting where pedagogical interventions of these workers are

tuned to the specific needs of looked-after children. The current study focused on the pedagogical component of residential care. The behavior of group care workers that constitutes this component is defined here as *pedagogical interventions*.

When group care workers are viewed as professional parents and child rearing is an important task, interest in the content and quality of their pedagogical interventions increases. Further, evidence exists for features of good parenting (Baumrind 1971; Maccoby and Martin 1983) in which warmth and control stand out as pivotal parenting dimensions in healthy child upbringing. Not surprisingly, several authors have mentioned the combination as an impetus for pedagogical interventions of group care workers (Bastiaanssen et al. 2012; Harder et al. 2008; Holmqvist et al. 2007; Kok 1997; Shealy 1996; Stein 2009). Some authors have especially mentioned the importance of warm and supportive interventions (Boendermaker et al. 2012; Cameron and Maginn 2008, 2011).

Few empirical studies have dealt with measuring pedagogical interventions of group care workers. Van der Ploeg and Scholte (2003) conducted a study in a Dutch adolescent residential care facility and found that group care workers used somewhat more controlling interventions than affection and support. In another comparable study, Scholte and Van der Ploeg (2000) connected problem behaviors of children with pedagogical interventions of group care workers. These researchers found that a pedagogical climate of firm, not harsh, control together with consistent, non-obtrusive, emotional support, promoted healthy development of youth in residential care. Andersson and Johansson (2008) interviewed group care workers to explore and systemize their ideas about the treatment of individual youth. The researchers developed a model that consisted of categories and conditions of treatment as provided by group care workers. Conditions of treatment were control and protection, holding and containing, conflict management, learning and organizing. The intentions of group care workers to use certain treatment conditions were individualized to specific children. However, this study did not specify the type of problem behaviors among the youth; therefore, the model provides no guarantee that treatment conditions were according to youths' needs.

In a study from our team, we further developed the Group Care Worker Intervention Checklist (GICL; Bastiaanssen et al. 2012), which is a questionnaire first developed in the 1980s by Kloosterman and Veerman (1997). Parenting dimensions were at the base of conceptualizing the GICL. With the GICL, group care workers report on their pedagogical interventions toward a specific child. The questionnaire reveals three concepts: controlling, warmth/support, and autonomy granting. In this study, controlling interventions appeared to be associated with externalizing problem behaviors of children, and warm, supportive, and autonomy granting interventions were associated with internalizing problem behaviors (Bastiaanssen et al. 2012). These findings show that group care workers use pedagogical interventions during interactions with children in their care and preliminary evidence exists that pedagogical interventions of group care workers are associated with child behaviors.

To date, all studies conducted have used surveys or interviews in which group care workers reported on their own behaviors. In self-report studies, informants are, by nature, biased; therefore, it is pivotal to use multiple strategies to gather data on group care worker interventions. Specifically, observations of pedagogical interventions of group care workers might provide another source of information (Lee and McMillen 2008). Few observational studies regarding group care worker interventions exist. Van den Berg (2000) conducted an observational study on interactions between group care workers and children in residential child care for children under 12 years. In 60 % of their interactions with children, group care workers used warm and supportive interventions. Next to warm interventions, group care workers used structuring and controlling interventions (25 %).

Negative interactions between group care workers and children seldom occurred. Crosland et al. (2008) observed interactions between group care workers and children before and after staff training in behavioral management. After training, more positive interactions occurred between group care workers and children. There was no decrease in negative interactions; however, as in Van den Berg (2000), there were few negative interactions at baseline. They also found that staff interacted more with children after training. The absence of interactions with children (e.g., administration, chores, or interacting with other care workers) also decreased substantially. Embregts (2002) used video-feedback to train group care workers and simultaneously observed their behaviors in a residential institution for youth with mild intellectual disabilities and attention deficit hyperactivity disorder (ADHD). After training, appropriate responses of group care workers to youth behavior increased. Van den Berg (2000), Crosland et al. (2008), and Embregts (2002) did not relate group care worker interventions with child behaviors.

The current study focused on pedagogical interventions of group care workers with the belief that pedagogical interventions are a core aspect of group care work in residential youth care. A few studies have investigated the content of pedagogical interventions of group care workers using questionnaires or observational research. Some questionnaire studies have connected pedagogical interventions to child behaviors, and reported associations between pedagogical interventions of group care workers and specific child behaviors (Andersson and Johansson 2008; Bastiaanssen et al. 2012). The observational studies reviewed did not report on associations with child behaviors. The aim of the current study was to observe the pedagogical interventions of group care workers within residential youth care systematically and their associations with children's behaviors. Building on the knowledge of pedagogical interventions of group care workers, important parental dimensions of warmth and control are combined with positive and negative interactions between group care workers and youth in residential care. Firstly, it was expected that group care workers would use pedagogical interventions while interacting with children and the proportion with which group care workers put these interventions into practice could be measured. Therefore, a structured observation protocol and coding system were developed. In view of reviewed studies on group care worker interventions to date, it was expected that group care workers would mainly use positive pedagogical interventions. Secondly, it was expected that pedagogical interventions of group care workers would be associated with specific child behaviors. When children displayed externalizing behaviors, group care workers would use controlling interventions. Conversely, when children displayed internalizing behaviors, group care workers would use more warm and supportive interventions.

Methods

Participants and Setting

This study took place in the residential departments of two youth care institutions for children aged 5–12 years old in east Netherlands. Children were placed in a youth residential care setting because of problematic child behaviors (e.g., ADHD, oppositional defiant disorder, attachment disorders, and pervasive developmental disorder). In most cases, issues related to problematic family functioning were apparent (e.g., problems with parenting or in the parent–child relationship, parental psychiatric problems, and parental alcohol and drug abuse). Referrals were made by various agencies, and care was either

voluntary or forced. The residential care varied from short-term shelter to more permanent stays; therefore, varied in frequency and duration of care. The two residential settings together hosted approximately 80 children, divided over 8 treatment groups (approximately 10 children per treatment group). The treatment program consisted of living arrangements, education, recreational activities, and individual and family therapy.

Observations were collected at six residential units of one institution between February 2010 and July 2011. In February and March 2011, observations were collected at two residential units of the second institution. All children in residential care during the time of data collection participated in this study except for four children whose parents did not provide informed consent. Of the 95 children who participated, 64 % were boys ($M_{age} = 9.19$ years, $SD = 1.93$, range 5–15[1]). Children had been in residential case for 1–88 months ($M = 10.8$). All group care workers in the residential institutions at the time of data collection participated in this study ($N = 53$), except for those who worked only a few hours a week or were substitutes and did not know the children very well. Of the group care workers, 74 % were female ($M_{age} = 33.79$ years, $SD = 9.80$, range 22–60) and 85 % had professional bachelor's degrees. Because there were more children than group care workers, some workers participated more than once with a maximum of three times. All parents or caretakers were informed of the study and were asked to provide consent for their child to participate and for the use of the data for scientific purposes.

Observation Procedure

Observations took place between group care worker and child in a familiar room within the living group environment. Observing interactions between group care workers and children away from other staff and children makes comparison across children possible. To elicit interactions that represented daily living in the unit, a structured observation protocol was developed that included different tasks for group care workers and children. In constructing the protocol, knowledge was drawn from commonly used protocols for observing parent–child interactions (e.g., Granic et al. 2003; Granic et al. 2007; Hollenstein et al. 2004). The protocol was developed in collaboration with psychologists coordinating the living units in the residential institutions to make sure it came close to the day-to-day interactions between group care workers and children.

Observations were videotaped and group care workers and children were aware that they were being videotaped. Two video cameras were used to guarantee at least one usable videotape; one placed in sight and the other placed out of sight. The researcher explained the tasks and waited outside the room during the tasks. The researcher entered the room after each task ended to instruct the child and group care worker of the next task.

The first task was a warm-up task meant to get participants started on a positive, not too difficult, note. The child and group care worker were instructed to plan a birthday party for the child. The second task was a frustration task that consisted of four puzzles from the intelligence test SON-R, subtest Mosaics (Snijders et al. 1988). Each child was given 1 min per puzzle, which is not enough for the vast majority of children this age to finish the puzzle. The intent of this task was to induce frustration and elicit interventions from the group care worker. Each group care worker was asked to keep track of the time with the help of a stopwatch and tell the child when to move on to the next puzzle. After 4 min, the researcher reentered the room even if the child had not finish the task. The third task was a conflict-

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[1] All children belonged to the age category for residential care for younger children (5–12 years old), except for one child (15 years old). When excluding this child, Mage $= 9.13$ years, $SD = 1.85$, range 5–12.

solving task. Before observations began, group care workers administered the Conflict Questionnaire, which is an adapted version of the Issues Checklist (Prinz et al. 1979). This questionnaire lists a number of potential sources of conflict between group care workers and children (e.g., lying, swearing, and conflicts with other children in the living group). In the conflict task, the researcher introduced a recent and serious conflict topic reported by the group care worker. Participants were instructed to discuss the topic and try to solve the problem. The fourth task was a cooling-down task. During this last task, each child and group care worker engaged in a short game that was appropriate for the child to end the observation in a positive manner. The first task, intended for warming up, was 2 min in length, and the other three tasks were 4 min each. Tasks 2 and 3 (frustration and conflict tasks, respectively) were the core tasks intended to elicit child behaviors and group care worker pedagogical interventions. The choice for these tasks was based on literature on healthy child development. Frustration tolerance and conflict-solving skills are important developmental tasks for children and are especially challenging for children in residential youth care (Pazaratz 2000; Small et al. 1991). Evidence suggests that conflict-solving tasks differentiate clinic-referred from normal children (e.g., Borduin et al. 1985; Forgatch et al. 1985; Kazdin et al. 1987). Concerning warm-up Task 1 and cooling-down Task 4, planning a birthday party and playing a game are familiar activities for group care workers and children.

Coding Procedure

To code pedagogical interventions of group care workers and child behaviors, a coding system was developed (Bastiaanssen and O'Hara 2012). With regard to existing knowledge on effective parental and care giving behaviors, concepts for the coding system were derived from a variety of existing systems on the subject [i.e., the Specific Affect Coding System (SPAFF; Gottman 1995), the Caregiver Interaction Rating Scale (CIS; Arnett 1989), the Positive Control Scale (De Schipper et al. 2009) and the Global Ratings Manual of the Granic Coding Lab in Toronto (Granic Coding Lab 2008)]. Pedagogical interventions for group care workers were operationalized with the variables warmth/support, positive control, permissiveness, and negative control. The first two concepts, warmth/support and positive control, were positive pedagogical interventions. When a group care worker was warm and supportive, he or she was reassuring the child, being affectionate, giving compliments, and enjoying the company of the child. Positive control meant that the group care worker used an appropriate and positive degree of verbal and nonverbal structuring in response to a child's behaviors. The remaining two pedagogical interventions, negative control and permissiveness, were negative pedagogical interventions. Negative control included the use of control in a negative manner such as being too harsh or punitive and using negative affect. Permissiveness included a lack of control, where the group care worker was compliant when a child acted out. For coding child behaviors, three variables were derived from SPAFF: contempt, anxiety/nervousness, and frustration/anger (Gottman 1995). Table 1 explains the variables and their origins. For each variable, several attributes were formulated (for examples see Table 1) to define the concept further. Both group care worker and child variables were given one score for each task. Scores ranged from 1 to 5 (1 = *not at all*, 3 = *somewhat*, 5 = *very much*). After watching the completed task (often more than once), the coder decided on a score for each group care worker intervention and child behavior variable separately. The amount and variety of observed attributes added to the scores on the variable.

In addition, the coder scored whether group care workers and children were off topic during the conflict-solving task. Off topic was scored if the group care worker and child talked about something other than the conflict topic for 10 s or more. It is important to

Table 1 Global ratings coding system for group care worker pedagogical interventions and child behavior, examples of attributes and origin

	Variable	Attributions (examples)	Origin
Group care worker pedagogical interventions	Warmth/support	Joy, compliments, reassurance, validation	SPAFF Code no. 1,2 + 4
	Positive control	Providing clarification, setting limits, establishing rules	De Schipper et al. (2009)
	Permissiveness	Not reprimanding, not setting limits, not establishing rules, being peers with the child	CIS
	Negative control	Harsh/punitive, negative affect, invalidation, lecturing, interrupting	Granic Coding Lab
Child Behavior	Contempt	Scorn/contempt, hostile humor, insults, physical cues	SPAFF Code no. 7
	Anxiety/ nervousness	Fear, tension, fidgeting, embarrassment/shame	SPAFF Code no. 8
	Frustration/anger	Irritation/annoyance, raising voice, visible impatience	SPAFF Code no. 9

SPAFF Specific Affect Coding System (Gottman 1995), *CIS* Caregiver Interaction Rating Scale (Arnett 1989)

know whether conflict discussions went off topic because talking about other, possibly less difficult, topics might influence the scores on the variables. Of the conflict discussions, 32 % were off topic for some time during the conflict task. Ten of the off topic situations were examined more closely. On average, the conflict discussions were off topic for 33 s or 14 % of the total duration of the task. Given the small amount of time that group care workers and children were off topic, the researchers decided to include the off topic videos in the analyses of the material.

Some minor adjustments were made to the coding system during the training period prior to the actual coding of material to enhance inter-observer agreement [For all attributes, see the manual for the Global Ratings Coding System (Bastiaanssen & O'Hara 2012)]. In addition to the variables described, two additional concepts were part of the total coding manual: engagement and group care worker contempt. These variables were not included in the analyses for this article. Engagement was a dyad variable where the group care worker child dyad shared a score. The current study was only interested in individual group care worker and child variables. Group care worker contempt was not included in the analyses because this variable is not a pedagogical intervention of group care workers, rather an affect variable.

Before coding the videotaped interactions, the coder underwent weekly training sessions led by the first author who codeveloped the global ratings system in which the coder and trainer were required to reach a minimum criterion of 80 % agreement and kappa of 0.60 (unweighted) or 0.75 (weighted[2]). After 7 weeks, this criterion was met. The coder coded all 95 observations within a period of 9 weeks. Every week, one or two files of the

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[2] Weighted kappa is useful when codes are ordered because it considers the distance between differing scores (Cohen 1968). When calculating the weighted kappa, three matrices are involved. In addition to the matrix of observed scores and the matrix of expected scores, based on chance agreement (used in unweighted Kappa calculations), the unweighted Kappa are also used in a weight matrix. Only variables that were used in the analyses for this article were included in calculating the Kappa.

videotaped interactions were randomly selected and compared to a "gold standard" file of the same session that was coded by the trainer. This was done for 15 % of all videotaped interactions. The coder was blind to which sessions were chosen to assess observer agreement. The final coder agreement using the gold standard method was 0.74 (unweighted kappa) and 0.87 (weighted kappa), which was good to excellent. During weekly sessions, codes that differed were discussed to prevent observer drift. Data from the coder were kept for the analyses. For one observation, both video cameras failed at the beginning of the observation; therefore, there was no footage of the first task and no scores on the variables. The remaining three tasks were captured on tape and were coded.

Strategy for Analysis

Means and standard deviations were calculated for all group care worker and child variables per task. A repeated measures ANOVA was conducted to calculate differences in mean scores on the variables between tasks. Associations between pedagogical interventions of group care workers and child behaviors were analyzed by combining group care worker and child variables in correlational analyses using Mplus 5.1 (Muthén and Muthén 1998–2006). The COMPLEX module implemented in Mplus 5.1 was used to account for nonindependence of observations due to cluster sampling (group care workers participating in observations). These analyses were conducted for the frustration and conflict-solving tasks because these tasks were developed to elicit specific behaviors of children in residential care and group care workers' responses to these behaviors. Analyses were conducted in two steps. In the first correlational analysis, variance in scores of all variables was tested. Variables that showed no significant variance in scores were left out during the second step of the analyses at which point the remaining variables were correlated.

Results

Content of Pedagogical Interventions and Child Behaviors

Means and standard deviations of all observation variables of group care workers and children were calculated per task. Results are displayed in Table 2. Overall, group care workers used positive pedagogical interventions during observations (i.e., warmth/support and positive control). Group care workers rarely used negative pedagogical interventions (permissiveness and negative control). Children sometimes showed anxiety or nervousness during tasks, were frustrated and angry, or showed contempt toward the group care workers. The repeated measures ANOVA revealed differences in mean scores on variables between tasks (see Table 2). In general, mean scores on all variables were higher for the frustration and conflict-solving tasks. Group care workers used more warmth and positive control during frustrating or conflict-solving tasks (Tasks 2 and 3) then during more positive tasks (Task 1: warm-up and Task 4: cooling-down). Group care workers used more negative control during the conflict-solving task. There were no significant differences for permissiveness. Regarding child behaviors, children showed more anxiety during the frustrating or conflict-solving tasks than during the positive tasks. Children also showed more anger and frustration during the conflict-solving task. There were no significant differences for contempt.

Table 2 Mean (M) and standard deviations (SD) of all variables per task

	Task 1 Warm-up		Task 2 Frustration		Task 3 Conflict-solving		Task 4 Cooling-down			
	M	SD	M	SD	M	SD	M	SD	F	df
Group care pedagogical interventions										
Warmth/support	3.13[c]	0.63	4.03[a]	0.98	3.54[b]	0.79	3.28[c]	0.85	37.43**	93
Positive control	2.90[c]	0.39	3.04[a]	0.44	3.13[a]	0.53	2.40[b]	0.69	42.79**	93
Permissiveness	1.03	0.18	1.03	0.23	1.09	0.35	1.06	0.29	1.58	93
Negative control	1.12[b]	0.32	1.06[b]	0.29	1.21[a]	0.46	1.13[ab]	0.34	4.60**	93
Child behavior										
Contempt	1.05	0.37	1.05	0.27	1.13	0.51	1.13	0.42	2.21	93
Anxiety/nervousness	1.22[c]	0.49	2.05[a]	0.87	1.46[b]	0.70	1.02[d]	0.15	58.80**	93
Frustration/anger	1.13[bc]	0.49	1.15[b]	0.55	1.28[a]	0.65	1.05[c]	0.27	6.32**	93

Superscripts indicate significant differences in means between tasks

* $p \leq .05$; ** $p \leq .01$

Associations Between Pedagogical Interventions and Child Behaviors

To connect pedagogical interventions of group care workers to child behaviors, correlations were calculated for both the frustration and the conflict-solving tasks in two steps. In the first step, the analysis contained all group care worker observation variables (warmth/support, positive control, permissiveness, and negative control) and all child observation variables (child contempt, anxiety/nervousness, frustration/anger). Within this first step, results for the frustration task showed no significant variance for the group care worker variables of permissiveness and negative control and child variable of contempt. Therefore, these variables were removed from the next step of the analysis. The first step in the analysis for the conflict-solving task showed significant variances for all group care worker and child variables; therefore, all variables were included in the analysis for the conflict-solving task.

Results from the correlational analyses for both tasks are displayed in Tables 3 and 4, respectively. For the frustration task, a significant and large correlation was found between frustration/anger and positive control ($r = .51$). The more frustrated and angry a child was during the frustration task, the more the group care worker used positive control. The same relation, though somewhat smaller, was found during the conflict-solving task ($r = .29$). Analysis of the conflict-solving task also revealed relations between all child variables and the group care worker variable of permissiveness. Permissiveness had a large positive relation with contempt ($r = .72$), and a medium association with frustration/anger ($r = .44$). Thus, the more frustrated, angry, and contemptuous children behaved during the conflict-solving task, the more permissive the group care workers became. The latter was examined more closely because permissiveness seldom occurred. Permissive interventions were seen in only six observations. In almost all of these six cases, children showed challenging behaviors (contempt, anger, or frustration). Additionally, permissiveness had a small negative association with anxiety/nervousness ($r = -.16$). This finding indicates that when children showed more anxious and nervous behaviors during the conflict-solving task, group care workers were less permissive. In addition to relations between group care worker and child variables, were relations within group care worker and child variables during the conflict-solving task.

Table 3 Correlations among group care worker pedagogical interventions and child behavior during the frustration task

	1	2	3
Group care worker pedagogical interventions			
1. Warmth/support			
2. Positive control	0.15		
Child behavior			
3. Anxiety/nervousness	0.21	0.11	
4. Frustration/anger	0.03	0.51**	0.05

$* p \le .05; ** p \le .01$

Table 4 Correlations among group care worker pedagogical interventions and child behavior during the conflict-solving task

	1	2	3	4	5	6
Group care worker pedagogical interventions						
1. Warmth/support						
2. Positive control	0.19*					
3. Permissiveness	−0.13	0.06				
4. Negative control	−0.30*	−0.07	0.16			
Child behavior						
5. Contempt	−0.04	0.26	0.72**	0.16		
6. Anxiety/nervousness	0.01	−0.04	−0.16**[a]	0.10	−0.16**	
7. Frustration/anger	−0.07	0.29*	0.44*[b]	0.14	0.45**	−0.27**

$* p \le .05; ** p \le .01$

[a,b] The coefficient of −0.16 was significant at the 1 % level, whereas the coefficient of 0.44 was only significant at the 5 % level. This paradoxical result occurred because the standard error of the latter estimate was larger than the former

Warmth/support showed a negative, medium relation with negative control ($r = −.30$), and a positive, but smaller, relation with positive control ($r = .19$). Group care workers who used more warm and supportive interventions during the conflict-solving task, tended to use less negative control and more positive control. Within the child variables, contempt had a small negative relation with anxiety/nervousness ($r = −.16$), and a medium positive relation with frustration/anger ($r = .45$). Children who showed more contempt during the conflict-solving task were less nervous and anxious, but showed more frustration and anger. In addition, anxiety/nervousness and frustration/anger were negatively related ($r = −.27$); children who were anxious showed less frustration.

Discussion

The first aim of the current study was to observe the pedagogical interventions of group care workers within residential youth care. Group care workers use pedagogical interventions while interacting with children; the proportion in which group care workers put these interventions into practice can be measured reliably. The hypothesis that group care workers mainly use positive pedagogical interventions was confirmed. In the current study, group care workers were warm and supportive during observations and used positive

controlling interventions with children. These findings are in line with those of previous studies that have observed group care workers interacting with children on the daily living unit (Crosland et al. 2008; Van den Berg 2000). Although the design of those studies differed from the current study, group care workers in these studies also mainly showed positive interactions with children during observations. Additionally, warm and positive controlling interventions are considered important for the positive development of children (Cameron and Maginn 2011; Knorth et al. 2010; Scholte and Van der Ploeg 2000). In addition to these results, it should be noted that the levels of warmth and positive controlling interventions that group care workers displayed during observations were not extremely high. This means that group care workers could be warmer when interacting with children.

Although rarely, group care workers did use negative interventions (e.g., when they invalidated feelings or opinions of children or were permissive by avoiding conflict with children when they engaged in challenging behaviors). Indulgent parenting styles are known to have a negative impact on the behaviors of children (Cameron and Maginn 2008). Therefore, group care workers should try to avoid negative pedagogical interventions as much as possible. Of course, this suggestion applies for all children, but is especially important for children in residential care because of their social, emotional, and behavioral needs (Crosland et al. 2008).

The second aim of this study was to investigate the relations between group care worker interventions and children's behaviors. The hypotheses were partly confirmed. When children were frustrated during observations, group care workers used positive controlling interventions. In a previous study with a different sample, similar results were found when group care workers filled out questionnaires on child behaviors and their own interventions (Bastiaanssen et al. 2012). In contrast with the questionnaire study, anxious behaviors of children were not related to warm and supportive interventions of group care workers. This finding might be due to internalizing behavior problems such as anxiety or nervousness being less noticed by group care workers during observations compared to the externalizing nature of contempt, anger, or frustration. It could also be that group care workers do not listen enough to children to detect internalizing problems. When children behaved contemptuous, angry, or frustrated during the conflict situations, group care workers were permissive, meaning that they avoided conflict by not placing value on obedience, not setting limits, and not establishing rules. Permissiveness only seldom occurred, but when it did, challenging behaviors were also apparent in almost all cases. This might explain the association; however, considering the low number of permissive interventions, these results should be interpreted cautiously.

Next to associations between group care worker interventions and child behaviors, were associations between group care worker interventions. Group care workers who used more warm and supportive interventions during the conflict-solving task, tended to use less negative control and more positive control. This finding fits with the discussion provided in the introduction that a combination of warm and controlling parental dimensions are considered important in healthy child upbringing (Baumrind 1971; Maccoby and Martin 1983).

The observation protocol elicited behaviors of children and response to group care workers systematically. This makes comparison across children possible. It is not awkward for group care workers and children to talk separately with each other outside the group; however, group care workers usually intervene with children in the presence of other children and group care workers. This could explain the fact that, during observations, there was little variance in negative pedagogical interventions (e.g., negative control) or

child behaviors (e.g., contempt). Negative interactions could occur more often in the daily residential unit, where group care workers may be tested more when working with a group of children who display challenging behaviors. Studies that have observed group care workers and children in their natural environments have found similar results with mainly positive interactions between group care workers and children (Crosland et al. 2008; Van den Berg 2000). Additionally, the group care workers were highly educated as most staff had professional bachelor's degrees. The Netherlands is known to have a high proportion of qualified staff working in residential youth care compared to other countries within the European Union (Crimmens 1998). This high amount of professional staff can also explain the low occurrence of negative pedagogical interventions of group care workers in this study, as more education generally contributes to better quality of care. Although there was a low occurrence of negative group care worker and child behaviors, behaviors differed between the different tasks as constituted in the observation protocol. Children showed more anxious and frustrating behaviors during difficult tasks than during positive tasks. Further, group care workers used more pedagogical interventions during difficult tasks as a way to guide the child. This finding suggests that, to a certain extent, the different tasks in the observation protocol elicited different behaviors of children and group care workers.

This study is one of the first to observe pedagogical interventions of group care workers and child behaviors in residential care. Although the study contributes to knowledge on the content of group care work, some limitations need to be addressed. The first limitation concerns the fact that the group care workers and children were aware of the observations. This fact introduces a disadvantage that participants may have modified their behaviors because they knew they were being taped with a video camera and watched by researchers. It might be that group care workers and children used more positive interactions because they knew that the researchers would watch the tapes. Still, observational studies can provide another valuable source of data on group care worker interventions and children's problem behaviors next to questionnaire studies. Secondly, the current study was not able to draw causal inferences concerning the associations between child behaviors and group care worker interventions. The researchers hypothesized that group care workers would attune their interventions to the behaviors of the children. There were indeed associations between child behaviors and group care worker interventions; however, nothing can be said about the direction of theses associations. This limitation is relevant because the global coding procedure in which group care worker and child variables were coded globally and separately from each other. Real time, moment-to-moment coding could have made it possible to track interaction patterns between group care workers and children and provide the possibility of using more distinguished methodology to investigate the direction of associations between variables (Granic 2005). Third, the results were based on data obtained from a sample of children and group care workers at two residential youth care institutions. Using more institutions throughout the Netherlands would be desirable to obtain information concerning the generalizability of the current results. However, collecting observational data on different group care worker-child dyads is a complicated and time-consuming operation.

Despite limitations, this study offers implications for future research and practice. Observational studies can provide objective data on the content of care that group care workers provide. Content of care should be part of studies on the quality and effectiveness of residential youth care. This knowledge could improve the quality of care and outcomes for children. Concerning practice, pedagogical interventions should be part of education, training, and supervision of group care workers. Despite the fact that group care workers usually have knowledge on adequate pedagogical skills (i.e., warmth and control), working with children

who display severe behavior problems is challenging. This is especially the case during busy hours and crisis situations where group care workers might react negatively to maintain control or the opposite, to avoid confrontation. Working toward positive behaviors with young people takes persistence and courage to address unacceptable behaviors consistently, sensitively, and authoritatively (Smith et al. 2013). Supervision and coaching-on-the-job can enhance group care workers' use of appropriate interventions. Studies on the effects of behavioral management training for residential staff have reported more positive interactions between group care workers and children (Crosland et al. 2008; Duppong Hurley et al. 2006). Group care workers could also overlook important signals of children. This is often the case with internalizing behaviors such as anxiety or nervousness occurs and warm and supportive interventions are needed to provide the necessary safety. In the current study, video cameras were used for research purposes; however, video footage can also be a tool for coaching group care workers. In the Netherlands, some residential institutions use video cameras within the daily living unit for supervision purposes (De Lange 2011; Embregts 2002). Videotaped interactions between group care workers and children are viewed with individual or teams of group care workers to discuss appropriate responses. This method can increase the quality of group care workers' interventions (Embregts 2002). Residential institutions should consider video-feedback as a tool for supervision and training of group care workers.

This study provided the first step in observing pedagogical interventions of group care workers and associations with child behaviors within residential youth care. Group care workers mainly used warm and positive controlling interventions when interacting with children. Frustration and anger of children was associated with positive controlling interventions as well as with permissiveness of group care workers. The current study outlined the importance of group care workers concerning the influence of their pedagogical interventions on the quality of residential youth care. Residential childcare institutions should support group care workers in this important, but complex, profession.

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