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### The downside up? A study of factors associated with a successful course of treatment for adolescents in secure residential care

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## CHAPTER 5

# UNDER ONE ROOF: A REVIEW AND SELECTIVE META-ANALYSIS ON THE OUTCOMES OF RESIDENTIAL CHILD AND YOUTH CARE

*To know that something works is good; to know how it works is better*

### Abstract

*Residential child and youth care is a radical intervention that in many countries is perceived as a “last resort” solution that should be avoided if at all possible – not least because of scepticism about its effectiveness. Against this, there is the view that a residential placement can contribute to the positive development of some youth with serious behavioral and/or emotional disturbances. In this context, it is remarkable that there are so few reviews and meta-analyses of outcomes of residential child and youth care services. In this article, we report on research into outcome studies published in the period 1990-2005. The application of strict inclusion and selection criteria yielded 27 pre- and quasi-experimental studies (PE and QE) covering the development and outcomes for 2345 children and young persons. Since there is variation in the outcome measures, we give an integral overview of all the individual ES's in the studies. However, for seven studies with a PE-design it was possible to calculate an overall ES – the weighted mean effect sizes ranged from .45 (internalized problem behavior) to .60 (externalizing problem behavior; behavior problems in general). QE-studies prove that residential programs applying behavior-therapeutic methods and focusing on family involvement show the most promising short term outcomes. There is very little evidence on long term outcomes of residential care. It also strikes us that many studies lack a specific description of the residential intervention program.*

This chapter is (partly) based on:

- Harder, A. T., & Knorth, E. J. (2009). 2.345 Jeugdigen (z)onder dak: Een meta-analyse naar de uitkomsten van residentiële jeugdzorg [2.345 young people with(out) a roof: A meta-analysis of the outcomes of residential child and youth care]. *Kind en Adolescent, 30*(4), 210-231 [ISED nationale artikelprijs 2009/ ISED national article prize 2009].
- Knorth, E. J., Harder, A. T., Zandberg, T., & Kendrick, A. J. (2008). Under one roof: A review and selective meta-analysis on the outcomes of residential child and youth care. *Children and Youth Services Review, 30*(2), 123-140.
- Harder, A. T., Knorth, E. J., & Zandberg, T. (2006). *Residentiële jeugdzorg in beeld: Een overzichtsstudie naar de doelgroep, werkwijzen en uitkomsten [Residential child and youth care in the picture: A review study of its target group, methods and outcomes]*. Amsterdam: SWP Publishers.

## 5.1 Introduction

During the preparation of a publication on residential child and youth care, one of the authors came across the following, remarkable passage:

- “There is *indisputable evidence* that institutional (i.e. residential) care has *negative consequences* for both individual children and for society at large”.
- “It is alleged that the UN Convention on the Rights of the Child includes an obligation of ‘resorting to institutional care only *as a last resort* and as a temporary response” (Stockholm Declaration on Children and Residential Care (May 2003), cited in Anglin & Knorth, 2004, p. 141; italics authors)

These two statements contrast strongly with statements that were adopted during the International FICE Conference in Malmö (1990). From this resolution, later known as the Malmö Declaration, we also quote two passages:

- “From mere custodial care in past generations, community [residential] care has developed into a *really qualified and efficient aid* to education in recent years”.
- Persons holding responsible positions in society and government are urged to do their utmost “to consider ‘children’s homes’ and comparable provisions *not as a last resort* for children needing care but as an important available intervention to be used at an appropriate time in the development of those children for whom it is desirable” (ibidem, p. 142; italics authors).

In considering the Stockholm and Malmö declarations, Anglin and Knorth (2004) conclude that: “... whereas the Stockholm Declaration views residential care as intrinsically negative, and only to be used as ‘a last resort’, the Malmö Declaration holds that residential care can be a positive and even preferred choice for many young people at appropriate times in their development” (Anglin & Knorth, 2004, p. 142). Consideration of a range of literature which has addressed these tensions in the debates about residential care (Anglin, 2002; Berridge, 2002; Crimmens & Milligan, 2005; Gabriel & Winkler, 2003; Jones & Lansdverk, 2006; McCurdy & McIntyre, 2004; Underwood, Barretti, Storms, & Safonte-Strumolo, 2004; Whittaker, 2001), leaves us with the clear impression that, in western countries at least, there has been a shift away from the “last resort” vision which has set the tone for child care policy for the last two to three decades (cf. Hellinckx, 2002). Whittaker and Maluccio (2002) argue strongly that we need to leave behind us the fixation on the *avoidance of placement* – a consequence of the last resort concept – and to establish, on the basis of research evidence, in which situations a temporary stay of a youth in some form of residential care can be a meaningful and effective intervention. Indeed, the fact remains that many youth – and some sources report an increasing number of youth (cf. Knorth, 2005; McCurdy & McIntyre, 2004) – make use of residential facilities.

In line with this perspective we have asked ourselves what can be said, on the basis of recent research literature, about the outcomes of residential child and youth care facilities. Is it “indisputable” that youth mainly experience negative consequences of a residential stay and get worse? Or do youth (also) make progress in their psychosocial functioning and do problems, with which they and their caregivers have to deal, diminish?

These questions are more topical than ever before. The legitimacy of child and youth care services is more and more often judged by the public and the government on the basis of the outcomes evidenced for children and their families (Knorth, 2005; Kendrick, 2007).

### 5.1.1 Outcome studies

A well-tried method to gain more detailed insight into the effectiveness of an intervention is to carry out a review: whereby the results of several outcome studies that are methodologically sound are compared and summarized. In 1991, for example, Curry summarized the results of several studies on the subject of residential care from the 70’s and 80’s and concluded, among other things, that: “Most youngsters appear to improve within (residential) treatment. Some do not or else appear to get worse. Subject variables, including at least the severity or type of dysfunction and the reactive or process nature of its onset, appear to set limits on what can be achieved with such treatment. Adjustment within a program does not predict adjustment at a subsequent follow-up period, but degree of support and continuity in significant relationships does seem to predict better adjustment at follow-up” (Curry, 1991, p. 352). The implications of this, according to Curry, include: (1) the need for extensive *aftercare treatment*; (2) the need to work with the child and family *for extensive periods of time*, only some of it within residential treatment; and (3) the need to include in treatment programs as many opportunities as possible *for learning* that can be generalized to the non-residential environment.

Two more recently published international review studies (Frensch & Cameron, 2002; Lyman & Campbell, 1996) came to similar conclusion. Lyman and Campbell (1996) carried out a selective review on the effectiveness of residential and inpatient treatment. Frensch and Cameron (2002) focused on 15 effectiveness studies about child and youth care in residential group homes and residential treatment centers. Both reviews showed that the longer the follow-up period, the less convincing the findings of effectiveness. In accordance with Curry (1991), they highlight the importance of aftercare and working with the child and his or her family in terms of improving the effectiveness of residential care.

Furthermore, a thorough review in the Netherlands (Van Gageldonk & Bartels, 1990) concluded that two approaches are effective in working with youth having

severe psychosocial and behavior problems, namely: 1) working in programs within a very structured living environment, and 2) residential care aimed at training social skills and increasing social competence in the course of a gradual learning route.

A recent update by Boendermaker and Van den Berg (2005) shows us that an intensive behavioral modification approach, together with family-focused interventions, is effective for youth with severe behavioral disorders and internalizing problems. With a combination of the following intervention characteristics, a reduction of problem behavior might be expected:

- risk assessment;
- (if relevant) medication;
- (cognitive) behavioral therapeutic programs;
- individual support;
- (with delinquent youths) empathy training;
- family therapy and training for parents;
- adapted (special) education;
- assistance with looking for work;
- aftercare.

### 5.1.2 *Meta-analyses*

A further approach to understanding the results of outcome studies is the *meta-analysis* (Lipsey & Wilson, 2001). In a meta-analysis, quantitative results from different studies can be combined. In brief, this method uses statistics from original studies that indicate change in behavior and experiences of clients (for example *d*-scores) and transforms them into standardized effect sizes. Under certain circumstances, these effect size (ES) scores can be used as input for new calculations, with the result that statements can be made about much larger samples than in the original studies.

In our search for meta-analyses in the last 15 years, we have identified two particularly relevant publications:

- a review of meta-analyses in the field of institutional care for youth with delinquent behavior by Grietens (2002); and
- a meta-analysis in the field of residential care for children and youth with behavior and emotional problems by Scherrer (1994).

In the review by Grietens (2002), the effectiveness of residential treatment was determined on the basis of effect sizes from five previously conducted meta-analyses;

involving more than 300 studies in total.<sup>1</sup> Residential treatment of delinquent youth appears to generate an average reduction of recidivism of about 9%, and the conclusion is that delinquent behavior is more difficult to treat in comparison to other problems.

Scherrer (1994) carried out his meta-analysis on the basis of 42 studies<sup>2</sup> with a (quasi) experimental design. In these studies, no less than 12 different sorts of outcome-measure appeared to be applied. His most important findings are the following:

- Youth in a residential *treatment* program show approximately 14% more improvement in emotional problems compared to youth in control or comparison groups.
- Intervention components such as behavioral modification, (psychodynamic) milieu therapy and family treatment have the best potential for achieving positive outcomes for youth.
- Studies concerning short term effects show more positive results than studies measuring long term effects. Positive outcomes in the long run (one year after discharge) are mainly achieved through cognitive-behaviorally oriented programs.

Following on, then, from these previous reviews and meta-analyses, we have carried out a review study focusing on literature over the period 1990 – 2005. As part of this review, we have carried out a meta-analysis and we will now focus on the results of this meta-analysis.

## 5.2 Method

An extensive literature search of studies, in which reports are made of *empirical research* on outcomes of residential care for children and youth (0-23 years) in the past 15 years (1990 through to 2005), provides in the first instance a set of 138 studies.<sup>3</sup> To be included in the meta-analysis, the studies needed to meet a number of criteria (see Table 5.1).

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<sup>1</sup> The studies in the meta-analysis form a selection of studies in the five meta-analyses. They concern the effectiveness of residential treatment for juvenile offenders. In all of the five meta-analyses recidivism is used as an outcome measure.

<sup>2</sup> The 42 studies formed only 4% of the 1030 originally included studies.

<sup>3</sup> The literature has been collected by searching a number of national (Dutch) and international journals and databases by means of Dutch and English search terms. In addition, the search has been extended to include authors and reference lists from identified studies.

Table 5.1  
Inclusion criteria

Category	Criterion
Nature of the intervention	A residential intervention is the focus in the study.
Research respondents	Clients using residential care: children and youth from 0 - 23 years old and/ or their parents.
Key variables	Key variables can be the (problem) behavior of the youth, realization of goals, satisfaction about the treatment, recidivism and the functioning of the family of the youth.
Research methods	The studies at least have a pre-experimental design which contains a pre-post measurement.
Cultural and linguistic range	The studies have been written in Dutch, English or German and might have been conducted in any country.
Time frame	The research has been carried out from 1990 until mid 2005.
Publication type	Scientific articles, books, dissertations and reports will be included.

Further study of the selected 138 publications led us to remove 28 studies (20%). In half of these cases (14), the research does take place within a residential setting, but the residential treatment program itself (or an important component of that program) is not the focus. For example, studies focused on pharmacological treatment or interventions aimed at a physical disorder (obesity and HIV/AIDS) were removed. Here we also find studies in which the youth have received different forms of treatment successively, of which residential care is only one part. In the other fourteen cases, the reports concern part of a sample on which outcome-data had already been presented in an earlier publication. We have selected those studies in which the “original” sample appears and/or in which the most relevant data can be found relating to our study-question. There thus remain 110 studies.

The next step was selecting the studies that can be included in the statistical meta-analysis. For that purpose, 1) the statistical design of the studies and 2) the comparableness of the used outcome measures have been taken into account.

In accordance with a classification of Van Gageldonk and Bartels (1990) we distinguish four types of outcome studies:

- *Non-experimental (NE)* - There is only one measurement of outcomes, usually after the intervention. These outcomes are often related to other variables, such as client or problem characteristics.
- *Pre-experimental (PE)* - There are at least at two measurements ( $T_1$  and  $T_2$ ) performed within a sample, before and after an intervention, whereby it is checked whether a change, for example in behavior, occurs between  $T_1$  and  $T_2$ .
- *Quasi-experimental (QE)* - Here, a minimum of two samples are studied at  $T_1$  and  $T_2$ , where groups are offered a different intervention. There is a comparison of samples on relevant variables.

- *Experimental (E)* - This type of research distinguishes itself from the previous type (QE) because the attribution of subjects to intervention and control groups is randomized.

Table 5.2 shows how the 110 studies are classified. A large proportion (42%) is *non-experimental* in design. A slightly smaller proportion (39%) is *pre-experimental*. An even smaller proportion (18%) can be considered as *quasi-experimental*. We did not come across any study that allowed for the most powerful inferences, the *experimental design*. Table 5.2 further shows the number of PE-studies and QE-studies which could be included in the meta-analysis; slightly less than half ( $n = 27$ ; see right column Table 5.2).

Table 5.2  
*Number of outcome studies by design and for use in meta-analysis*

<i>Design</i>	<i>K</i>	<i>%</i>	<i>K for use in meta-analysis</i>
Non-Experimental	46	42	n.a.
Pre-Experimental	43	39	10
Quasi-Experimental	21	19	17
Experimental	0	0	n.a.
Total	110	100	27

*Note.* *K* = number of studies.

The reasons why PE-studies have been eliminated are that:

- different samples were used at  $T_1$  and  $T_2$ ;
- different instruments were used at  $T_1$  and  $T_2$ ;
- unreliable or invalid instruments were used;
- not all data from the published study, necessary for inclusion in the meta-analysis, could be extracted and/or contact with the researcher did not yield the requested additional information.

QE-studies have been eliminated because of the lack of research data and/or missing information.

In Table 5.3, it can be seen that most of the research suitable for the meta-analysis has taken place in the US (56%) followed by European studies (33%). We must stress again here that we have restricted ourselves to the English literature, complemented with publications written in Dutch or German. Therefore, our meta-analysis has a somewhat selective character.



Table 5.3  
 Characteristics of outcome studies ( $N = 27$ )

Country/continent	$K$	%
United States	15	56
Europe	9	33
Canada	2	7
Australia	1	4
Total	27	100

Note.  $K$  = number of studies.

Following the selection process, we analyzed the outcome measures, instruments and sources of information used in the studies. Based on the available, quantitative data from the 27 studies, effect sizes have been calculated for different outcome measures. For several studies it was possible to calculate more than one effect size on different outcome measures. For the calculation of effect sizes we used Lipsey and Wilson's table (2001, p. 72), which represents effect size, standard error and inverse variance weight formulas for different effect size types. The analyses of PE- and QE-studies have taken place separately, because the effect sizes based on different designs are not comparable in our meta-analysis.<sup>4</sup> After calculating the effect sizes, subgroups of studies have been made based on the type of outcome measure. Studies with a comparable outcome measure were included in one subgroup.

It is customary to calculate an *average standardized effect size* on the basis of ES-values from all the included studies (Lipsey & Wilson, 2001). Since there is variation in the outcome measures, we give an integral overview of all the *individual ES's* and we therefore give a content-based categorization of outcomes (cf. Grietens, 2002). However, for seven studies with a PE-design it was possible to calculate an *overall ES* for general, internalizing and externalizing problem behavior. In two of the studies a mean effect size for problem behavior had to be calculated as there was more than one effect size based on the same outcome measure due to different sources of information, namely youth, parents and child care workers.

For every effect size the inverse variance weight is calculated (in formula:  $1/SE^2$ ). This weighting is based on the standard error (SE) and gives an indication of the accuracy of the effect size. After that, the weighted mean effect sizes have been calculated for general, externalizing and internalizing problem behavior. In all seven studies, internalizing problems have been measured; in five studies externalizing problems were measured; and in five (partly the same) studies measurements on

<sup>4</sup> An effect size based on PE-research relies on the difference between two measurements in time within one sample: before and after treatment. A QE-based effect size relies on the difference between two or more samples. Ideally, one of the samples is not exposed to an intervention, causing this group to function as a control group. In our meta-analysis all samples in QE studies are exposed to a particular intervention.

general problem behavior were presented. For homogeneity analysis of the effect size distribution, a homogeneity test is carried out. For the calculation of homogeneity (Q) the formula  $\Sigma(W \times ES^2) - [\Sigma(W \times ES)]^2 / \Sigma W$  is being used, where ES is the individual effect size and W the individual weight for ES. Q is distributed as a chi-square with  $k-1$  degrees of freedom where k is the number of effect sizes (Wilson, 2000).

### 5.3 Results

The age of the youth in the study samples ranged in almost all cases from 12 years old up to and including 18 years old. The problems of the youth consist, as mentioned in the studies, predominantly of externalizing and internalizing (behavioral) problems. The outcomes that we present mainly involve the short term, that is: the period between the termination of the stay in care and three to four months later. In reporting the results we differentiate between PE-studies and QE-studies.

#### 5.3.1 PE-studies

The results of the statistical meta-analysis which includes seven PE-studies are presented in Table 5.4. The included studies are based on a total of 540 youth. Different types of residential care are the focus in the studies.

Table 5.4  
*Weighted mean effect sizes of PE-studies*

<i>Outcome measure</i>	<i>K</i>	<i>N Total</i>	<i>ES</i>	<i>95% CI</i>	<i>Q</i>
General problem behavior	5 <sup>a</sup>	434	+0.60	.50<d<.70	132.1
Internalizing problem behavior	7 <sup>b</sup>	540	+0.45	.36<d<.54	64.8
Externalizing problem behavior	5 <sup>a</sup>	434	+0.60	.50<d<.70	128.8

*Note.* K = number of studies. ES = Effect Size. CI = Confidence Interval. Q = Homogeneity.

<sup>a</sup>Included studies: Boendermaker (1998); Gavidia-Payne et al. (2003); Jansen & Oud (1993); Leichtman et al. (2001); Van der Ploeg & Scholte (2003). <sup>b</sup>Included studies: Five above mentioned studies plus Enns, Cox, & Inayatulla (2003); Hintikka et al. (2003).

The weighted mean effect sizes on general, internalizing and externalizing problem behavior are +.60, +.45, and +.60 respectively. This means that children in residential care on average show a medium to a rather large degree of improvement concerning general and externalizing problem behavior. The effect size on internalizing problem behavior is smaller than on general and externalizing problems. As appears from the homogeneity analysis the weighted mean effect sizes of general problem behavior (Q(4) = 132.1,  $p < .05$ ), internalizing problem behavior (Q(6) = 64.8,  $p < .05$ ) and externalizing problem behavior (Q(4) = 128.8,  $p < .05$ ) are distributed

heterogeneously. This means that the variability between the effect sizes is larger than may be expected on the basis of the sampling error.

In Table 5.5 (see Appendix 5.1), the results of all the studies with a pre-experimental design are incorporated. Inspection of the Table produces the following findings. When we look at the five studies in which reduction of *problem behavior* of youth is a central evaluation criterion, it is striking that the CBCL or its youth version, the YSR, is nearly always applied. The central (bold written) ES-scores, as filled in by parents (CBCL) or youth (YSR), are all positive and lie between the values .71 and 1.29. This is considered as a medium to large effect (Cohen, 1988). So the opinion of parents and youth about the change in problem behavior is positive in all cases (study 1 and 3 through 7). In contrast, group care workers see more of a slight decline than an improvement (study 1 and 2).

In the central indices for *psychosocial functioning* of youth (the studies 8 through 11) we see comparable results: here also the ES-scores are positive, although the effect is small on one occasion (study 11; introversion in behaviorally-disturbed youth).

It is interesting that in all the studies in which a distinction is made between problems with an internalizing or externalizing character, the highest ES-value is consistently found for the externalizing problems. The statistical meta-analysis also shows that the mean weighted effect size for externalizing problems is larger than the effect size for internalizing problems. It appears that externalizing problem behavior improves more than internalizing problem behavior. This *could* be an indication for the fact that youth with externalizing problems profit more from residential care than youth with internalizing behavior problems.

Noteworthy is the result in the study of Hintikka et al. (study 7); here attention is given to the situation of the family of the admitted youth. The research shows that the functioning of the family of youth that have symptoms of depression has improved, whereas with the family of youth with behavioral disorders the opposite is observed. It concerns, however, a study with a relatively small sample.

The predominantly positive changes in the functioning of youth we see here, cannot be related in a robust way by these PE-effect-studies to the residential care program. For pre-experimental studies we cannot be sure that the intervention alone accounts for the observed changes; factors such as individual history, maturation effects and statistical regression to the mean can threaten the internal validity of the results. In quasi-experimental studies this is different: insight does arise on the impact that a residential program of a certain type has *in comparison with* treatment conditions – residential or not – of another type.

### 5.3.2 QE-studies

Table 5.6 (see Appendix 5.2) shows the results of all studies with a quasi-experimental design. Inspection of the Table makes the following evident. Here we also see that the

CBCL or the YSR are frequently used (in six of the eight studies) as a measurement-instrument of *problem behavior*. The effect sizes are smaller than with the PE-studies. This indicates that the difference in results between the interventions that are compared is often small to medium. Only in one study – in which an empathy training program is the focus – there are large differences between the two treatment conditions, but here the results are based on small samples.

Residential care appears to give better outcomes when a strong behavioristic orientation (study 7<sup>5</sup>, see also study 11) or a strong familial orientation is present (study 3). It seems that residential care also gives better outcomes than treatment at home (study 4)<sup>6</sup>. Residential care seems, however, to give poorer results when compared with multi-dimensional therapeutic foster care (MTFC) (study 2, see also study 9) or day-treatment (study 5). In the last case, the comparison is questionable because the problems of the residential admitted youth are worse than those of the youth in day treatment. A comparison of residential care with multisystemic treatment (MST) (study 1) gives a mixed picture.

Most of the youth in the samples are between 12 and 18 years old. There are no clear differences in results for youth with a lower age (studies 3 - 5) compared to those with a higher age.

When we look at the research that focuses on the reduction of *delinquent behavior* of admitted youths then it is noticeable that the ES-scores are – with the exception of MTFC – rather small. This indicates that there are small differences in results for delinquent behavior between the interventions. Here it must be noted that the delinquent behavior in the studies is often measured a relatively long period after discharge. All of the youth in these samples are between 12 and 18 years old.

The studies within a residential context in which the effect of an intervention, aimed at reinforcing a *specific skill* is evaluated (studies 13 through 17), give a clearly different view. The effect sizes for most studies, with the exception of study 14 with regard to social problems and study 15 with a focus on treatment in a juvenile correctional treatment center, are positive and medium to large. The training was aimed at:

- social-cognitive skills;
- social skills;
- empathy skills; and
- cognitive skills.

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<sup>5</sup> Results in this study are based on comparisons of youth in residential care with youth who prematurely dropped out of treatment.

<sup>6</sup> In the study of Mattejat et al. (2001) the youths are randomly assigned to the treatment conditions.

Like the studies on problem behavior most of these studies contain samples of children between 12 and 18 years old. The results for youth with a lower age (study 14) show no clear differences compared to those with a higher age (i.e. the rest of the studies).

#### 5.4 Conclusion

The main conclusion that can be made from our meta-analysis is that children and youth, after a period of residential care – on average – improve in their psychosocial functioning. The “indisputable evidence” that this form of care has (mainly) negative consequences for individual children and for the society at large, as stated in the Stockholm Declaration, has not been supported. The effect sizes that we found are in most cases positive and can often be characterized as ‘medium’, sometimes as ‘large’. The weighted mean effect sizes for children in residential care concerning general, internalizing and externalizing problem behavior are +.60, +.45, and +.60 respectively. Striking findings in this context are that:

- youth with externalizing behavioral problems seem to make more progress than youth with internalizing problems;
- the staff of a residential program seems to be more critical in assessing behavioral progress than youth themselves and their parents;
- behavior-modification components and family-focused components in the treatment interventions seem to achieve positive results;
- residential care seems to achieve better results than treatment at home with the same (very) problematic group;
- specific training, aimed at social-cognitive and social-emotional skills of youths, can generate a significant strengthening of a treatment-effect.

In the QE-studies presented, only one type of intervention stood out as seeming to be able to accomplish more behavioral progress than residential care, namely multi-dimensional therapeutic foster care (MTFC). In the two studies concerned, progress was made by the youth in both treatment conditions – stay in a therapeutic foster home and stay in a residential group – but more in the first condition than in the second<sup>7</sup>. The characteristics of this treatment modality – small-scale; continuity and professionalism of the foster parents; complementary individual therapy and family therapy for respectively the child and the biological family; cooperation with school, with the justice department and with the healthcare department; coordination of services through case-management (cf. Chamberlain & Smith, 2005) – could and

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<sup>7</sup> In the study of Chamberlain and Reid (1998) the ES for treatment in the residential group and in the MTFC is respectively +.30 and +1.13. In the study of Leve and Chamberlain (2005) the ES for treatment in the residential group and in the MTFC is respectively +.87 and +1.14.

should, in our opinion, serve as a source of inspiration when asking the question about further improvements in the quality and effectiveness of residential care (cf. also Knorth, Noom, Tausendfreund, & Kendrick, 2007; McCurdy & McIntyre, 2004; Underwood et al., 2004).

There are limitations to our analysis. It has been possible to calculate weighted mean effect sizes for only a small proportion of PE-studies. As a consequence, the external validity of this part of our meta-analysis needs to be evaluated through continued research. For the QE-studies, it was not possible to calculate mean effect sizes due to (major) differences in treatment conditions.

Furthermore, mainly short term outcomes were examined. The meta-analysis of Scherrer (1994) shows that outcomes in the long term seem less favorable. On the other hand, we point to a study of Fernández del Valle and Casas (2002), in which the long term outcomes of residentially treated young people are not in the least unfavorable. We see similar findings in other, older studies, such as that of Corbillon (see Corbillon, Assailly, & Duyme, 1991).

Moreover, the role of potential predictors on outcomes merits more attention in future research. Due to the limited and diverse information in the primary studies it was only possible to look at the children's age and – roughly – at the type of residential intervention as moderators. Other variables that could account for outcomes of residential care are for example the specific nature and severity of the problems that children (and their families) demonstrate.

The studies in our review pay almost no attention to the question of the impact that a residential intervention has on the *family situation* of the admitted youth. Considering the fact that residential care is being more and more regarded as a form of family-support (cf. Braziel, 1996; Willumsen & Severinsson, 2005) and that most of the youth return to the family situation after their stay (see for example Millham, Bullock, Hosie, & Haak, 1986), this must be considered as a “missing link” in the research under review.

From a scientific and social viewpoint it is of great importance that we gain more insight into the effectiveness of residential child and youth care. A meta-analysis as presented here can provide a contribution to that; but the contribution is modest. To know *that* something works is good; to know *how* it works is better.

In this context it is noticeable that in a large majority (83%) of the 110 studies we analyzed, the residential care program that is subject of research is merely described in global terms, or not described at all. In much of the research the intervention package remains too much of a “black box” (Axford, Little, Morpeth, & Weyts, 2005). On this point there is still a lot of work to do. To start with, there should be a better description of what a residential intervention program exactly entails. But that is not enough (cf. Henggeler & Schoenwald, 2002). It is also desirable to work out whether

the practice of this intervention is the same as what one described or intended to do (“treatment integrity”). For that purpose new instruments and research designs need to be developed. In the terms of realistic evaluation, the experimental designs produce “a description of outcomes, rather than explanations of why programmes work” (Pawson & Tilly, 1997, p. 30). This is not easy, but it is necessary. Only by doing this it will be possible to show an empirical relation between outcomes on the one hand and well-described interventions for children and youth on the other; and then we may get a real insight on what makes the difference in effective residential child and youth care (cf. Harder, Knorth, & Zandberg, 2006; Kendrick, 2007).

## Appendix 5.1

Table 5.5  
Results PE effect studies on residential child and youth care 1990 – 2005

No.	Authors (year)	Country	Outcome criterion	N	Treatment program <sup>a</sup>	Result (ES)
1	Jansen & Oud (1993)	Neth	A. Problem behavior (CBCL - parents) <sup>b</sup> B. Internalizing problem behavior (idem) C. Externalizing problem behavior (idem) D. Problem behavior (CBCL - group caregivers) E. Internalizing problem behavior (idem) F. Externalizing problem behavior (idem)	84	Residential youth care (10) and intramural psychiatric treatment (2)	A. +.71 B. +.49 C. +.65 D. -.02 E. .00 F. -.10
2	Van der Ploeg & Scholte (2003)	Neth	A. Problem behavior (CBCL - group caregivers) B. Internalizing problem behavior (idem) C. Externalizing problem behavior (idem)	116	Residential youth care (9)	A. -.15 B. -.05 C. -.12
3	Leichtman et al. (2001)	US	A. Problem behavior (CBCL - parents) B. Internalizing problem behavior (idem) C. Externalizing problem behavior (idem) D. Problem behavior (YSR) E. Internalizing problem behavior (idem) F. Externalizing problem behavior (idem)	70	Residential treatment, intensive and short-lasting (Menninger program) (1)	A. +1.23 B. +.88 C. +1.20 D. +1.29 E. +.98 F. +1.40
4	Boendermaker (1998)	Neth	F. Externalizing problem behavior (idem) A. Problem behavior (YSR) B. Internalizing problem behavior (idem) C. Externalizing problem behavior (idem)	130	Judicial treatment institutions (12)	A. +1.17 B. +.85 C. +1.15
5	Gavidia-Payne et al. (2003)	Aus	A. General behavior/functioning (SDQ) B. Emotional symptoms (SDQ subscale) C. Behavior problems (SDQ subscale)	37	Intramural treatment (capacity 12)	A. +.60 B. +.42 C. +.64
6	Enns et al. (2003)	Can	Internalizing problem behavior (depression symptoms BDI)	67	Intramural psychiatric treatment for adolescents (1)	+ .47
7	Hintikka et al. (2003)	Fin	Depressive behavior (BDI)	39	Intramural psychiatric treatment of 2 groups of youth (capacity 10 and 5), namely: 1. youth with depression (N=28) 2. youth with behavior disorders (N=11)	1. +.50 2. +.30



Table 5.5 (continued)

		<i>Psychosocial functioning</i>					
8	Leichtman et al. (2001)	US	A. Psychosocial functioning (CGAS) B. Behavioral functioning (CAFAS)	<b>85</b>	Residential treatment, intensive and short-lasting (Menninger program) (1)	A. <b>+1.81</b> B. <b>+2.00</b>	
9	Hintikka et al. (2003)	Fin	A. General functioning/behavior (GAS) B. Self-image (OSIQ) C. Functioning family (self-registration list) D. Cognitive functioning (WAIS-R)	39	Intramural psychiatric treatment of 2 groups of youth (capacity 10 and 5), namely: 1. youth with depression (N=28) 2. youth with behavior disorders (N=11)	A1. <b>+1.27</b> A2. <b>+1.53</b> B1. <b>+81</b> B2. <b>+80</b> C1. <b>+37</b> C2. <b>-93</b> D1. <b>+50</b> D2. <b>+88</b> <b>+1.66</b>	
10	Mayes et al. (2001)	US	Psychological functioning (CIS)	<b>110</b>	Intramural psychiatric treatment – small-scale (1)	<b>+1.66</b>	
11	Piersma et al. (1993)	US	A. Inwards-aimed functioning, introversion (MAPI subscale) B. Control of impulsive behavior	<b>157</b>	Intramural psychiatric treatment of 2 groups of youth, namely: 1. youth with depression (N=94) 2. youth with behavior disorders (N=63)	A1. <b>+31</b> A2. <b>+06</b> B1. <b>+56</b> B2. <b>+42</b>	
		<i>Specific skills</i>					
12	Malmgren & Leone (2000)	US	Cognitive skills (GORT-3 subscales): A. Reading speed and accuracy B. Reading comprehension	<b>45</b>	Reading program within judicial youth institution (1)	A. <b>+32</b> B. <b>+25</b>	

*Note.* The sequence in which the studies are presented is based on used outcome criteria and instruments. The total number of assessed youths after residential care (number printed bold in the *N* column): 870. *ES* = Effect Size.

<sup>a</sup>The numbers between brackets ( ) point to the number of residential centers or institutions that took part in the research. <sup>b</sup>CBCL = Child Behavior Checklist; YSR = Youth Self Report; SDQ = Strength and Difficulties Questionnaire; BDI = Beck Depression Inventory; CGAS = Children's Global Assessment Scale; CAFAS = Child and Adolescent Functional Assessment Scale; GAS = Global Assessment Scale; OSIQ = Offer Self-Image Questionnaire for Adolescents; WAIS-R = Wechsler Adult Intelligence Scale – Revised; CIS = Columbia Impairment Scale; MAPI = Millon Adolescent Personality Inventory; GORT-3 = Gray Oral Reading Test, 3rd edition.

## Appendix 5.2

Table 5.6  
Results *QE*-effect studies on residential child and youth care 1990 – 2005

No	Authors (year)	Country	Outcome criterion	N	Age population (range/M)	Treatment conditions (TC)	Results TC difference	ES
<i>Problem behavior</i>								
1	Henggeler et al. (2003)	US	A. Internalizing problem behavior <sup>a</sup> B. Externalizing problem behavior <sup>a</sup>	151	10-17	1. Crisis-treatment intramural (n=77) 2. Multi System Treatment (n=74)	A. 1 < 2 B. 1 = 2	A. -.13 B. +.002
2	Leve & Chamber- lain (2005)	US	A. Problem behavior <sup>a</sup> B. Contact with delinquent peers (DFQ)	153	12-17	1. Residential group (n=73) 2. Multidimensional therapeutic foster care (n=80)	A. 1 < 2 B. 1 < 2	A. -.30 B. -.52
3	Landsman et al. (2001)	US	Problem behavior <sup>a</sup>	51	5-14	1. Family-oriented residential treatment: REPARE (n=39) 2. Residential treatment 'normal' (n=12)	1 > 2	+.28
4	Mattejat et al. (2001)	Ger	Symptoms problem behavior (MMS)	41	12	1. Intramural psychiatric treatment (n=18) 2. Treatment at home (n=23)	1 > 2	+.22
5	Ten Brink (1998)	Neth	Problem behavior <sup>a</sup>	82	4-14	1. Residential treatment (n=45) 2. Day treatment (n=37)	1 < 2	-.47
8	Katz et al. (2004)	Can	Internalizing problem behavior (depression - BDI)	53	14-17	1. Residential care based on behavior therapy (n=26) 2. Residential care based on psychodynamic therapy (n=27)	1 < 2	-.03
7	Scholte & Van der Ploeg (2003)	Neth	A. Problem behavior <sup>b</sup> B. Internalizing problem behavior <sup>b</sup> C. Externalizing problem behavior <sup>b</sup>	74	15	1. Behavioral residential treatment (n=52) 2. Premature termination/ending of residential help (n=22)	1 > 2 1 > 2 1 > 2	A. +.46 B. +.31 C. +.38

Table 5.6 (continued)

8	Rohde et al. (2004)	US	A. Internalizing problem behavior <sup>c</sup> B. Externalizing problem behavior <sup>c</sup>	109	12-22	1. Coping training in JYI-1 <sup>a</sup> (n=43) 2. Judicial youth institution (JYI-1) 'normal' (n=21) 3. Judicial youth institution (JYI-2) 'normal' (n=45)	A1. 1 > 2 A2. 1 > 3 B1. 1 > 2 B2. 1 < 3	A1. +.04 A2. +.44 B1. +.05 B2. -.07	
<i>Delinquent behavior</i>									
9	Chamberlain & Reid (1998)	US	A. Delinquent act – self-report (EBC) B. Delinquent act – official numbers	79	12-17	1. Residential group (n=42) 2. Multidimensional therapeutic foster care (n=37)	1 < 2 1 < 2	A. -.59 B. -.40	
10	Greenwood & Turner (1993)	US	Delinquent behavior – self-report Delinquent behavior – arrests	148	17	1. Paint Creek Youth Centre (n=73) 2. Institution 'normal' (n=75)	1 < 2 1 > 2	-.14 +.10	
11	Guerra & Slaby (1990)	US	Delinquent act – official numbers	81	15-18	1. Cognitive-behavioral training in JYI (n=29) 2. Attention control in JYI (n=28) 3. Judicial youth institution (JYI) 'normal' (n=24)	1 > 3 1 > 2 2 > 3	+.12 +.09 +.03	
12	Moody (1997)	US	Recidivism problem behavior (infringing parole conditions)	28	14	1. Parent-therapy in judicial youth institution (n=14) 2. Judicial youth institution (JYI) 'normal' (n=14)	1 = 2	.00	
<i>Specific skills</i>									
13	Bleeker (1990)	Neth	A. Social skills (SOCVAR) B. Social competence (SKB)	29	17	1. Residential care with SS-training (n=11) 2. Residential care 'normal' (n=18)	1 > 2 1 > 2	A. +.34 B. +.74	
14	Kolko et al. (1990)	US	A. Social skills (CAL-M) B. Social problems (SPS) C. Loneliness (LNS-M)	56	10	1. Intramural with social-cognitive skills training (n=36) 2. Intramural with social activity-group (n=20)	1 > 2 1 < 2 1 > 2	A. +.50 B. -.43 C. +.24	
15	Nas (2005)	Neth	A. Social skills (IAP-SF) B. Moral Reasoning (SRM-SF)	108	21-21	1. Judicial youth institution plus equip program (n=61) 2. Judicial youth institution without equip program (n=47)	1 > 2 1 > 2	A. +.09 B. +.04	

Table 5.6 (continued)

16	Pecukonis (1990)	US	A. Affective empathy (HET) B. Cognitive empathy (HET)	20	14-17	1. Residential care with empathy training (n=10) 2. Residential care 'normal' (n=10)	1 > 2 1 > 2	A. +1.01 B. +.69
17	Thompson et al. (1996)	US	Cognitive skills (school performance)	463	1. 14 2. 15	1. Residential care with special school-program (n=412) 2. Residential care 'normal' (n=51)	1 > 2	+ .40

Note. The sequence in which the studies are presented is based on the applied type of intervention in the studies. Total number of assessed youths after residential care (numbers printed bold): 1475. M = Mean. ES = Effect Size.  
<sup>a</sup>Measured with CBCL (parents); <sup>b</sup>Measured with CBCL (group caregivers); <sup>c</sup>Measured with YSR (youth); <sup>d</sup>Judicial Youth Institution.  
 CBCL = Child Behavior Checklist; YSR = Youth Self-Report; DFQ = Describing Friends Questionnaire; MSS = Marburg Symptom Scale; BDI = Beck Depression Inventory; EBC = Elliott Behavior Checklist; SOCVAR = Sociale Vaardigheden Vragenlijst [Social Skills Questionnaire]; SKB = Sociale Competentie Beoordelingslijst [Social Competence Assessmentlist]; CAI-M = Children's Assertiveness Inventory-Modified; SPS = Social Problems Screen; LNS-M = Loneliness Scale for Children-Modified; SRM-SF = Sociomoral Reflection Measure-Short Form; IAP-SF = Inventory of Adolescent Problems-Short Form; HET = Hogan Empathy Test.

