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Application of the Teaching-Family Model for Japanese Maltreated Children in a Residential Treatment Setting

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Objective: The aim of the present study was to evaluate outcomes of the Teaching-Family Model (TFM) as an intervention for maltreated children who exhibit noncompliance and problematic behavior, in a Japanese residential treatment setting.
Methods: The effect of the TFM on 44 children (mean age, 13.6 years; age range, 6–18 years) was assessed using the count data for noncompliance, evaluated by the direct care staff, and problematic behaviors, assessed by the Child Behavior Checklist (CBCL). Data were collected at three time points (at the implementation of the TFM and at 6 months and 1 year after implementation) and compared to assess changes.
Results: At 1 year after the TFM, a significant decrease in noncompliance (noncompliance with the rules: $F[2, 78] = 4.41$, $p = .015$; noncompliance with following the instructions: $df = 2$, $\chi^2 = 6.31$, $p = .043$) was seen. Significant decreases were also seen in CBCL T-scores at both 6 months and 1 year after the TFM (total problems: $F[2, 86] = 361.20$, $p < .001$; internalizing problems: $F[2, 86] = 287.26$, $p < .001$; externalizing problems: $F[2, 86] = 193.44$, $p < .001$).
Conclusion: These results suggest that the use of a TFM may promote positive changes in problematic behavior displayed by maltreated children in Japanese residential treatment settings.

***Keywords*:** maltreatment, noncompliance, residential treatment, teaching-family model

Introduction

In Japan, increasing concern has been expressed about child maltreatment, which includes physical abuse, psychological abuse, sexual abuse, and neglect (World Health Organization, 1999). Over the past two decades, the number of child maltreatment cases reported to child guidance centers in Japan has dramatically increased from 1961 in 1995 to 103,286 in 2015 (Japanese Ministry of Health Labour and Welfare [JMHLW], 2017). Accordingly, the ratio of maltreated children placed in residential childcare facilities has also been increasing (Japanese Child and Family Research Institute, 2016). A recent report showed that approximately 60% of the children in residential settings experienced maltreatment before admission (JMHLW, 2017). This increase has led to a change in the quality of care at such facilities and, consequently, a rise in the incidence of several problematic behaviors, including delinquency and physical violence (Taga, Yamaguchi, Karino, & Yoshida, 2012; Tsuboi & Sango, 2011a). Specifically, Tsuboi and Sango (2011a) indicated that caregivers in residential settings typically experience aggressive behaviors among maltreated children, including physical violence, verbal abuse, and instigation. In addition to externalizing problems, internalizing

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problems concerning maltreated children (Lewis et al., 2011; Fletcher, 2009) and children placed in residential childcare facilities in Japan (Tsuboi & Lee, 2007) have also been reported. Therefore, in Japanese residential settings, effective interventions are necessary for maltreated children who display problematic behaviors.

In residential settings of North America, the Teaching-Family Model (TFM) has been widely implemented (Barth, Greeson, Zlotnik, & Chintapalli, 2011). Previous studies evaluating the effectiveness of TFM have shown decreasing criminal offense rates during treatment (Kirigin, Braukmann, Atwater, & Wolf, 1982), a decrease in physical restraint and seclusion (Jones & Timbers, 2003), decreasing numbers of diagnosed children, and an increase in the number of successful discharges to settings less restrictive than those at initial admission (Larzelere, Daly, Davis, Chmelka, & Handwerk, 2004; Larzelere, Dinges, Schmidt, Spellman, & Criste, 2001). Although TFM has recently been implemented in a few Japanese residential childcare facilities, the effects have not been evaluated.

TFM is a residential treatment approach based on the behavioral theory (Wolf et al., 1976), which applies operant conditioning techniques (Skinner, 1938). Here, appropriate behaviors increase when positive reinforcement such as praise and privileges is given, or problematic behaviors decrease when punishment such as time-out is given. In addition, TFM applies the social learning theory (Bandura, 1977), which premises that inappropriate behaviors among children occur because they have many opportunities to observe inappropriate behavior throughout their lives. Therefore, through positive reinforcement such as feedback and modeling, TFM trains for appropriate behaviors with social skills so that children become self-motivated to learn appropriate behaviors (Wolf et al., 1976).

Since the 1960s, TFM has been primarily used to care for children of all ages, ranging from early adolescence to young adulthood, with oppositional defiant disorder or conduct disorder in residential treatment settings (Daly & Dowd, 1992). Trained caregivers facilitate the acquisition of preventive and proactive social skills as target behaviors (e.g., following instructions, accepting criticism, anger control strategies) in children by fostering positive interactions with their caregivers (Jones & Timbers, 2003).

When caregivers intervene, many maltreated children typically react with noncompliance; therefore, in the present study, we focused on changes in noncompliance to investigate the outcomes of TFM in Japanese residential settings. Noncompliance is defined as refusal to act in accordance with a stated directive and/or refusal to follow rules (Owen, Slep, & Heyman, 2012). Although a certain level of noncompliance with regard to development of autonomy and assertiveness is observed in normal toddlers (Mahler, Pine, & Bergman, 1975), persistent noncompliance is considered to be a keystone behavior for the development of conduct disorder (McMahon & Forehand, 2005).

Oppositional behaviors in children showing noncompliance trigger a negative emotional response from the caregiver (Tsuboi & Sango, 2011b), which can lead to a coercive process of scolding or punishment (Patterson, 1982; Smith et al., 2014) in which the child's noncompliance and the caregiver's punitive measures escalate in a loop. Abusive parents tend to fall into coercive interactions when they react aggressively by yelling or threatening their children because of noncompliance (Patterson, 1976). Coercive interactions between children and their caregivers during childhood predict early adulthood violence mediated by coercive joining with friends at adolescence (van Ryzin & Dishion, 2013); therefore, coercive interaction is a high-risk phenomenon that can cause serious problematic behaviors. In addition, if a coercive process develops because of reinforcement of a caregiver's unethical and irresponsible response to a child's defiant behavior in residential facilities, then the risk of maltreatment increases (Nishizawa, 2009; Rosenthal, Motz, Edmonson, & Groze, 1991). In TFM, caregivers consistently intervene in the child's noncompliant behavior using a protocol based on the behavioral theory. This allows caregivers to consistently intervene in the problematic behaviors of children with oppositional and defiant tendencies without using harsh reprimands or excessive penalties, thereby aiding in the prevention of a coercive process. This consistent intervention by trained caregivers in daily care settings is considered superior to that in other residential programs from the perspective of preventing coercive interaction.

However, because TFM was developed in the West, it is necessary to consider the concept of cross-cultural generalizability (Bornstein, 2012) before adaptive implementation in Japan. Kazama, Hirabayashi, Karasawa, Tardif, and Olson (2013) demonstrated that, compared with American mothers, Japanese mothers more frequently use ambiguous parenting techniques

such as less verbal instruction. Their findings suggest that, in Japanese institutional settings, direct care staff members may use unclear instructions regarding a child's noncompliance, which is likely to increase problematic behaviors. Thus, it is necessary to verify whether TFM leads to positive improvements in Japanese residential settings.

Therefore, the objective of the present study was to validate the outcomes and cultural generalizability of TFM used for improving noncompliance and problematic behaviors in a residential childcare setting in Japan.

Method

Characteristics of Residential Childcare Facilities in Japan

Japanese residential childcare facilities is defined by the Child Welfare Low as providers of social care in residential settings with a public responsibility for children who have no parents or are in need of care due to family problems, such as maltreatment (JMHLW, 2017). In 2016, approximately 39,000 children stayed in 1200 facilities. In residential care homes, which is a major type of childcare setting, the average length of stay is 4.9 years (JMHLW, 2017). The following are the results of the investigation by the Japanese Ministry of Health, Labour, and Welfare (2012) of the percentage of children in each of the following types of facility: large scale facility (more than 20 children per unit; 42.3%); medium scale facility (13-19 children per unit; 16.0%); small scale facility (less than 12 children per unit; 22.3%); and small group care home (6-8 children per unit; 19.3 %).

Institution

A non-randomized interventional study was conducted at residential treatment facility "A," which is a large group care facility located in the southern central region of Japan with 50 children in residence at capacity. The residence is a two-story building; each floor is separated by sex and has a capacity of 25 children. Daily care is typically provided by three direct care staff members. The direct care staff is composed of 18 staff members and five clinical psychotherapists. Other personnel include a director, a deputy director, and a general manager who manages the direct care staff. Nine direct care staff members are assigned to each floor. The mean duration of experience of the residential direct care staff was 59.7 (*SD* = 47.6) months. Before implementing the TFM, facility A had been providing the typical type of Japanese residential treatment called structured daily care (e.g., following daily routines, disciplined living with clear boundaries, comprehensive rule settings), which aims to reduce problematic behaviors; however, specific theoretical-based care, including that based on behavioral theory and has the same background as the TFM, was not provided.

Participants

Forty-four children (age range: 6–18 years), who were staying at facility A, participated in the study from March 2014 to September 2015. We collected the participants' demographic information from case reports at admission (see Table 1). Participants were diagnosed using the International Statistical Classification of Diseases and Health Related Problems, 10th edition (World Health Organization, 1992) by a part-time psychiatrist. All participants were diagnosed with behavioral and emotional disorders with onset usually occurring in childhood and adolescence (F90–98), including F90 (attention-deficit hyperactivity disorders; 4.5%), F91 (conduct disorders; 45.5%), F93 (emotional disorders with onset specific to childhood; 20.5%), F94 (disorders of social functioning with onset specific to childhood and adolescence; 18.2%), F95 (tic disorders; 6.8%), and F98 (other behavioral and emotional disorders with onset usually occurring in childhood and adolescence; 4.5%). Twelve participants were taking psychotropic medication. The mean intelligence or developmental quotient of participants was 80.2 (*SD* = 10.6). We also collected scores from the Global Assessment of Functioning (GAF; American Psychiatric Association, 2000) scales as rated by the direct care staff at the start of the TFM (*M* = 61.4; *SD* = 9.6). More than 90% of the participants had a history of being maltreated before admission. None of the participants had criminal records or prior involvement with the courts.

Table 1

Characteristics and Demographic Data of the Participants

	n (%)	*M*	*SD*
Age (y)		13.6	2.6
Male	22 (50%)		
Female	22 (50%)		
IQ/DQ		80.2	10.6
Former residence			
With family	19 (43.2%)		
Residential childcare facility	20 (45.5%)		
Psychiatric hospital	5 (11.4%)		
Maltreatment history	43 (97.8%)		
Physical abuse	29 (65.9%)		
Emotional abuse	20 (45.5%)		
Sexual abuse	6 (13.6%)		
Neglect	21 (47.7%)		
ICD-10 diagnosis (F90–98)			
F90: Attention-deficit hyperactivity disorders	2 (4.5%)		
F91: Conduct disorders	20 (45.5%)		
F93: Emotional disorders with onset specific to childhood	9 (20.5%)		
F94: Disorders of social functioning with onset specific to childhood and adolescence	8 (18.2%)		
F95: Tic disorders	3 (6.8%)		
F98: Other behavioral and emotional disorders with onset usually occurring in childhood and adolescence	2 (4.5%)		
GAF		61.4	9.6

Note. N = 44. IQ = Intelligence Quotient as measured by the Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV; Wechsler, 2003); DQ = Developmental Quotient as measured by the Kyoto Scale of Psychological Development 2001 (Ikuzawa, Matsushita, & Nakase, 2002); ICD-10 = International Statistical Classification of Diseases and Health Related Problems, 10th edition; GAF = Global Assessment of Functioning.

Procedures

Implementation of the TFM

In March 2014, facility A implemented the TFM as part of a comprehensive treatment program (Dowd, Czyz, O'Kane, & Elofson, 1994) in a daily care setting. The TFM involved primarily married Western couples and group homes comprising of about eight children; however, facility A, which is a typical residential childcare system in Japan, has multiple direct care staff members who attend to about 20 children per unit in rotating shifts (Goodman, 2000). Although there are differences in the group setting between Japan and North America, the components of the TFM were implemented without cultural-related modification. Prior to the implementation of the TFM, all direct care staff members attended a 2-day TFM workshop run by a supervisor who had completed a TFM training course in the United States.

Intervention

Based on the TFM procedures, 18 direct care staff members intervened with the children's behaviors (see Figure 1). The direct care staff who intervened differed due to a shift work schedule. All staff were required to intervene with consistent TFM-based procedures and to record the interventions electronically with a description of the child's behavior, words that staff spoke to the child, and tangible reinforcer or punisher. The computerized records were then reported to the manager before being checked

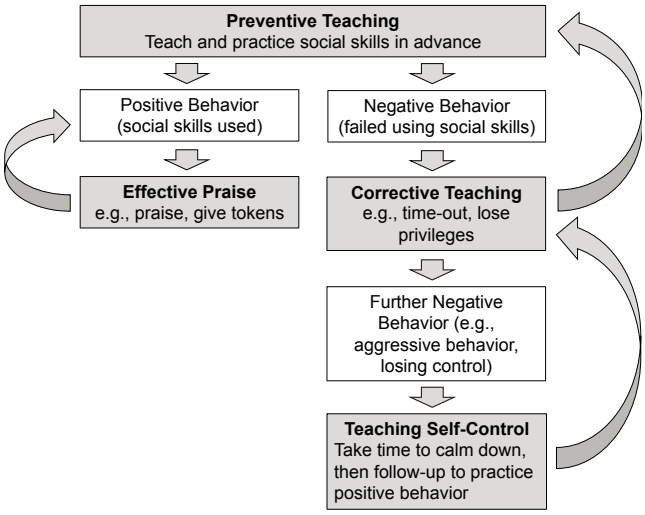

Figure 1. Flow chart of the Teaching-Family Model (TFM) intervention procedure.

by the supervisor. The electronically recorded interventions were checked daily, after which the supervisor would provide feedback to each staff based on the criteria of adequate intervention, including the accuracy of the description of a child's behavior, the fidelity of the intervention steps, and the appropriateness of giving reinforcers or punishers. The daily interventions were collated into a monthly report and the staff members also received consultation from the supervisor. On the premise of behavioral theory, the direct care staff members used positive reinforcement, such as praise or giving special privileges to establish the child's appropriate behaviors. In addition, based on the social learning theory, which has a premise that inappropriate behaviors are acquired by observation learning, modeling and the provision of rationales were used to promote intrinsic motivation within the child to learn appropriate behaviors in order for the child to internalize their behaviors.

The comprehensive TFM intervention in facility A was conducted as follows. First, at a neutral time, caregivers used *preventive teaching*, which taught and allowed the practice of social skills organized by a TFM provider (e.g., following instructions, accepting "No" for an answer, and anger control strategies; Dowd & Tierney, 2005). When a child displayed positive behaviors using these social skills, the caregiver would then use *effective praise*, which provides positive reinforcement, such as praise or tokens. Conversely, when a child displayed negative behaviors, caregivers used *corrective teaching* by applying punishment such as time-outs or the removal of privileges. When negative behaviors escalated after *corrective teaching*, caregivers used *teaching self-control*, which forces the child to take time to calm down before following-up and practicing positive behaviors. Examples of each TFM intervention component in relation to using the social skill of anger control strategies are given in Table 2.

Evaluation Methods

The outcomes of the TFM in improving noncompliance were assessed using count data for noncompliance as evaluated by direct care staff and changes in problematic behaviors as assessed by scores on the Japanese version of the Child Behavior Checklist (CBCL)/4-18 (Achenbach, 1991; Itani et al., 2001) at the following three time points: at the implementation of the TFM (Time 1) and at 6 months (Time 2) and 1 year after (Time 3) the implementation of the TFM. All participants stayed at facility A throughout the study period.

Noncompliance

Owen et al. (2012) defined noncompliance as not acting in

Table 2
Examples of the TFM Intervention Components Using Anger Control Strategies

Components	Examples of intervention
Preventive teaching	"When you get angry, I want you to use the social skill of anger control strategies. What you have to do is go to your room, take a deep breath, and count to 10."
Effective praise	"I saw that you went into your room and took a deep breath. Great! If you try to use anger control strategies like that, others may think you are so mature."
Corrective teaching	"You are yelling and punching the wall. Please go to your room and stay there for 10 munities." (After calming down) "Because you punched the wall, you cannot go outside for 1 hour."
Teaching self-control	"I instructed you to go to your room, but you are not following my instruction." (Take time to calm down). "Can you tell me what happened?"

accordance with a stated directive and/or not following the rules. However, noncompliance with the following *rules* in a residential group care setting was considered a problem involving the violation of social rules related to morality and social conventions (Turiel, 1983). On the other hand, noncompliance with following *the instructions* is considered an issue involving interaction with an individual caregiver (Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987). Therefore, we divided the concept of noncompliance into noncompliance with *the rules* and noncompliance with *following the instructions,* then separately examined each of these in detail. The direct care staff counted both types of noncompliance according to the definitions below.

Noncompliance with the rules

"Noncompliance with the rules" was defined as not using the social skills of *Following rules* or *Following written instructions* (Dowd & Tierney, 2005). The following rules were included in facility A's infraction categories: "noncompliance with punctuality", "disrespecting personal space", "aggressive behavior", "vandalism", "inappropriate use of personal items", "prohibition of sexual behavior", and "noncompliance with daily routine". These two social skills were introduced as part of preventive teaching.

Noncompliance with following the instructions

"Noncompliance with following the instructions" was defined as a situation in which a participant, after being found noncompliant with the rules described above and then instructed by the direct care staff to follow instructions based on the intervention procedure, refused to do so. Noncompliance with following the instructions was counted only after children violated the group rules provided to all children by the direct care staff. This procedure was followed to avoid inconsistencies in the instructions given arbitrarily by direct care staff due to the multiple shift work in a large-scale facility.

Intervention procedures and evaluation of noncompliance

The intervention procedures for the two types of noncompliant behaviors are shown in Figure 2. Prior to the interventions, participants were informed of the rules described above and allowed to practice following the instructions as *Preventive teaching* so that they knew how to behave appropriately when the staff provided them with such instructions.

We calculated the mean frequency of these two types of noncompliant behaviors per participant per day at each of the three time points. The direct care staff coded the noncompliant behaviors and then logged them electronically in a daily report. Regarding the intervention, the staff were instructed to describe the child's behavior objectively to avoid any arbitrary interpretations. Regarding the intervention and coding of *noncompliance with following the instructions*, the staff were trained as follows: 1) when children break the ground rules, instruct them based on their social skills (Dowd & Tierney, 2005) and 2) when children would not follow instructions, count the event as *noncompliance with following the instructions.* In daily meetings, the coding and interventions logged by the staff were checked, after which, they received feedback from the supervisor and took part in discussions until a consensus was reached. For the purposes of this study, daily noncompliance in the residential setting, but not the school setting, was covered.

CBCL

The CBCL is a standardized measure composed of 113 questions that evaluates behavioral problems in children (Achenbach, 1991; Itani et al., 2001). The CBCL consists of three summary scales (total problems, internalizing problems, and externalizing problems) and eight subscales (withdrawn/depressed, somatic complaints, anxious/

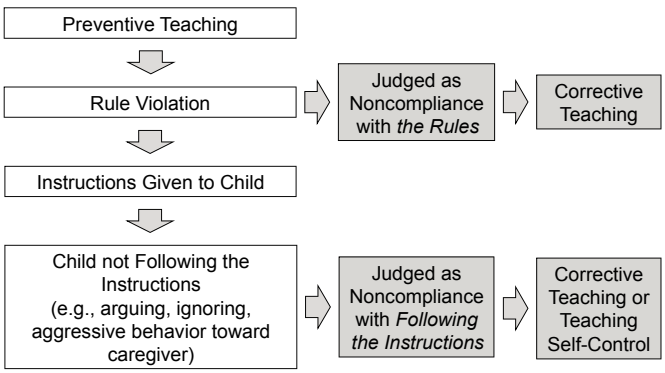

Figure 2. Intervention procedure for noncompliance.

depressed, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior). Responses are scored on the following 3-point Likert scale: 0 = *not true*, 1 = *somewhat or sometimes true*, and 2 = *very true or often true*. We used standardized CBCL T-scores for the total, internalizing, and externalizing problems (normal range ≤ 59, 60 ≤ borderline ≤ 63, 64 ≤ clinical range) and the eight subscales (normal range ≤ 66, 67 ≤ borderline ≤ 70, 71 ≤ clinical range).

The CBCL was used to evaluate problematic behaviors at the same three time points as those used to evaluate noncompliance, except for Time 1. Based on methods previously reported (Jones, Landsverk, & Roberts, 2007), CBCL evaluations at Time 1 were completed at 30 days after the implementation of the TFM because the staff needed sufficient time to observe participants after admission. Participants were evaluated by the same direct care staff member at all three time points. Although the evaluators were also involved in the interventions, to avoid evaluation bias, each participant was evaluated by direct care staff who were not in-charge of caring for the child and knew the child well.

Compliance with Ethical Standards

Informed consent was obtained from the guardians of all individual participants included in the study. The present study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the author's institutional ethical review board.

Statistical Analysis

The data were analyzed using SPSS for Windows (version 23.0; IBM, Armonk, NY). One-way repeated measures analysis of variance was used to analyze changes over time in noncompliance with the rules and CBCL T-scores. Because of the skewed distribution, the nonparametric Friedman test was used to analyze changes over time in noncompliance with following the instructions. The *p*-value of each post hoc test was adjusted using Bonferroni correction.

Results

Bivariate Correlations

Bivariate correlation analyses were conducted for both noncompliance and CBCL T-scores at Time 1 and for the participant's characteristics (age, IQ/DQ, GAF) using Spearman correlations. The results showed that noncompliance was negatively correlated with age and GAF, and positively correlated with externalizing problems. In addition, noncompliance with following the instructions was positively correlated with internalizing problems (see Table 3).

Changes in Noncompliance with the Rules

During the study period, 40 of the participants showed noncompliance with the rules (see Table 4). Significant differences were observed among the three time points ($F[2, 78] = 4.41$, $p = .015$, $\eta_p^2 = 0.102$). Based on the results of a post hoc test, a significant difference was found between Time 1 and Time 3 (Time 1 > Time 3; $p = .011$, Cohen's $d = 0.338$).

Changes in Noncompliance with Following the Instructions

Data regarding noncompliance with following the instructions were analyzed using the Friedman test (see Table 5). During the study period, 18 of the participants showed noncompliance with following the instructions. Significant differences were observed among the three time points ($df = 2$, $\chi^2 = 6.31$, $p = .043$). A significant difference was found between Time 1 and Time 3 based on the results of a post hoc test (Time 1 > Time 3; $z = -2.592$, $p = .029$, $r = .432$).

CBCL T−Scores Compared with Western Residential Treatment Facilities

The CBCL broadband scores at Time 1 in our study were in the same clinical range as those at admission from a residential treatment setting in North America (total problems = 74.4; internalizing problems = 69.4; externalizing problems = 75.8;

Table 3

Bivariate Correlations Among the Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	—														
2. IQ/DQ	-.18	—													
3. GAF	.18	.33*	—												
4. Noncompliance with the rules (Time 1)	-.33*	.13	-.39**	—											
5. Noncompliance with following the instructions (Time 1)	-.52**	.15	-.33*	.32*	—										
CBCL Scales (Time 1)															
6. Total problems	-.10	-.01	-.51**	.45**	.39**	—									
7. Internalizing problems	-.06	-.27	-.37*	.19	.36*	.68**	—								
8. Externalizing problems	-.26	.21	-.40**	.58**	.46**	.86**	.41**	—							
9. Withdrawn/depressed	.15	-.15	-.13	.08	.22	.46**	.68**	.24	—						
10. Somatic complaints	.36*	-.21	.15	-.05	-.28	.21	.34*	.05	.45**	—					
11. Anxious/depressed	-.06	-.15	-.33*	.16	.31*	.62**	.79**	.39**	.37*	.00	—				
12. Social problems	-.06	-.23	-.51**	.21	.38*	.79**	.55**	.59**	.35*	.03	.55**	—			
13. Thought problems	.14	-.08	-.33*	.10	.22	.45**	.38*	.20	.45**	.18	.22	.53**	—		
14. Attention problems	.01	-.18	-.46**	.25	.34*	.76**	.57**	.52**	.44**	.13	.51**	.86**	.61**	—	
15. Rule-breaking behavior	-.24	.19	-.29	.62**	.34*	.81**	.44**	.91**	.26	.15	.36*	.47**	.20	.46**	—
16. Aggressive behavior	-.23	.24	-.41**	.54**	.45**	.84**	.37*	.96**	.15	.03	.37*	.58**	.15	.51**	.85**

Note. $N = 44$.
$^{*}p < .05$. $^{**}p < .01$.

Table 4

Changes in Noncompliance with the Rules (Per Participant Per Day)

	Time 1		Time 2		Time 3				
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*	*p*	Post hoc test
Noncompliance with the rules	0.17	0.18	0.13	0.16	0.11	0.18	4.41(2,78)	.015*	Time 1 > Time 3*

Note. $N = 40$. Post hoc test: Bonferroni correction.
$^{*}p < .05$.

Table 5

Changes in Noncompliance with Following the Instructions (Per Participant Per Day)

	Time 1		Time 2		Time 3				
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	χ^2	*p*	Post hoc test
Noncompliance with following the instructions	0.12	0.20	0.12	0.28	0.04	0.07	6.31*	.043*	Time 1 > Time 3*

Note. $N = 18$. Post hoc test: Bonferroni correction.
$^{*}p < .05$.

Larzelere et al., 2001).

Changes in CBCL T−Scores

As shown in Table 6, significant differences were found in the CBCL T-scores for the total problems ($F[2, 86] = 361.20$, $p < .001$, $\eta_p^2 = 0.894$), internalizing problems ($F[2, 86] = 287.26$, $p < .001$, $\eta_p^2 = 0.870$), and externalizing problems ($F[2, 86] = 193.44$, $p < .001$, $\eta_p^2 = 0.818$). A post hoc test also identified a significant difference among the three time points ($p < .001$). On the subscales of the CBCL, significant decreases were also observed for those who were withdrawn/depressed ($p < .001$, $\eta_p^2 = 0.773$; Time 1 > Time 2 > Time 3), somatic complaints ($p = .021$, $\eta_p^2 = 0.086$; Time 1 > Time 3), anxious/depressed ($p < .001$, $\eta_p^2 = 0.638$; Time 1 > Time 2 > Time 3), social problems ($p < .001$, $\eta_p^2 = 0.798$; Time 1 > Time 2 > Time 3), thought problems ($p < .001$, $\eta_p^2 = 0.509$; Time 1 > Time 2 > Time 3), attention problems ($p < .001$, $\eta_p^2 = 0.798$; Time 1 > Time 2 > Time 3), rule-breaking behavior ($p < .001$, $\eta_p^2 = 0.683$; Time 1 > Time 2 > Time 3), and aggressive behavior ($p < .001$, $\eta_p^2 = 0.759$; Time 1 > Time 2 > Time 3).

Comparison to a Previous Study Conducted at Similar Facilities in Japan

The changes in CBCL scores over 1 year (Time 1 to Time 3) were analyzed using two-tailed paired t tests, and the calculated effect size r was compared with that from a previous study that followed changes at the same type of Japanese residential treatment facilities (Takada et al., 2010). That study used the Teacher's Report Form (TRF), which is similar to the CBCL, to evaluate changes as assessed by the direct care staff from October 2008 to October 2009. In the present study, the effect size r was calculated using t-statistics, degrees of freedom, and a corresponding two-tailed paired t test, and then compared with the results of Takada et al. (2010). The effect size of Takada et al. (2010) showed small or no effects regarding changes in the TRF (total problems: $r = .11$, $p = .075$; internalizing problems: $r = .07$, $p = .252$; externalizing problems: $r = .05$, $p = .414$). By contrast, the results of the present study showed a large effect on the changes in the CBCL T-scores (total problems: $r = .96$, $p < .001$; internalizing problems: $r = .97$, $p < .001$; externalizing problems: $r = .93$, $p < .001$).

Discussion

Correlations Among Participant's Demographic Characteristics and Noncompliance

The bivariate correlation analysis regarding the children's characteristics and the noncompliance and CBCL variables at

Table 6
Changes in CBCL T-Scores

	Time 1		Time 2		Time 3				
	M	*SD*	*M*	*SD*	*M*	*SD*	*F*	*p*	Post hoc test
Total problems	73.43	8.56	57.89	7.88	50.45	7.14	361.20	< .001***	Time 1 > Time 2 > Time 3***
Internalizing problems	71.05	5.54	55.68	6.28	49.95	4.09	287.26	< .001***	Time 1 > Time 2 > Time 3***
Externalizing problems	76.93	13.51	61.14	12.02	53.32	9.55	193.44	< .001***	Time 1 > Time 2 > Time 3***
Withdrawn/Depressed	72.11	6.82	57.57	6.77	53.20	3.85	146.60	< .001***	Time 1 > Time 2 > Time 3***
Somatic complaints	52.89	6.14	52.64	6.05	50.73	2.02	4.03	.021*	Time 1 > Time 3*
Anxious/Depressed	72.05	13.27	56.57	5.70	52.34	2.74	75.66	< .001***	Time 1 > Time 2 > Time 3***
Social problems	72.50	9.65	58.05	6.78	54.70	6.68	170.12	< .001***	Time 1 > Time 2 > Time 3**
Thought problems	63.02	10.96	53.55	6.97	50.55	1.75	44.66	< .001***	Time 1 > Time 2 > Time 3**
Attention problems	70.18	9.94	54.48	6.32	52.36	4.20	169.73	< .001***	Time 1 > Time 2 > Time 3**
Rule-breaking behavior	69.91	10.17	58.70	8.89	54.11	6.73	92.79	< .001***	Time 1 > Time 2 > Time 3**
Aggressive behavior	75.41	13.83	61.55	11.68	55.23	8.07	135.21	< .001***	Time 1 > Time 2 > Time 3***

Note. $N = 44$. Post hoc test: Bonferroni correction.
*$p < .05$. **$p < .01$. ***$p < .001$.

Time 1 showed that the two noncompliance variables were negatively correlated with age and GAF. The negative correlation found between noncompliance and age was consistent with the results of a previous study (Kalb & Loeber, 2003). In addition, noncompliance was positively correlated with externalizing problems. A significantly positive correlation was found between noncompliance with following the instructions and internalizing problems. These results suggest that noncompliance is strongly associated with a child's social, emotional, and behavioral functions.

Changes in Noncompliance

One year after the implementation of the TFM, significant decreases were seen in both noncompliance with the rules and noncompliance with following the instructions.

Noncompliance with the rules was thought to be a problem related to group morality and social conventions (Turiel, 1983). Maltreated children tend to exhibit a low level of morality and social conventions (Koenig, Cicchetti, & Rogosch, 2004), which means that these children often have fewer opportunities to learn interpersonal skills or social rules before admission and therefore, fail to internalize social norms.

In this intervention, when a rule violation occurred, direct care staff taught the child appropriate alternative behaviors using positive reinforcement, such as praise or giving privileges, with the rationale for each daily care situation. These consistent interventions, with modeling and the encouragement of both extrinsic and intrinsic motivations, seemed to increase appropriate behaviors and promote the sharing of these behaviors in a social group, which helped to internalize the behaviors in each child. This method of practicing appropriate behaviors with children seemed to positively affect their sense of group morality and social conventions in each situation. Therefore, noncompliance with the rules appeared to decrease over time.

Next, the decrease in noncompliance with following the instructions may have been affected by the positive relationships built between the direct care staff and children by acknowledging and praising appropriate behaviors. A previous study presented a developmental sequence in which a caregiver's punitive reaction to noncompliance, such as threats or corporal punishment, may have caused coercive interactions (Forehand & Wierson, 1993). In residential childcare settings in Japan, several incidents of maltreatment have been reported; a child's noncompliance with following the direct care staff's instructions triggered an abusive intervention (Kimura, 2013; Maeda & Ichikawa, 2013). By contrast, behavior therapy-based intervention programs, which have the same background as the TFM, represent a model in which the effects of intervention mediated by positive parenting reduce noncompliance (Martinez & Forgatch, 2001). The TFM emphasizes positive interactions such as praise or giving privileges for appropriate behavior, including compliance (Kirigin, 2001); therefore, the predictive and consistent procedures associated with the TFM build positive relationships (Wolf, Kirigin, Fixsen, Blase, & Braukmann, 1995) and reduce noncompliance with following the instructions.

Changes in CBCL T−Scores

Our results showed a decrease in the CBCL T-scores for all scales. These results are consistent with those from previous studies (Larzelere et al., 2001, 2004), which indicates that the TFM can help reduce problematic behaviors in residential childcare settings in Japan. Friman, Jones, Smith, Daly, and Larzelere (1997) reported that the TFM helps reduce problematic behaviors through building positive relationships between children and their caregivers. Our results indicate that the TFM might enable problematic behaviors to be corrected and improved as the result of preventative intervention of a child's noncompliance before it escalates into problematic behavior.

The acquisition of appropriate behaviors facilitated by the TFM may improve external problematic behaviors. Several studies have reported that maltreated children have poor social skills (Cohn, 1979; Darwish, Esquivel, Houtz, & Alfonso, 2001), which means they may have fewer opportunities to learn appropriate behaviors. In the TFM, each time a child shows an inappropriate external behavior, the caregiver's repeated interventions, such as teaching tangible alternative behaviors, provide a positive influence. Moreover, when alternative behaviors are seen in the TFM, the caregiver gives not only positive reinforcement such as praise and privileges, but also the rationale to internalize appropriate behaviors (as shown in Table 2: "If you try to use anger control strategies like that, others may think you are so mature"). Previous studies have

shown that teaching social skills as a tangible alterative behavior decreases problematic behaviors as the result of mastering problem solving (Christoff et al., 1985; Plienis et al., 1987; Tisdelle & Lawrence, 1988).The results of the present study indicate that the TFM contributes to an increase in appropriate behaviors that consequently improves problematic behaviors.

In addition, building positive relationships through acquiring appropriate behaviors may also reduce externalizing problems. Previous studies have reported that the development of positive relationships between caregivers and children helps reduce noncompliance (Gross et al., 2015) and that noncompliance is strongly correlated with aggressive behavior (Sukhodolsky, Cardona, and Martin, 2005), which suggests that a reduction in noncompliance may also help reduce the aggressive behavior included in externalizing problems. Therefore, building positive relationships between caregivers and children may lead to a reduction in externalizing problems such as aggressive behavior.

Moreover, decreases were also seen in the CBCL T-scores for internalizing problems. An association between internalizing symptoms in children and the punishment given by parents was previously reported by van der Sluis, van Steensel, and Bögels (2015). Therefore, the TFM may help improve internalizing problems such as anxiety or withdrawal as the result of fostering emotionally stable and consistent relationships instead of relying on excessive punishment.

On the other hand, although the CBCL T-subscale scores for somatic complaints and thought problems showed significant improvement, these differences were relatively small since both mean T-scores were within the normal range at Time 1. Previous studies conducted in residential care settings also show that the CBCL scores for somatic complaints and thought problems were lower than those on the other subscales (Larzelere et al., 2001; Tsuboi, 2005). These psychosomatic or psychotic thought problems seem to be categorized as needing medical or psychiatric treatment rather than residential childcare. Therefore, these tendencies may have affected the low scores seen on the two subscales.

Implications

Because of the increasing numbers of maltreated children in Japan, effective intervention strategies, such as those using the TFM, for improving noncompliance and problematic behaviors in residential treatment settings are needed. The present study evaluated the outcomes of the TFM for improving noncompliance and problematic behaviors in a residential childcare setting in Japan. The results suggest that the TFM may be a viable approach to childcare, especially in terms of preventing maltreatment and coercive processes in residential facilities in Japan. The implementation of TFM may also reduce the common power struggles among children and staff and prevent caregiver burnout in residential settings. To elucidate how the TFM affects the noncompliance trajectory of different classes, such as those stratified by age, IQ, conduct problem, and maltreatment history, future studies are needed with higher levels of evidence, such as comparisons with other treatment groups and larger sample sizes among multiple facilities. In addition, studies clarifying how the TFM affects stress levels or self-efficacy among direct care staff would be beneficial.

Limitations

Several limitations need to be considered. First, this study was conducted with a small sample size because it was the first evaluation of TFM implementation in Japan. A larger sample size that includes participants from other residential facilities will be needed in order to reliably evaluate its efficacy. Second, our study did not have a control group or a randomized design. Regarding the previous research on the TFM, no randomized controlled trials have been conducted because the TFM is implemented at the agency level, which makes participant randomization difficult. In addition, for research involving residential treatment, both a randomized design and the use of control group is difficult because of ethical concerns (Bettmann & Jasperson, 2009). Third, this study had a lack of follow-up evaluations. Larzelere et al. (2001) reported improvements achieved using TFM intervention were maintained at follow-up. In the present study, we could not evaluate participants after discharge. Further research in which participants are followed-up after discharge will be needed to confirm our findings. Fourth, regarding the CBCL evaluations, due to the restriction of having the evaluation scores recorded by someone who was close to the child, we cannot deny the possibility that the results were influenced by the overlap in duties between the

evaluator and the TFM intervener. Regarding noncompliance, to avoid arbitrary instructions, the workers were trained to intervene only when a child violated the residential rules. However, we cannot fully deny the possibility of bias because the interventions and coding were conducted by the same worker. Consistency within the coding of noncompliance could have been ensured by setting criteria for the interrater reliability. Finally, significant improvements were seen between noncompliance and CBCL T-scores based on the results showing that noncompliance and CBCL T-scores improved at 1 year and at 6 months, respectively, after the implementation of the TFM. These dissimilarities may have been caused by differences in the evaluation methods (self-report vs. count data) or duration (at a specific point of time vs. in 30 days) between the CBCL and noncompliance. To better elucidate the reasons behind the dissimilarities, further and more detailed verification of how the TFM affects the trajectory of improvements in noncompliance and behavioral problems are needed.

Conclusion

The purpose of this study was to assess outcomes of the TFM by investigating changes in noncompliance and problematic behaviors in a residential treatment facility in Japan. The results showed significant decreases in noncompliance and problematic behaviors after the implementation of the TFM. According to our results, the implementation of the TFM in Japanese residential childcare settings, where problematic behaviors frequently occur, may increase desirable behaviors and contribute to an improvement in problematic behavior among maltreated children through the building of positive relationships. Beyond the cultural differences between the style of parenting in Japan and the West, our findings suggest that the TFM is a promising intervention for maltreated children in large group residential care settings in Japan.

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Note

All procedures were performed in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Conflict of Interest

The authors declare they have no conflict of interest.

References

In English

Achenbach, T. M. (1991). *Manual for the child behavior checklist/4-18 and 1991 profile.* Burlington, VT: University of Vermont.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders, fourth edition, text revision: DSM-IV-TR.* Washington, DC: Author.

Bandura, A. (1977). *Social learning theory.* Englewood Cliffs, NJ: Prentice-Hall.

Barth, R. P., Greeson, J. K. P., Zlotnik, S. R., & Chintapalli, L. K. (2011). Evidence-based practice for youth in supervised out-of-home care: A framework for development, definition, and evaluation. *Journal of Evidence-Based Social Work, 8*(5), 501-528. doi:10.1080/15433710802683796

Bettmann, J. E., & Jasperson, R. A. (2009). Adolescents in residential and inpatient treatment: A review of the outcome literature. *Child and Youth Care Forum, 38*(4), 161-183. doi:10.1007/s10566-009-9073-y

Bornstein, M. H. (2012). Cultural approaches to parenting. *Parenting, 12*(2-3), 212-221.

Christoff, K. A., Scott, W. O. N., Kelley, M. L, Schlundt, D., Baer, G., & Kelly, J. A. (1985). Social skills and social problem-solving training for shy young adolescents. *Behavior Therapy, 16*(5), 468-477. doi:10.1016/S0005-7894(85)80025-3

Cohn, A. H. (1979). Effective treatment of child abuse and neglect. *Social Work, 24(*6), 513-519. doi:10.1093/SW/24.6.513

Daly, D. L., & Dowd, T. P. (1992). Characteristics of effective, harm-free environments for children in out-of-home care. *Child Welfare, 71*(6), 487-496.

Darwish, D., Esquivel, G. B., Houtz, J. C., & Alfonso, V. C. (2001). Play and social skills in maltreated and non-maltreated preschoolers during peer interactions. *Child Abuse and*

Neglect, 25(1), 13-31. doi:10.1016/S0145-2134(00)00228-3

Dowd, T., Czyz, D., O'Kane, S., & Elofson, A. (1994). *Effective skills for child-care workers.* Boys Town, NE: Boys Town Press.

Dowd, T., & Tierney, J. (2005). *Teaching social skills to youth: A step-by-step guide to 182 basic to complex skills plus helpful teaching techniques.* Boys Town, NE: Boys Town Press.

Fletcher, J. M. (2009). Childhood mistreatment and adolescent and young adult depression. *Social Science & Medicine, 68*(5), 799-806.

Forehand, R., & Wierson, M. (1993). The role of developmental factors in planning behavioral interventions for children: Disruptive behavior as an example. *Behavior Therapy, 24*(1), 117-141. doi:10.1016/S0005-7894(05)80259-X

Friman, P. C., Jones, M., Smith, G., Daly, D. L., & Larzelere, R. (1997). Decreasing disruptive behavior by adolescent boys in residential care by increasing their positive to negative interactional ratios. *Behavior Modification, 21*(4), 470-486.

Goodman, R. (2000). *Children of the Japanese state: the changing role of child protection institutions in contemporary Japan.* Oxford: Oxford University Press.

Gross, T. J., Hurley, K. D., Sullivan, J. J., Lambert, M. C., Van Ryzin, M. J., & Thompson, R. W. (2015). Program records as a source for program implementation assessment and youth outcomes predictors during residential care. *Children and Youth Services Review, 58*, 153-162. doi:10.1016/j.childyouth.2015.09.016

Jones, L., Landsverk, J., & Roberts, A. (2007). A comparison of two caregiving models in providing continuity of care for youth in residential care. *Child and Youth Care Forum, 36*(2–3), 99-109. doi:10.1007/s10566-007-9033-3

Jones, R. J., & Timbers, G. D. (2003). Minimizing the need for physical restraint and seclusion in residential youth care through skill-based treatment programming. *Families in Society, 84*(1), 21-29.

Kalb, L. M., & Loeber, R. (2003). Child disobedience and noncompliance: A review. *Pediatrics, 111*(3), 641-652.

Kirigin, K. A. (2001). The Teaching-Family Model: A replicable system of care. *Residential Treatment for Children & Youth, 18*(3), 99-110. doi:10.1300/J007v18n03_09

Kirigin, K. A, Braukmann, C. J., Atwater, J. D., & Wolf, M. M. (1982). An evaluation of teaching-family (achievement place) group homes for juvenile offenders. *Journal of Applied Behavior Analysis, 15*(1), 1-16. doi:10.1901/jaba.1982.15-1

Koenig, A. L., Cicchetti, D., & Rogosch, F. A. (2004). Moral development: The association between maltreatment and young children's prosocial behaviors and moral transgressions. *Social Development, 13*(1), 87-106. doi:10.1111/j.1467-9507.2004.00258.x

Kuczynski, L., Kochanska, G., Radke-Yarrow, M., & Girnius-Brown, O. (1987). A developmental interpretation of young children's noncompliance. *Developmental Psychology, 23*(6), 799-806. doi:10.1037/0012-1649.23.6.799

Larzelere, R. E., Daly, D. L., Davis, J. L., Chmelka, M. B., & Handwerk, M. L. (2004). Outcome evaluation of girls and boys town's family home program. *Education and Treatment of Children, 27*(2), 130-149.

Larzelere, R. E., Dinges, K., Schmidt, M. D., Spellman, D. F. &, & Criste, T. R. (2001). Outcomes of residential treatment: A study of the adolescent clients of girls and boys town. *Child & Youth Care Forum, 30*(3), 175-185.

Lewis, T. L., Kotch, J., Wiley, T. R., Litrownik, A. J., English, D. J., Thompson, R., & Dubowitz, H. (2011). Internalizing problems: A potential pathway from childhood maltreatment to adolescent smoking. *Journal of Adolescent Health, 48*(3), 247-252.

Mahler, M. S., Pine, F., & Bergman, A. (1975). *The psychological birth of the human infant: Symbiosis and individuation.* New York: Basic Books.

Martinez, C. R., & Forgatch, M. S. (2001). Preventing problems with boys' noncompliance: Effects of a parent training intervention for divorcing mothers. *Journal of Consulting and Clinical Psychology, 69*(3), 416-428.

McMahon, R. J., & Forehand, R. L. (2005). *Helping the noncompliant child: Family-based treatment for oppositional behavior (2nd ed.).* New York: Guilford Press.

Owen, D. J., Slep, A. M. S., & Heyman, R. E. (2012). The effect of praise, positive nonverbal response, reprimand, and negative nonverbal response on child compliance: A systematic review. *Clinical Child and Family Psychology Review, 15*(4), 364-385. doi:10.1007/s10567-012-0120-0

Patterson, G. R. (1976). The aggressive child: Victim and architect of a coercive system. *Behavior Modification and Families, 1,* 267-316.

Patterson, G. R. (1982). *Coercive family process.* Eugene, OR: Castilia.

Plienis, A. J., Hansen, D. J., Ford, F., Smith, S., Stark, L. J., & Kelly, J. A. (1987). Behavioral small group training to improve the social skills of emotionally-disordered adolescents. *Behavior Therapy, 18*(1), 17-32. doi:10.1016/S0005-7894(87)80048-5

Rosenthal, J. A., Motz, J. K., Edmonson, D. A., & Groze, V. (1991). A descriptive study of abuse and neglect in out-of-home-placement. *Child Abuse and Neglect, 15*(3), 249-260.

Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis.* New York: Appleton-Century-Crofts.

Smith, J. D., Dishion, T. J., Shaw, D. S., Wilson, M. N., Winter, C. C., & Patterson, G. R. (2014). Coercive family process and early-onset conduct problems from age 2 to school entry.

Development and Psychopathology, 26, 1-16. doi:10.1017/S0954579414000169

Sukhodolsky, D. G., Cardona, L., & Martin, A. (2005). Characterizing aggressive and noncompliant behaviors in a children's psychiatric inpatient setting. *Child Psychiatry and Human Development, 36*(2), 177-193. doi:10.1007/s10578-005-3494-0

Tisdelle, D. A., & Lawrence, J. S. S. (1988). Adolescent interpersonal problem-solving skill training: Social validation and generalization. *Behavior Therapy, 19*(2), 171-182. doi:10.1016/S0005-7894(88)80040-6

Turiel, E. (1983). The development of social knowledge: Morality and convention. *Cambridge,* UK: Cambridge University Press.

van der Sluis, C. M., van Steensel, F. J. A., & Bögels, S. M. (2015). Parenting and children's internalizing symptoms: How important are parents? *Journal of Child and Family Studies, 24*(12), 3652-3661. doi:10.1007/s10826-015-0174-y

Van Ryzin, M. J., & Dishion, T. J. (2013). From antisocial behavior to violence: A model for the amplifying role of coercive joining in adolescent friendships. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 54*(6), 661-669. doi:10.1111/jcpp.12017

Wechsler, D. (2003). *Wechsler intelligence scale for children, fourth edition (WISC-IV).* San Antonio, TX: The Psychological Corporation.

Wolf, M. M., Kirigin, K. A., Fixsen, D. L., Blase, K. A., & Braukmann, C. J. (1995). The teaching-family model: A case study in data-based program development and refinement (and dragon-wrestling). *Journal of Organizational Behavior Management, 15*, 11-68.

Wolf, M. M., Phillips, E. L., Fixsen, D. L., Braukmann, C. J., Kirigin, K. A., Willner, A. G., & Schumaker, J. B. (1976). Achievement place: The teaching-family model. *Child Care Quarterly, 5*(2), 92-103.

World Health Organization. (1992). *The ICD-10 classification of mental and behavioural disorders: Clinical descriptions and diagnostic guidelines.* Retrieved from Classifications on WHO website: http://who.int/classifications/icd/en/bluebook.pdf?ua=1

World Health Organization. (1999). *Report of the consultation on child abuse prevention WHO, Geneva, 29–31 March 1999* (WHO/HSC/PVI/99.1). Retrieved from WHO iris website: http://apps.who.int/iris/handle/10665/65900

In Others

Ikuzawa, M., Matsushita, Y., & Nakase, A. (2002). *Shin pan kei shiki hattatsu kensa 2001 jisshi tebikisho* [Kyoto Scale of Psychological Development 2001]. Kyoto, Japan: Kyoto International Social Welfare Exchange Centre.

Itani, T., Kanbayashi, Y., Nakata, Y., Kita, M., Fujii, H., Kuramoto, H., . . . Natori, H. (2001). Child Behavior Checklist/4-18 nihongo ban no kaihatsu [Standardization of the Japanese version of the Child Behavior Checklist/4-18]. *Psychiatria et Neurologia Paediatrica Japonica, 4*1(4), 243-252.

Japanese Child and Family Research Institute. (2016). *Nippon kodomo shiryou nenkan 2016* [Almanac of data on Japanese children 2016]. Tokyo: Chuoh Publishing.

Japanese Ministry of Health Labour and Welfare. (2012). *Shakaiteki yougo no sisetsu seibi joukyou chousa* [Survey on development of facilities in social care]. Retrieved from MHLW website: http://www.mhlw.go.jp/seisakunitsuite/bunya/kodomo/kodomo_kosodate/syakaiteki_yougo/dl/working6.pdf

Japanese Ministry of Health Labour and Welfare. (2017). *Shakaitekiyogo no suishin ni mukete* [The effort to promote child welfare]. Retrieved from MHLW website: http://www.mhlw.go.jp/file/06-Seisakujouhou-11900000-Koyoukintoujidoukateikyoku/0000172985.pdf

Kazama, M., Hirabayashi, H., Karasawa, M., Tardif, T., & Olson, S. (2013). Nippon no hahaoya no aimai na youiku taido to yonsai no kodomo no tasharikai: Nichibei hikaku kara no kentou [Ambiguous parenting and four-year-olds' understanding of others: A comparison between mothers in Japan and the U.S.]. *The Japanese Journal of Developmental Psychology, 24*(2), 126-138.

Kimura, M. (2013). Jidou hukushi sisetsu ni okeru marutoriitomento yobou kenshuu no kouka [Effect of the maltreatment preventive training in the children's home staff]. *Mejiro Journal of Humanities, 9*, 261-271.

Maeda, S., & Ichikawa, T. (2013). Jidou yougo shisetsu niokeru hutekisetsu na kakawari nikansuru saihatsu boushisaku kenntou iinnkai jissenn houkoku [Report on activity of preventive measures against recurrences committee about "inappropriate relations" in a residential institution for children]. *Bulletin of Hosen College of Childhood Education, 4*, 97-107.

Nishizawa, S. (2009). Shakaiteki yougo ni okeru hutekisetsu na youiku: Iwayuru shisetsunaigyakutai no zentaizou no haaku no kokoromi [An essay on the overview of "institutional abuse"]. *Japanese Journal of Child Abuse and Neglect, 11*(2), 145-153.

Taga, F., Yamaguchi, K., Karino, H., & Yoshida, Y. (2012). Jidou yougo shisetsu ni okeru bouryoku no jittai: Ei ken kankatsu ka no zenshisetsu chousa kara [Actual situations of violence at child protect institutions: An analysis of prefecture-wide survey]. *Bulletin of the Institute of Human Rights Studies,* (63), 99-124.

Takada. O., Hirata, M., Aoki, M., Tsuji, T., Nagano, M., Tsuboi, Y., Shiomi, M., & Miyai, K. (2010). *Joucho shougaiji*

tanki chiryoushisetsu niokeru kea no arikata nikansuru chousakenkyuu [Ways of caring in residential treatment facilities]. Tokyo: Foundation for Children's Future.

Tsuboi, H. (2005). Child Behavior Checklist/4-18 (CBCL) ni yoru higyakutaiji no koudou to joucho no tokuchou: Jido-uyougo sisetsu ni okeru chousa no kentou [Behavioral and emotional characteristics of abused children: Child Behavior Checklist/4-18 (CBCL)]. *The Japanese Journal of Educational Psychology, 53*(1), 110-121.

Tsuboi, H., & Lee, M. (2007). Gyakutai wo uketa kodomo no jikohyouka to tashahyouka ni yoru koudou to joucho no mondai [Behavioral and emotional characteristics of abused children: Cross-informant assessment]. *The Japanese Journal of Educational Psychology, 55*(3), 335-346.

Tsuboi, H., & Sango, M. (2011a). Jidou hukushi sisetsu no shokuin ni yoru kodomo no mondai koudou no konnansei no ninchi to taiou koudou no kankei [Relation between recognition of difficulties for children's problem behaviors by care-workers and care in child welfare institutions]. *Japanese Journal of Child Abuse and Neglect, 13*(1), 105-114.

Tsuboi, H., & Sango, M. (2011b). Jidou hukushi sisetsu ni okeru kodomo heno taiou ni kansuru wakate shokuin heno intabyuu no bunseki [Analysis of interview with young care workers at children's homes on their responses to children]. *Journal of Human Environmental Studies, 2*, 45-59.

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