Published in final edited form as:

J Emot Behav Disord. 2017 June ; 25(2): 119–128. doi:10.1177/1063426616630520.

Does Model Matter? Examining Change Across Time for Youth in Group Homes

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Abstract

Group homes are a frequently used but controversial treatment setting for youth with mental health problems. Within the relatively sparse literature on group homes, there is some evidence that some models of treatment may be associated with more positive outcomes for youth. This article explores this possibility by examining differences across time for youth served in group homes utilizing the Teaching Family Model (TFM) and geographically proximate homes using more eclectic approaches. Data come from a longitudinal quasi-experimental study that included 554 youth. Results suggest that youth showed, on average, significant and rapid improvement during initial months in a group home. Improvement did not differ for TFM and non-TFM homes during this initial period. Post-discharge results, though, show that TFM was associated with continued improvement after discharge and significantly better outcomes by 8 months post-discharge. Results also discuss youth-level factors that may influence outcomes as well as need for additional work to more fully understand processes and practices that are key for maximizing and maintaining youths' positive outcomes during and after group home placements.

Keywords

treatment outcomes; residential treatment; children's mental health; evidence-based interventions

Over the past several decades, the use of group care for youth has been controversial due to reported inconsistent regulation, accreditation, and licensing; mistreatment and abuse in facilities; and limited evidence of treatment quality and effectiveness (Barth, 2002; Behar, Friedman, Pinto, Katz-Leavy, & Jones, 2007; Friedman et al., 2006; Pavkov, Negash, Lourie, & Hug, 2010). Despite these concerns, group care residences continue to be frequently used placement for youth with mental health and behavioral problems (Administration for

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Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Children, Youth, and Families, 2013; Office of Juvenile Justice and Delinquency Prevention, 2013; Substance Abuse and Mental Health Services Administration, 2013).

Group care settings cover a wide range of facilities. They differ in size, location, target population, level of restrictiveness, function, program structure, and treatment services and implementation (Lee & Barth, 2011). Furthermore, youth served in group care settings differ on various characteristics, including clinical and trauma histories (e.g., psychiatric diagnoses, substance abuse, maltreatment history), service utilization (e.g., psychotropic medication), and number of placements (Chow, Mettrick, Stephan, & Von Waldner, 2014; Duppong Hurley et al., 2009; Pumariega, Johnson, & Sheridan, 1995; Seifert, Farmer, Wagner, Maultsby, & Burns, 2015). Not surprisingly, current literature comparing group care and other out-of-home placements reveals inconsistent findings on youth outcomes (Chamberlain & Reid, 1998; DeSena et al., 2005; James, Roesch, & Zhang, 2012; McCrae, Lee, Barth, & Rautkis, 2010; for reviews, see Lee, Bright, Svoboda, Fakunmoju, & Barth, 2011; Osei, Corey, & Hernandez Jozefowicz, 2016). However, when studies do not distinguish between types of group care and heterogeneity of youth served, findings related to the effectiveness (or lack thereof) of various group care settings for youth treatment may be obscured and it is difficult to assess generalizability or implications.

Of the various group care settings, group homes are one of the most widely utilized placements for youth with significant mental health issues and histories (Chow et al., 2014; Lee & Thompson, 2009). Similar to other group care settings, the use of group home care for youth is controversial for a variety of reasons, including limited evidence of effectiveness (Frensch & Cameron, 2002; Shostack & Quane, 1988) and potential iatrogenic effects associated with peer-group interventions (Dishion, McCord, & Poulin, 1999; Dishion, Spracklen, Andrews, & Patterson, 1996; Dodge, Dishion, & Lansford, 2006). The term *group home* designates a type of physical facility. This type of facility can operate in widely different ways and can utilize myriad approaches and strategies for working with youth.

Over the past several decades, literature has suggested that improved quality or models of group home care may increase the benefits experienced by youth (e.g., Fixsen & Blasé, 2002; Wolf, Kirigin, Fixsen, Blase, & Braukmann, 1995; Wolf et al., 1976). In a review of treatment models for group homes and residential care, James (2011) reported that four of five models were supported or promising with evidence of benefits for youth. One of the models with the most empirical support was the Teaching Family Model (TFM; Fixsen & Blasé, 2002; Phillips, Phillips, Fixsen, & Wolf, 1974; Wolf et al., 1995). TFM homes implement a well-specified model that utilizes proactive behavior approaches focused on promoting youth strengths, highly trained and supervised staff, ongoing professional consultation, and a focus on family-style living (U.S. Department of Health and Human Services, 1999; Wolf et al., 1995; Wolf et al., 1976). Many of the core TFM elements have been linked to positive youth outcomes (e.g., Friman et al., 1996; Gilman & Handwerk, 2001; Handwerk, Smith, Thompson, Spellman, & Daly, 2008; Handwerk, Turk, Hoff, Lucas, & Friman, 2006; Jones & Timbers, 2003; Larzelere, Daly, Davis, Chmelka, & Handwerk, 2004; Lee, Chmelka, & Thompson, 2010; Lee & Thompson, 2009; McNeal, Field, Handwerk, Roberts, & Friman, 2006). Much of this evidence, however, is either very dated

or based on selected settings (Fixsen & Blasé, 2002; Kirigin, Braukmann, Atwater, & Wolf, 1982; Lazelere, Smith, & Daly, 1997; Thompson et al., 1996).

Pre-post findings about change across time while youth reside in TFM homes have been mostly positive (Gilman & Handwerk, 2001; Handwerk et al., 2008; Handwerk et al., 2006; Larzelere et al., 2004; Lee et al., 2010; Lee & Thompson, 2009; McNeal et al., 2006). Outcomes include higher youth-reported hope for the future (McNeal et al., 2006); increased self-reported life satisfaction related to view of self, school, and friends (Gilman & Handwerk, 2001); and significantly fewer youth meeting criteria for psychiatric disorders (Handwerk et al., 2006). By discharge, youth are reported to have decreased medication rates (Handwerk et al., 2008), fewer externalizing and internalizing behaviors and psychiatric symptoms, and discharge to less restrictive settings (Larzelere et al., 2004).

Studies that have compared TFM programs with other settings have also generally found positive results on both key processes and outcomes (Bedlington, Braukmann, Ramp, & Wolf, 1988; Cohen et al., 2010; Friman et al., 1996; Slot, Jagers, & Dangel, 1992; Weinrott, Jones, & Howard, 1982). Compared with non-TFM group homes, TFM homes have greater levels of adult–youth communication and instances of adults teaching youth (Bedlington et al., 1988), higher satisfaction with supervising adults, decreased isolation from friends and family, and greater sense of personal control (Friman et al., 1996). Increased exposure to TFM practices (more staff interactions, length of stay, or both) has been associated with lower rates of delinquency among youth in TFM homes versus those receiving treatment-as-usual (i.e., standard probation; Cohen et al., 2010). Studies have also suggested that TFM homes were more cost-effective than non-TFM homes for promoting educational outcomes.

To date, few studies have examined outcomes for youth *after* their discharge from TFM group homes (Braukmann et al., 1985; Kirigin et al., 1982; Ringle, Ingram, & Thompson, 2010; Roose, 1987; Thompson et al., 1996; Wolf et al., 1976). Several studies document positive outcomes that extend beyond discharge for youth in TFM group homes. These include higher rates of sustained good or fair functioning (e.g., improved social relationships) and less psychiatric symptoms than youth in non-TFM homes (Roose, 1987) and greater improvements in academic functioning during placement and after discharge than youth receiving “treatment-as-usual” (Thompson et al., 1996). Studies have also shown lower rates of institutionalization and greater likelihood of continuing school than youth in an institutional program after discharge from treatment (Wolf et al., 1976). Longer time in placement has also been positively associated with a greater likelihood of achieving at least a high school education by post-discharge follow-up (Ringle et al., 2010). In contrast, several early studies found that youth in TFM versus non-TFM group homes had better in-home outcomes, including less drug and alcohol use, more prosocial behavior (Braukmann et al., 1985), fewer juvenile offense rates (Kirigin et al., 1982), but no significant outcome differences between groups during the posttreatment year (Braukmann et al., 1985; Kirigin et al., 1982).

Several investigations have examined characteristics of youth to examine whether there are systematic differences in the observed outcomes. Results here are sparse. Lee and colleagues (2010) found that youth in TFM group homes with no problem behaviors had the most

positive outcomes following discharge (6-month follow-up) compared with youth with other behavioral trajectories. In addition, these specific behavior patterns predicted youth outcomes beyond the influence of demographic characteristics, placement history, and mental health needs (Lee et al., 2010). Sex differences have also been linked to outcomes. Handwerk and colleagues (2006) found that girls entered group homes not only with higher internalizing symptoms but also experiencing greater improvements by discharge. However, sex differences were not found at 6 months after discharge (Handwerk et al., 2006). Both of these studies were conducted on the same program and neither included a comparison group, so it remains unclear whether the findings are generalizable to other TFM group homes and whether program model (TFM vs. non-TFM) affects youth outcomes net of other youth characteristics (e.g., symptoms, demographics).

In general, the literature suggests that youth in TFM group homes are more likely than youth in non-TFM comparison groups to experience benefits while they are living in the homes. However, there is less evidence regarding whether in-home improvements persist following discharge for youth in TFM versus non-TFM comparison groups. There are a number of gaps in the literature on TFM group homes. The majority of studies were completed on one specific program, Boys Town, which calls into question generalizability of findings, and many of studies were conducted many years ago. Furthermore, most studies examined TFM homes alone (with no comparison group), and/or investigated patterns of youth outcomes during their stay but not after discharge. Overall, results look promising, but, in this era of increasing focus on evidence-informed interventions, there is a great need for contemporary research that examines patterns and predictors of outcomes across a range of diverse group homes. Such information could be useful in advancing knowledge of effective practice and providing a starting point for more detailed analysis and understanding of key factors that influence outcomes.

The current article provides an initial exploration of potential differences in patterns between youth served in homes utilizing a promising evidence-informed model (the TFM) and youth served in homes that use more eclectic approaches. As the field of behavioral health and children's mental health services increasingly focus on dissemination and implementation of specific models, such analyses about "usual care" implementation provide an indication of whether "model matters" at a very basic level and potentially lay the foundation for more detailed future work to examine factors, practices, and processes that might help explain any observed differences. In specific, the current analyses address the following: Do youth in TFM and non-TFM homes show improvements across time? Are these improvements similar for TFM and non-TFM homes? Are there specific time periods when changes are most likely? Does program model matter above and beyond youth characteristics and time in treatment?

Method

Data come from a quasi-experimental study conducted in a southeastern state. The sample was designed to include TFM group homes as well as group homes in the same geographic catchment areas that were not using the TFM (non-TFM). Based on state-level definitions, group homes were defined as residential placements, licensed by either the state's Division

of Social Services or Division of Health Service Regulation that contained no more than 10 beds per home. Geographic location of each TFM program was determined and all other licensed group homes in the same county were then eligible for inclusion as a non-TFM program. Because of the infrastructure costs and requirements of TFM programs, there were no single stand-alone TFM homes in the state (all homes were part of an agency that ran multiple homes). To assure that agency size would not systematically differ between TFM and non-TFM homes, stand-alone non-TFM homes were eliminated from eligibility. Hence, all eligible agencies operated at least two homes (range = 2–8 homes). From this resulting list, one non-TFM agency was randomly selected from each of the counties that also housed a TFM program.

The resulting sample included seven TFM agencies and seven non-TFM agencies. Within these agencies, youth resided in a total of 49 homes (24 TFM homes, 25 non-TFM homes). Agencies on both sides of the study were operating a median of four homes and each home included four to 10 beds (median of 5–6). Nearly all of the programs (85%) were housed within agencies that provided additional types of services for youth (e.g., Treatment Foster Care, 67%; outpatient therapy, 42%; education/day treatment, 42%; case management, 33%; reunification support, 33%; vocational training, 25%).

Data for the broader study came from multiple sources (e.g., record reviews, observations, in-person interviews with youth and staff, telephone interviews with pre-placement and post-discharge caregivers). The sampling frame included all youth who were served by the participating homes during the study period. This included youth who were living in the homes at the time the study started, as well as youth who entered the homes during the 2-year follow-up.

Demographic and background data came from two sources. For all youth, data were abstracted from the agencies' records. For youth who entered the group home during the 2-year recruitment period, additional data on pre-admission variables were gathered via telephone interviews with the youth's primary care provider from the month before admission.

Longitudinal data were collected across a 24-month period for each participating home. Every 4 months, interviewers conducted interviews with staff members and youth (separately) at the home. Consent was obtained from each participating youth's parent/guardian prior to interviewing a staff member about the youth. Interviews were conducted with a lead staff member in each home. These interviews asked questions about the home (e.g., staffing, programming, peer relationships) as well as individual questions about each youth (e.g., behavior, relationships, school performance, etc.). Each staff interview took approximately 1.5 to 2 hr. Interviews were also conducted with youth every 4 months while he or she resided in the home, but data from those interviews are not included in the current analyses.

Data from the post-discharge period were collected twice: at approximately 4 months and 8 months after discharge from the home. Telephone interviews were conducted with the

youth's current primary caregiver at each of these follow-up waves. Overall, post-discharge follow-ups were collected on 74% of participating youth.

Sample

The analysis cohort included 554 youth. Of them, 154 participants were living in a participating group home at the time the study began working with the relevant home; the remaining 400 youth were recruited as they were admitted to a participating group home during the 2-year follow-up period in each home. Overall, 358 youth resided in Teaching Family homes and 196 were in non-Teaching Family homes.

Measures

Data for these analyses focus primarily on changes across time on the Strengths and Difficulties Questionnaire (SDQ; Bourdon, Goodman, Rae, Simpson, & Koretz, 2005; Goodman, 2001). The SDQ is a 25-item measure that assesses level of psychological symptoms across five domains (emotional, conduct, hyperactivity-inattention, peer relationships, and prosocial). Psychometric analyses have shown the SDQ to have good validity and reliability, reliably assess change, and be valid in a wide range of populations (Bourdon et al., 2005; Ford, Collishaw, Meltzer, & Goodman, 2007; Goodman, 2001). For current analyses, total problem scores are used (based on a total of the Emotional, Conduct, Hyperactivity-Inattention, and Peer subscales). Norms for the U.S. general population suggest a mean of approximately 6.4 to 7.6 for youth 11 to 17 years old (the age range that includes the majority of youth in the current study) and a cut-point of 16 for designating youth who may have serious problems (Bourdon et al., 2005).

Additional data include demographic characteristics of youth, length of stay, and model of care. Demographics included age, race, and sex. All of these data were collected from multiple sources (record review, staff interview, caregiver interview, youth interview). In most cases, multiple sources were concordant. A "preponderance of the evidence" approach was used to resolve conflicting data. For inconsistencies on race, a youth's self-definition was given priority.

Length of stay was calculated by subtracting entry date from discharge date. Only 15 youth had not been discharged by the end of the study period. Length of stay was not calculated for these youth (as this variable was only meaningful in assessing outcomes and, by definition, youth who were still receiving treatment had not met criteria for "last in-home" or "post-discharge" outcomes).

Whether a youth was served in a TFM or non-TFM home was coded from the interview with the agency director at the start of the study. All agency directors (and staff members) within TFM programs indicated that their agency utilized the TFM to guide treatment. On the non-TFM side of the study, there were a variety of strategies and models that programs utilized, some clearly based on well-known models (e.g., anger replacement, behavior management, cognitive behavioral therapy [CBT]) and others more loosely conceptualized (e.g., "role model," "model of care"). However, there was no dominant or common model that characterized the non-TFM agencies in the study.

Analysis

Mean values and standard deviations or proportions as appropriate were calculated for the complete cohort and again separately for participants in each type of home, TFM and non-TFM. Bivariate comparisons for the latter analyses were based on standard chi-square tests for categorical measures and *t* test for continuous measures.

The primary aim of these current analyses was to examine changes across time in SDQ scores, for youth in TFM and non-TFM homes. This was done graphically to gain an initial overview of the patterns.

Mixed model regression analysis was used to test for differences between TFM and non-TFM homes. These models included home (as a random variable) and accounted for nesting of youth within homes. For these analyses, two primary outcome points were defined: end of treatment (i.e., last assessment while the youth resided in the group home) and post-discharge. Last in-home assessment was defined as the final data available on the youth during his or her time in the group homes. Hence, because data were collected every 4 months, each youth's last in-home data point captured his or her outcomes within the 4-month period preceding discharge. Data collection for post-discharge was attempted at two points: 4 months and 8 months after discharge from the home. Analyses were run using the 4-month data, 8-month data, and a composite for "last available data" (i.e., 4- or 8-month, whichever was the final data collection on that focal youth). Sensitivity analysis comparing the 4- and 8-month time points differed only marginally, so all reported results focus on "last available" measure to maximize analytic power. The baseline level (i.e., SDQ indicating status immediately prior to entry into the focal phase) of SDQ was included in all models as a control for initial severity. Hence, for analysis of last in-home SDQ, pre-admission SDQ (that captured symptoms immediately prior to group home placement) was included, and for post-discharge analyses, last in-home SDQ was included to control for end-of-placement severity. Additional covariates included age, sex, race, and length of stay in the group home.

Missing Data

There were virtually no missing data on demographic data or SDQ scores while the youth resided in the homes. There were missing data, however, for pre-admission and post-discharge SDQ scores. As described below, pre-admission SDQ scores were imputed. Post-discharge scores were not. In addition, data on length of stay were right censored for youth who remained in the home at the end of the study period. Because this variable was utilized to examine relationships between length of stay and outcomes, and such outcomes (last in-home and/or post-discharge) did not, by definition, exist for youth who remained in the group homes, these were not imputed ($n = 15$).

Data on severity of psychiatric problems immediately prior to placement, measured by the SDQ for the current analyses, came from parent/guardian/caregiver reports and focused on the month prior to the youth's placement in the focal group home. As it was not viable to conduct such interviews with youth who were already living in the group homes at the time the study started, SDQ scores for these 169 participants were multiply imputed using a two-step process. An initial imputation model based on a Markov Chain Monte Carlo algorithm

($m = 5$ imputations) was used to establish a monotone missing data pattern; variables for the latter model included measures from the child history and mental health status domains (see Farmer, Wagner, Burns, & Murray, in press for details) as well as the initial in-home SDQ measurement. Subsequent missing values were imputed in a second step using regression procedures as described by Rubin (1987); the model for the latter imputations was based on the same variables referenced above. Data from the five analyses were combined into single estimates and tested as described by Shafer (1997). All analyses were run with both existing and imputed SDQ data. Given a lack of difference in outcomes between these analyses, all reported findings are based on imputed data, so that all youth could be included in analyses.

Post-discharge data were collected on 74% of the eligible sample. The 26% for whom post-discharge data are missing had somewhat higher SDQ scores pre-placement (19.5 vs. 18.7, $p < .05$) and were older (15.2 vs. 14.5 years at baseline interview, $p < .001$). Missing at post-discharge was not related to SDQ score at the time of discharge, race, sex, model of care, or length of stay.

Results

Sample Characteristics

The sample was demographically diverse (see Table 1). Approximately half of the youth were male (51.7%) and nearly half were racial/ethnic minorities (46.4%). Youth were primarily adolescents, with a mean age of 14.7 ($SD = 2.0$).

Youth also showed variation on clinical severity and mental health treatment. Chart diagnosis was available for 94% of the sample. According to this, 75% of the youth had a psychiatric diagnosis at the time of admission and 49% of those with a diagnosis met criteria for multiple diagnoses. The most common diagnosis was conduct disorder (46.6%), followed by attention-deficit/hyperactivity disorder (ADHD; 34.8%) and depression (25.4%). Scores on the SDQ showed a mean in the clinical range (18.9), but considerable variation ($SD = 5.7$; Seifert et al., 2015). As described previously (Farmer, et al., in press), youth in Teaching Family and non-Teaching Family homes were similar demographically. However, youth in TFM homes showed slightly lower levels of mental health problems (e.g., SDQ of 18.3 [$SD = 5.8$] vs. 20.1 [$SD = 5.5$], $p < .01$). Hence, level of severity at time of placement was included in all analyses.

Changes in SDQ Across Time During Group Home Placement

The primary questions for the current analysis focus on change across time related to group home experience. Figure 1 shows the overall pattern of changes in SDQ scores during the time youth reside in group homes. This figure shows that, across the 20-month period depicted here, youths' average SDQ scores improved from approximately 19 (immediately prior to admission) to 11 (at the 20-month wave). This moves the "average" score from an elevated clinical score to a score in the "normal" range of the SDQ (Bourdon et al., 2005).

This graph suggests a substantial improvement in scores from pre-admission to the first interview in the group home (pre-admission to 4 months), relative stability of average scores from 4 through 12 months, and renewed improvements from 16 through 20 months. Beyond

20 months, there are insufficient youth remaining in the homes to report mean scores (by 24 months, just eight youth were still residing in the focal group homes).

While this graph provides one view of change while youth are in the home, it masks a number of complexities. First, as noted above, 154 (28%) of the study participants were already residing in the focal homes at the time the study started. Therefore, their “first interview in the group home” (designated here as the “4-month” data) occurred when the study started and did not capture any consistent or meaningful interval relevant to their tenure in the group home. For youth who were new admissions (i.e., admitted during the course of data collection activities with the homes), in contrast, the first “in-home” interview occurred within their first 4 months of admission to the group home. Second, the graph captures all youth who were in the homes across the multiple waves of data collection. Hence, if discharge were systematically related to severity, this would appear as a “change” across time in this graph, but would actually reflect attrition due to discharge. However, graphs depicting scores across time for youth who were newly admitted, who had multiple waves of data, and/or remained in the homes for the full 20 months showed a nearly identical pattern of change across time (and, hence, were not added to Figure 1).

Figure 2 explores whether changes across time while in the group homes were similar for youth in TFM and non-TFM homes. Both types of homes show a similarly improved level of SDQ scores by the 4-month data and relative stability through 12 months. At 16 months, it appears that youth in the two models may be diverging. TFM homes show marked improvements between 12 and 16 months, whereas non-TFM youth show slight worsening of mean scores by 16 months. However, these means are not significantly different from each other and sample sizes are quite small once youth are divided by type of home ($n = 13$ for non-TFM, $n = 26$ for TFM at 20 months).

Changes in SDQ across time during and after group home placement—Figure 3 expands the time frame of analysis to examine changes both during placement and after discharge. To simplify the in-home portion of the analysis and focus on the meaningful data points, means are presented for pre-admission, first data point while the youth was in the home, last data point while the youth was in the home, and follow-up data at 8 months post-discharge. Focusing on first and last in-home data (rather than the exact month of data collection) minimizes some of the sample size issues raised above and provides a more parsimonious approach to exploring change during group home residence.

This depiction of the change across time confirms the significant and substantial improvement in SDQ between pre-admission and first in-home assessment. It also begins to suggest the diversion across time between youth in TFM and non-TFM programs. By the last in-home assessment, youth in TFM programs show slightly better SDQ mean scores than youth in non-TFM homes (14.6 [$SD = 6.9$] vs. 15.8 [$SD = 7.2$]). As expected from this relatively small difference and large standard deviation, this difference is not significant ($t = 1.5$, adjusted $p = .86$). However, by the time of the post-discharge interview at 8 months, youth who resided in TFM homes showed significantly better average SDQ scores than youth served in non-TFM homes (13.2 [$SD = 8.1$] vs. 16.2 [$SD = 8.4$]; $t = 4.2$, adjusted $p < .001$).

Factors related to change across time—Current analyses are focused on describing patterns of change across time and exploring whether those who resided in homes that used the TFM showed significantly different outcomes than those who resided in homes using other approaches. Multiple regression analyses were used to move beyond the simple graphical exploration of change across time to explore whether different types of youth might show systematically different outcomes.

A simple model containing demographic factors (age, sex, race), severity of symptoms pre-admission, home model (TFM vs. non-TFM), and length of stay was used to begin examining this set of questions. As shown in Table 2, SDQ scores at the last in-home assessment were better for youth who had a better SDQ at pre-admission, were members of racial/ethnic minorities, were older, and had a longer length of stay. Model of treatment was not significant for predicting outcomes while the youth was residing in the home.

Predicting improvement by the time of the final post-discharge assessment was related to better SDQ scores at both pre-admission and the last in-home assessment as well as placement in a TFM home. All else being equal, youth in TFM homes showed a 2-point larger improvement by the final post-discharge assessment than comparable youth served in non-TFM homes.

Discussion

This article focused on patterns of change in psychological symptoms across time for youth in group homes. Findings from this study update and extend earlier investigations of THM group homes (e.g., Roose, 1987; Thompson et al., 1996; Wolf et al., 1976) by (a) using a large statewide, multisite sample of THM homes; (b) comparing changes in youth symptoms across TFM and non-TFM homes; (c) focusing on both in-home and post-discharge symptoms; and (d) examining the influence of model type (TFM or non-TFM) on symptoms above and beyond youth characteristics and time in treatment. As with many analyses of apparently simple questions, the results suggest a nuanced answer. Overall, results suggest that group homes produce, on average, rapid and significant improvements in symptoms among youth. This overall pattern was similar for youth placed in Teaching Family and non-Teaching Family homes.

It was in the longer term effects that differences between TFM and non-TFM homes became apparent. For youth who remained in a group home for extended periods, youth in TFM homes showed a second period of improvement starting around 12 months. Youth in non-TFM homes, in contrast, did not show continued improvement during this extended time. The post-discharge period mimicked these patterns. Youth served in TFM homes showed continued improvement in the post-discharge period, whereas youth served in non-TFM homes did not. However, for both TFM and non-TFM homes, average SDQ scores up to 8 months post-discharge remained significantly below pre-admission levels.

Multivariate analyses were used to examine patterns of change across time and to examine whether model of treatment continued to make a difference, once other basic factors were taken into account. These analyses confirmed that amount of improvement during treatment

was not significantly related to model. Better-than-expected improvements were found for youth who had fewer problems at the time of admission, were older, and came from minority racial/ethnic groups. Findings also suggested that remaining in treatment for a longer period of time was associated with more significant improvement. In the post-discharge period, model of treatment did make a difference. Controlling for other factors, youth placed in TFM homes showed significantly more improvement than comparable youth in non-TFM homes.

Overall, these findings suggest that group homes produce quick and significant improvements that resemble the patterns of change seen in other evidence-based and promising out-of-home settings (e.g., Chamberlain, 1994; Fields, Farmer, Apperson, Mustillo, & Simmers, 2006). Although both TFM and non-TFM homes produced very similar initial improvements, there appears to be some benefit of TFM for longer term improvements. Such findings support and update several earlier studies documenting longer term improvements in psychosocial outcomes among youth in TFM homes (Roose, 1987; Thompson et al., 1996; Wolf et al., 1976). Furthermore, for youth who remain in treatment for extended periods as well as during the post-discharge period, TFM homes appear to produce significantly better outcomes. Why and how this occurs needs further analysis and attention.

There is a great deal more work to do on the factors and processes that underlie the longer term improvements associated with TFM homes. Several competing hypotheses could explain these findings. It seems important to understand whether it is structures and practices of the model that are related to improvements, whether it reflects internalization of key behaviors and attitudes by youth, and/or whether it reflects improved service planning and delivery in the post-discharge period. Each of these could affect the observed results. Additional focused analyses are needed to examine the relative influence of each.

Limitations

These analyses provide new information about changes across time for youth served in group homes. It examines patterns of change for group homes operating under “usual care” conditions, not as part of a model program, research study, or demonstration project. Therefore, it gives a good sense of both the overall effects and potential variations among group homes. However, there are limitations. First, this is an *initial* look at patterns across time. A great deal more work is necessary to examine why and how the observed patterns are produced. Second, analyses here focus on one outcome—the SDQ. There are a wide range of strengths-based, school, community, and other functional outcomes that are important to explore. The study is also geographically limited—it contains a variety of group homes, but they all operated within a single state. Hence, state-level variations cannot be known.

Conclusion

These results suggest that group homes are related to positive effects for youth. These results also suggest that extended length of stay in group homes is associated with continued improvement. Hence, while initial gains are most substantial, continued treatment in group

homes shows additional improvements well beyond this initial gain. Finally, these analyses have explored whether programs that employ a promising approach, the TFM, produce better outcomes for youth than homes that utilize a less-specified model of treatment. The data suggest that initial gains are similar, regardless of model. However, continued gains during extended stays and post-discharge outcomes favor the TFM.

As the field of children's mental health and child welfare grapple with ways to provide the most effective, least restrictive, and most sustainable interventions for youth who require intensive and extended intervention, it is critical to explore potential options. There has been considerable interest by policy makers, payers, and advocates to move away from group residential treatment. However, there is little empirical evidence to know whether this is warranted, what aspects of group care may be beneficial or problematic, and what policies, practices, and procedures might be put into place to maximize effectiveness in group home settings. These findings also suggest the importance of including long-term outcomes for assessing effectiveness. Short-term gains are relatively common, but for developing youth, shifts in long-term trajectories form the springboard for improved development, socialization, functioning, and flourishing. A great deal more work is needed on these out-of-home treatment settings to understand what factors are most strongly related to increasing such improved trajectories.

Acknowledgments

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the National Institute of Mental Health (MH079043).

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Figure 1. Change in SDQ across time during placement: Full sample
Note. SDQ = Strengths and Difficulties Questionnaire.

Figure 2. Change in SDQs for TFM versus non-TFM homes during placement

Note. SDQ = Strengths and Difficulties Questionnaire; TFM = teaching family model.

Figure 3. Change in SDQ across time, from pre-admission through post-discharge
Note. SDQ = Strengths and Difficulties Questionnaire; PD = post-discharge.

Table 1

Sample Description.

Variable	Full sample	TFM sample (<i>n</i> = 358)	Non-TFM sample (<i>n</i> = 196)
Child age	14.7 (<i>SD</i> = 2.0)	14.7 (<i>SD</i> = 2.0)	14.7 (<i>SD</i> = 2.1)
Child sex (male)	51.7%	51.7%	52.5%
Child race (White)	53.6%	54.7%	51.0%
SDQ total difficulties score **	19.3 (7.3)	18.5 (10.2)	20.7 (17.8)

Note. TFM = teaching family model; SDQ = Strengths and Difficulties Questionnaire.

**
p < .05.

Table 2

Predicting SDQ at Last in-Home and Post-Discharge.

Variable	Last in-home assessment ^a	Post-discharge ^a
SDQ from previous setting	0.25 (0.05) ***	0.42 (0.07) ***
Race (White)	1.25 (0.60) **	-0.64 (0.80)
Age (years)	-0.64 (0.15) ***	-0.20 (0.22)
Sex (male)	0.76 (0.60)	-0.50 (-0.79)
Model (TFM)	-0.59 (0.64)	-1.77 (0.85) **
Length of stay (months)	-0.13 (0.03) ***	-0.00 (0.00)
Last GH SDQ		0.42 (0.07) ***
Model R^2	.12	.24

Note. SDQ = Strengths and Difficulties Questionnaire; TFM = teaching family model; GH = group home.

* $p < .1$.

^aParameter estimate (standard error).

**
 $p < .05$.

***
 $p < .01$.