

Supporting Japanese mothers of children with ADHD: Development of a culturally modified version of the New Forest Parent Training Programme

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Abstract

International practice guidelines recommend medication and behavioral intervention as evidenced based treatments for ADHD. Currently in Japan the availability of non-pharmacological interventions for ADHD is limited. We report the results of a pilot and a proof of concept study for a new behavioral intervention for Japanese mothers of children with ADHD. The pilot study delivered a standard six session behavioral intervention and two parent support sessions. Participants approved the group format, requested additional support to change parenting practices, and behavioral strategies targeting ADHD symptoms. For the proof of concept study the intervention was revised to include five sessions of pre-intervention support followed by six sessions of the New Forest Parent Training Programme (NFPP), an evidenced based intervention for ADHD. The revised intervention, NFPP-Japan, was associated with reductions in the children's ADHD symptoms and aggression, more effective parenting practices, and reduced parenting stress. The pilot and proof of concept studies indicate that it is possible to successfully modify western behavioral interventions for Japanese mothers and justify a randomized controlled trial evaluation of the NFPP-Japan, currently underway.

Key words: Attention Deficit Hyperactivity Disorder, parenting, Japan

Attention deficit hyperactivity disorder (ADHD) is a common neurodevelopmental disorder defined by elevated levels of inattention, hyperactivity and impulsivity (American Psychiatric Association, 2013). Symptoms show persistence over the lifespan, although levels of hyperactivity and impulsivity decline with age (Tarver, Daley & Sayal, 2014). Comorbidity with other psychiatric conditions is common (e.g., mood and anxiety disorders, Mayes et al., 2015; behavior disorders; Smalley et al., 2007) and children with ADHD show a number of functional impairments including deficits in social functioning (Mikami, Huang-Pollock, Pfiffner, McBurnett, & Hangai, 2007) and academic performance (Daley & Birchwood, 2010).

The impact of ADHD is not limited to the affected child. The disorder has been shown to negatively affect parents' emotional wellbeing, parenting practices and the parent-child relationship (Theule, Wiener, Tannock, & Jenkins, 2013). Parents of children with ADHD see themselves as having little or no control over their child's behavior, leading to reduced parenting efficacy and higher levels of stress in their parenting role (e.g., Theule et al., 2013). They are more likely to develop maladaptive strategies (e.g., directive, commanding and disapproval) to deal with their child's challenging behaviors (e.g., Chronis-Tuscano et al., 2008) and give fewer rewards for prosocial and compliant behavior than parents of typically developing children (Johnston, 1996).

Management of ADHD

International practice guidelines for the management of ADHD in children recommend approved medications and/or evidence-based behavioral therapy, including parent management training (e.g., American Academy of Child and Adolescent Psychiatry, AACAP, 2007; National Institute of Health and Clinical Excellence, UK NICE, 2008; American Academy of Pediatrics, AAP, 2011). The suggested order of treatment initiation varies across guidelines and with the child's age, symptom severity, presence of comorbidity or additional stressors, and family preferences.

Stimulant medications have been shown to be highly effective in reducing core symptoms of ADHD (Van der Oord, Prins, Oosterlaan, & Emmelkamp, 2008). There is also growing evidence for the efficacy of non-stimulant drugs (e.g., atomoxetine, guanfacine and extended-release clonidine, AAP, 2011). Despite the effectiveness of pharmacological treatments in the short-term management of ADHD symptoms, medication use is not always the only, or most appropriate, treatment strategy. Not all children demonstrate a favorable response to pharmacotherapy, side effects are common and there can be problems with compliance, i.e., low treatment adherence and medication discontinuation (Gajria et al., 2014), especially as children enter adolescence. Furthermore some families choose not to use or to delay medication use (Schatz, Fabiano, & Cunningham et al., 2015).

A number of meta-analyses have evaluated the effectiveness of behavioral interventions for ADHD. Conclusions vary depending on study inclusion criteria, raters

and outcome measures. We review the findings of three recent analyses varying in their study inclusion criteria and target outcomes (Fabiano et al., 2009; Sonuga-Barke et al., 2013; Daley et al., 2014). Including only behavioral treatments, but all study designs, irrespective of their level of control, Fabiano et al. (2009) concluded behavioral treatments improve the functioning of children with ADHD.

Sonuga-Barke et al. (2013) evaluated fifteen randomized controlled trials focusing on the core symptoms of ADHD. They found a moderate size effect for symptoms of ADHD based on reports of proximal informants (those closest to the therapeutic setting), but very small and non-significant effects when considering reports from probably blind informants. The researchers caution that the significant effects found for proximal informants might reflect the time and energy these participants invested in treatment and emphasize the importance of including blinded assessments in future studies.

Extending this meta-analysis to include domains commonly targeted in behavioral interventions, Daley et al. (2014) identified increased positive parenting, decreased negative parenting and reduced conduct problems based on blinded outcome measures. They also showed improvements in parenting self-concept, child ADHD symptoms and social and academic functioning based on the un-blinded reports of informants closest to the treatment setting.

Currently, the extant literature on behavioral interventions supports their use in the broader management of ADHD. Effects on ADHD symptoms are small, especially when probably blind ratings are considered. Effects on other areas of child functioning, parenting practices, and self-concept are larger. However, it is clear that additional well-controlled studies are needed with appropriately blinded assessments.

With few exceptions, the research reviewed in these and other meta-analyses has been carried out in North America, Europe, or other Western countries. The availability and efficacy of behavioral interventions for ADHD in other cultures is not clear.

ADHD in Japan

From the 1990's onward ADHD began to be recognized as a developmental disorder in Japan (Saito, 2005). The introduction of the Act for the Support of Persons with Developmental Disabilities (2005) and the addition of Special Support Education to the Fundamental Law of Education (2007) increased awareness of the need for support for children with developmental disorders, including ADHD, in the fields of medicine, social work and education.

Estimates of the prevalence of ADHD in Japan vary from 2.5% to 10.5%.

Kanabayashi, Nakata, Fujii, Kita, and Wada (1994) reported a prevalence rate of 7.7% amongst four to 12-year old children from a postal survey of 1,022 parents based on DSM-III-R symptoms of ADHD. Sakakibara (2007) obtained a prevalence estimate of 10.5% in a study of eight-year old children. A 2012 survey of schools by the Japanese

ministry of education, culture, sports, science and technology, reported 2.5% of six to 14-year old students have difficulties in school due to behavior problems consistent with symptoms of ADHD. These estimates are consistent with western reports which indicate considerable variation in the assessed prevalence of ADHD.

Japanese guidelines for the treatment of ADHD suggest combining parent guidance, collaborative support with the school, individual counseling with the child, and medication (Saito & Watabe, 2008). Compared with many Western countries, the availability of pharmacological and psychosocial interventions is limited in Japan. Concerta (Methylphenidate) and Strattera (Atomoxetine) are the only medications currently approved for the treatment of ADHD in children and adolescents. The nonstimulant Intuiv is under review for approval while the stimulant drug Vyvanse is undergoing PhaseII/III testing. Makino et al. (2015) recently surveyed prescribing practices in Japan towards the development of expert consensus on medication use.

Treatment approaches often favor medication use as psychosocial options are less widely available. There is currently a shortage of specialists trained in the provision of evidence-based psychosocial treatments in Japan (Yamashita et al., 2010). Parenting programs are often run as research studies through universities, by parent-groups, or non-profit organizations on a one off basis (Takayam, 2008). These programs are not typically specialized for the treatment of ADHD.

Parenting Training Programs in Japan

Two parent-training programs have been widely disseminated in Japan, the Hizen Parenting Skills Training (HPST; Ookuma & Ito, 2005), and the Seiken style parenting program (Iwasaka, Tanaka, & Itani, 2010). Both programs are used in the management of a range of behavior problems, including ADHD. The HPST was originally developed in Japan in 1991 for children with Autism Spectrum Disorder and intellectual disability (Ookuma & Ito, 2005). The components of the Seiken style parenting program were adopted from the Barkley (1995) and UCLA (Whiteham, 1998) parenting programs.

Designed for mothers of children with a range of neurodevelopmental disorders, the HPST is a 10 session program combining lectures on behavior management, individual consultation to identify target behaviors, small group discussions, and three large group sessions in which the children's video-recorded progress is reviewed. In a pre-post outcome study of 22 children with ADHD, Menda (2007) reported improvements in individually identified behavior problems, parenting practices and reductions in parenting stress and depression.

The Seiken style parenting program emphasizes the role of a positive parent-child relationship. The program includes the use of active role-plays, empathy, alliance, support, assurance, acceptance, and sharing experiences. It also emphasizes the use of positive attention and praise to increase appropriate and decrease inappropriate behavior in the child (Iwasaka et al., 2002). In a recent pre-post study comparing the

effectiveness of the program with children with ADHD (n = 13) and those with ADHD and comorbid ASD (n= 13), Tomizawa, Sato, and Yokoyama (2013) reported reduced maternal stress and improved child behavior, but not ADHD symptoms, in the ADHD only group.

Here we describe two studies evaluating the appropriateness and effectiveness of a group administered behavioral parent training programs in the management of ADHD in Japanese families. A small pilot study of an eight-week program incorporating education about ADHD, standard parent training components and sessions on cognitive restructuring and self-care skills. The pilot study was designed to assess Japanese mothers' reactions to, and acceptance of: (a) the proposed parent and child assessment measures, (b) group delivery of program content, and (c) the program content itself.

This is followed by a proof of concept study of an 11-week program in which an amended version of the New Forest Parenting Programme for ADHD (NFPP, Sonuga-Barke, Daley, Thompson, Laver-Bradbury, & Weeks, 2001; Thompson et al., 2009; Abikoff et al., 2015) was front loaded with additional psychoeducation on ADHD together with stress management and coping skills for parents (e.g., Treacy, Tripp, & Baird, 2005). We hypothesized that from pre to post treatment: (a) participating mothers' levels of stress and distress would decrease, (b) participating mothers' parenting skills (competence in parenting, positive parenting, and use of effective behavior management skills) would improve, and (c) the severity of the children's

ADHD symptoms and disruptive behaviors would decrease. Ethical approval for both studies was obtained from the OIST Graduate University Human Subjects Research Review Committee (Japan). Participating parents were volunteers and provided written consent.

Pilot study

Method

Participants

Five Japanese mothers took part in the study, one grandmother also participated along with her daughter. Inclusion criteria were at least one child in the family diagnosed with ADHD ($n = 1$), or with behavioral difficulties consistent with DSM-IV ADHD ($n = 4$), aged between six and 12 years. Two children were prescribed Concerta which they continued for the duration of the study.

Recruitment

Participants were recruited through a parent support group for mothers experiencing parenting difficulties. After explaining the purpose and content of the study, letters of invitation were given to all the members of the group. Interested parents contacted the first author and completed a telephone-screening interview to ensure their understanding of the study requirements and suitability for inclusion. Seven mothers

completed the screening interview, two were excluded as their children did not meet the study inclusion criteria.

Procedure

Mothers meet with the two group leaders, the first author and a research assistant with a Masters degree in Counseling Psychology, for two hours each week for 8 weeks. Each session focused on a separate topic (see Table 1). Content was delivered via lecture style presentations, role-plays, individual, small group, and whole group discussions. At the end of the program group members participated in a focus group and brief individual interviews, to provide feedback on the suitability of the program.

Table 1

Results

Participating mothers' feedback. Mothers who participated in the pilot study endorsed the need for more support on stress and cognitive restructuring, approved the use of a group format, preferred to limit group membership to mothers only to promote honest discussion, requested greater psycho-education to help reduce self-blame and to educate others. More specific strategies targeting the underlying causes of ADHD were also requested. Roleplay was endorsed as a useful method for helping mothers acquire key skills. Finally some mothers sought to also explore positive aspects of ADHD. See Table 2 for details.

Table 2

Group leader feedback. The group leaders noted additional issues relevant to the delivery of the intervention. They perceived a need to spend more time explaining the rationale for behavior management strategies that may not be consistent with Japanese culture and parenting practices, in particular the importance of using praise (see Matsumoto et al., 2007). They also identified the importance of teaching mothers skills to communicate with family members and health and educational professionals about their child's ADHD, and the need for cognitive restructuring to help parents identify how their thoughts impact their emotions and behaviors, consistent with Iwasaka (2002) and Ookuma (2002).

Proof of Concept Study

Method

Recruitment

Families were recruited through advertisements in two local newspapers, local medical clinics/hospitals, and following a public talk on ADHD that described the study.

Interested families completed the SNAP Parent Rating Scale (SNAP; Swanson, 1992), the High-Functioning Autism Spectrum Screening Questionnaire (ASSQ-R; Ehlers,

Gillberg & Wing, 1999) and a brief telephone screening interview. The interview confirmed the nature of the child's difficulties, ensured that mothers understood the study and its requirements, and assessed if a group-administered program was appropriate for the parent. Exclusion criteria were recent, i.e., within two months, participation in another parenting program and the absence of ADHD risk status in the child.

Participants

Twenty-two mothers were initially recruited to the study, 19 of whom enrolled in the program, three parents were unable to participate due to time constraints. The mothers ranged in age from 36 to 56 years ($M = 42.2$ years; $SD = 5.2$ years.), three (18%) were single parents. The children identified with ADHD ranged in age from six to 13 years ($M = 8.5$ years; $SD = 1.8$ years), 11 (64.7%) were boys. The majority of the children (76.5%) had a formal diagnosis of ADHD and the remainder scored above the point of clinical concern on a DSM IV ADHD rating scale (SNAP, Swanson, 1992). Eight children had a comorbid diagnosis of autism spectrum disorder. Two children (11.8%) were prescribed medication (Concerta and Strattera, respectively) for symptom management, and this was maintained throughout the trial and follow-up. Two mothers dropped out of the program after session three.

Measures

Child Behavior. The Swanson, Nolan & Pelham Scale (SNAP, Swanson, 1992) is a 26-item rating scale that assesses for the presence and severity of symptoms of DSM-IV ADHD and oppositional defiant disorder (ODD). Informants rate the presence of symptoms on a 4-point rating scale (0 = Not at All, 1 = Just a Little, 2 = Pretty Much, and 3 = Very Much). The measure was translated into Japanese for research in the Human Developmental Neurobiology Unit with the permission of the first author and in collaboration with the Japanese National Institute of Mental Health. It has excellent psychometric properties (Inoue et al., 2014). For the current study scores were summed across the 18 ADHD symptoms to provide a total ADHD severity score. Cronbach's alpha for this measure in this sample was $\alpha = 0.823$ for ADHD and $\alpha = 0.823$ for ODD. The Autism Spectrum Screening Questionnaire (ASSQ-R; Ehlers et al., 1999) is a 27-item screening measure that assesses four areas of functioning: (a) Reciprocal social interaction, (b) Communication, (c) Restricted/Stereotyped/Repetitive repertoire of interests, and (d) Motor clumsiness and other associated symptoms. Parents rate the presence of each item on a 3-point scale (0 = No, 1 = Somewhat, 2 = Yes). A cut off score of 19 is indicative of ASD (Ehler et al., 1999). The Japanese translation of the high functioning version of this measure was used in the current study. It has acceptable psychometric properties (Ito et al., 2014). The Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000) is a 113 item Broadband behavior rating scale that assesses parents' perceptions of their child's behavior. It includes eight Problem

Behavior scales: withdrawal, somatic complaints, anxious/depressed, social problems, thought problems, attention problems, delinquent behavior and aggressive behavior. Items are rated on a 3-point scale (0 = No Problem, 1 = Sometimes, and 3 = Always). Individual problem scale scores are available as well as composite internalizing and externalizing behavior scores and a total problem score. The Japanese version of the measure reports good psychometric properties (Kawauchi et al., 2011). Cronbach's alpha for the Attention Problem scale in this sample was $\alpha = 0.553$ when item 45 was removed, for Delinquent Behavior $\alpha = 0.204$ and for Aggressive Behavior $\alpha = 0.847$. Due to poor internal consistency only the Aggressive Behavior scale was used in the analyses.

Mothers Functioning. The General Health Questionnaire 30 (GHQ 30; Goldberg, 1978) is a self-report screening measure of psychiatric symptomatology. It assesses functioning across 6 areas: general health, somatic symptoms, insomnia, social function, anxiety/emotional distress and depression. Each item is scored on a 4-point scale (0 = Not at all, 1 = No more than usual, 2 = Rather more than usual, and 3 = Much more than usual). The Japanese translation of the GHQ 30 (Nakagawa & Daibou, 1985) has been widely used in Japan and is reported to have good reliability (Shima, 1996) and validity (Fukunishi, 1990). Cronbach's alpha for this measure in this sample was $\alpha = 0.95$. The Parent Stress Index (PSI; Abidin, 1983) is a 78-item self-report questionnaire measuring levels of perceived stress in the parent-child dyad. The PSI yields Child and Parent

Domain scores and a Total Stress score. Respondents use a 5-point scale to indicate their level of agreement with each item from 1=Strongly disagree to 5=Strongly agree. The Japanese version of the measure has good psychometric properties (Narama et al., 1999). The Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993) is a 30 item self-report questionnaire designed to assess parenting styles/discipline practices. Parents indicate on a 7-point rating scale their most likely response to a given parenting/discipline situation. The Japanese version of the Parenting Scale (Itani, 2010) has a two factor solution and shows good internal consistency for Over-Reactivity ($\alpha = 0.816$) and low to moderate consistency for Laxness ($\alpha = 0.666$). Cronbach's alpha for this measure in this sample was $\alpha = 0.87$ for Over-Reactivity and $\alpha = 0.65$ for Laxness when question 8 was removed. The Parental Locus of Control scale: (PLOC; Campis, Lyman, & Prentice-Dunn, 1986) is 47-item measure used to assess parent's perception of their internal locus of control and their child's external power. Factor analysis has identified five subscales: parental efficacy, responsibility, child control of parents' life, parental belief in fate/chance, and parental control of child's behavior. For the current study the PLOC was translated into Japanese by the first author and independently back-translated by bilingual members of the research team. This measure was withdrawn from the analyses due to unacceptable levels of internal consistency with the current sample. A Demographic Questionnaire was developed for the study to record

details of the child's living situation, school environment, medical history, educational support and behavioral difficulties.

Procedure

Program Description and Development. Feedback from mothers in the pilot study, together with the observations of the group leaders, were used in revising the parent program for a pre-post proof of concept study. Key changes were: replacement of the general parenting strategy sessions with sessions from the NFPP (McCann et al., 2014) specifically designed for parents of children with ADHD; increasing the number of sessions designed to address mothers psychological well-being, and moving these sessions to the beginning of the program. The total number of sessions was increased from eight to 11.

Specific modifications were the addition of sessions on problem solving skills and communication skills and expansion of the information provided on the nature and causes of ADHD. The four general parenting skills sessions from the pilot study were replaced with the six-session group NFPP program with the permission and support of the program developers.

Thus the final 11-session program included an orientation to the program and psycho-education about ADHD, four sessions devoted to enhancing mothers psychological functioning (sessions 2-5) and the six sessions of behavior management

from the NFPP (sessions 6-11). We refer to this extended program as NFPP-Japan, a summary of session content is presented in Table 3.

Table 3

The original NFPP was developed as a specialized intervention for preschool children aimed at reducing the core symptoms of ADHD. It has been used successfully in three randomized controlled trials (Sonuga-Barke et al., 2001; Thompson et al., 2009; Abikoff et al., 2015) The program focuses on improving the quality of the parent-child relationship to increase positive parenting. It utilizes standard behavioral approaches to target non-compliance and oppositional behavior. In targeting ADHD symptoms the program addresses the development of the child's self-regulatory skills through an iterative process of having parents assess the child's current abilities and plan for extending their skills through the provision of support and identification of new goals. This process is consistent with the expressed needs of Japanese mothers in the pilot study who requested training to address their children's behavioral deficits.

For use in Japan the NFPP Trainers Manual was translated into Japanese and back translated into English for verification by the program developers. The first author completed the NFPP training in the UK, with the program developers, before beginning the study and was supervised by them throughout the trial. Program content was modified to include additional explanation of the behavior management strategies

taught in the NFPP. In particular, it was necessary to spend additional time describing the importance of, and rationale for, using praise to change children's behavior. It was also necessary to address participating mother's self-doubt regarding their parenting abilities.

Running of the Program. The questionnaires and a consent form were sent out for completion prior to beginning the 11-week parenting program. All group sessions were two hours in duration and were lead by the first author and a Masters level research assistant.

Three separate groups were run with between four and seven mothers per group. If mothers were unable to attend a group session they were required to attend an individual catch-up session with one of the group leaders prior to the next group session. Following the last group session and three months later mothers were completed the questionnaires for the second and third times.

At the end of the program two research assistants, with Masters degrees in Psychology, familiar with the program content and structure, ran focus groups to obtain feedback on the program content and delivery. To encourage honest feed-back the first author did not attend those groups. The content of the meetings was audio-taped with the written consent of the mothers. If unable to attend a focus group mothers were individually interviewed over the telephone. Twelve mothers attended focus groups and five were interviewed by telephone.

Results

The effects of the 11-week program on child behavior, maternal mental health and parenting skills were analyzed with a series of repeated measures ANOVAs, with assessment time as the repeated measure. Table 4 presents descriptive statistics for the pre-, post- and three-month follow-up measures.

Table 4

Child Behavior

Mother's reports of their children's behavior indicated ADHD symptom severity decreased significantly from pre-treatment to post-treatment to three-month follow up as demonstrated by reduced scores on the SNAP $F(2,32) = 3.35, p = 0.048$. Ratings on the Attention Problems scale of the CBCL also decreased over time, but were not submitted to analysis due to the low internal consistency of the scale in this sample.

Ratings on the Aggressive Behavior scale of the CBCL showed a significant decrease from pre-treatment to follow-up $F(1,16) = 4.25, p = 0.023$. Oppositional Defiant Disorder scores on the SNAP also declined, but the change was not significant.

Mother's Emotional Functioning

Mothers' self-reports of their Child Domain and Total stress scores decreased significantly from pre- to post-intervention [Child Domain stress $F(2,32) = 20.58$, $p < 0.001$; Total stress $F(2, 32) = 7.16$ $p = 0.003$]. However Child domain stress scores rebounded significantly once the intervention finished, although not to pre-intervention levels. Baseline and follow-up Child Domain and Total stress levels were not significantly different. Parent Domain stress levels did not change significantly over the intervention or follow-up period. Mother's GHQ scores showed a trend towards improved health, but the effect was not significant.

Parenting Style

Mother's self-reported Over-reactivity in response to child misbehavior decreased significantly from pre-intervention to follow-up [$F(2, 26) = 7.02$, $p = 0.004$]. Post hoc analyses showed mothers' Over-reactivity scores decreased significantly from pre- to post-intervention and this reduction was maintained at three-month follow-up. Laxness scores improved significantly from the pre-treatment to follow-up [$F(1, 14) = 12.34$, $p = 0.003$].

Focus group feedback

Focus group feedback indicated a high level of satisfaction with the experience of participating in the NFPP-Japan intervention. Mothers identified positive changes in their own behavior, in particular a decrease in their over-reactivity to their child's

difficulties and subsequent improvements in the parent-child relationship. They also provided feedback on aspects of the program that were challenging for them.

Mothers identified a number of the strategies taught in the program as new to them and initially challenging to implement. These included the use of quiet time and time out, modulating tone of voice when upset, the use of pronouns, e.g., we and us, and increasing their use of praise. These strategies were identified by mothers as not common to Japanese parenting practices and requiring additional explanation and rehearsal to increase their comfort with using them.

The provision of a safe environment to discuss difficulties and practice new skills was seen as an important element of the program. Mothers acknowledged the importance of psycho-education about ADHD and communication skills training to help them explain their child's difficulties to others and to provide them with the rationale for changes in their own parenting practices.

Discussion

The current pilot and proof-of-concept studies begin to address the need for additional effective psychosocial interventions for ADHD in Japan. The pilot study was undertaken to establish if a group administered parenting program was acceptable in a Japanese context, exploring the appropriateness of the group based delivery and the

program content. While other group programs are used in Japan, the extent to which Japanese mothers are comfortable with this format or Western inspired program content is unclear. The findings from the pilot study support the group format and content, albeit with some modifications.

Mothers' in the pilot study identified a clear need for ADHD specific program content, in particular detailed information about the causes of ADHD and targeted behavioral strategies. Widespread recognition of ADHD in Japan is recent compared with Western countries and this is reflected in the availability of up-to-date and assessable information and services. Although parenting books about ADHD, in Japanese, are increasingly available, the information they contain is not always a close match with parents' needs, e.g., psycho-education about ADHD and guidance on tailoring behavioral strategies for children with ADHD. Furthermore, some behavioral strategies, commonly employed in Western culture, are not consistent with Japanese parenting practices, further increasing the need for detailed explanation and tailored guidance (Matsumoto et al., 2007).

While there continues to be unease with public acknowledgement of mental health difficulties in Japan, the group format was embraced by the participating mothers. Those taking part in the pilot study were seeking to interact with other mothers who could understand and share the challenges of parenting a child with ADHD. Some parents acknowledged the group as one of their first opportunities to safely express and

share their feelings. It seems likely the group format helped parents to normalize their feelings of inadequacy in their parenting role as suggested by Sanders, Markie-Dadds, and Turner (2003). The experiences of these parents reinforce the importance of the group format focusing on a single target disorder, ADHD, as well as clear group rules for sharing and protecting information disclosed in group sessions.

Consistent with their positive group experiences, mothers in the pilot study indicated a preference for a group over an individual program, with the proviso that it be a “mothers only” group. The latter condition may reflect culturally related beliefs about gender roles. While more Japanese men are participating in housework and parenting, care of the home and children remains primarily the responsibility of mothers. Related to this, group members suggested that Japanese mothers and fathers differ in their perceptions of the severity and importance of the difficulties experienced by children with ADHD, and their willingness to communicate about, and address, these issues. However, it is important to acknowledge this as the preference of the pilot study parents and it may not reflect the views of the wider population of mothers of children with ADHD.

The content and duration of the proof-of-concept study reflects the recommendations of the pilot study participants and the experiences of the group leaders. This included the introduction of a parenting program developed specifically

for ADHD together with the addition of extra sessions to address maternal psychological health generally and the stresses of parenting a child with ADHD.

The results of the proof-of-concept study are promising. Mothers' ratings of their children's ADHD symptoms and aggressive behavior decreased significantly from pre-treatment to the three-month follow-up assessment. While acknowledging the potential bias of using raters who participated in the training program (Daley et al., 2014) these findings indicate, at the very least, participating mothers perceived their children's ADHD symptoms and aggressive behavior as less problematic following the intervention. Given the known negative effects of ADHD on the parent-child relationship, parent perceived changes in behavior are an important outcome with respect to improving interactions between parent and child. The continued improvement in children's perceived behavior from post-treatment to three-month follow-up suggests these changes are stable, at least in the short term.

Consistent with the perceived reduction in ADHD symptoms and aggressive behavior, mothers reported a decrease in both Child Domain and Total stress scores from pre- to post-treatment. This effect was not maintained over the three-month follow-up period, and Child Domain stress increased significantly, although not to the pre-treatment levels. Given reports of continued improvement in ADHD symptoms and aggressive behavior, we question why mothers' post-treatment stress levels were not maintained or further improved during the follow-up period. The most obvious

explanation is that attending the group was an important factor in reducing mother's stress, both the opportunity to discuss their children's difficulties and the support they received from the group leaders and other participating mothers. Attending the group may have served to normalize the challenges they face, and to ensure that they continued to engage in appropriate self-care and cognitive restructuring activities. Following completion of the program, motivation and opportunity to challenge unhelpful thoughts may have been reduced together with perceived and actual support for dealing with their child's behavior and the reactions of others to it. These results raise important issues regarding the maintenance of treatment gains either through booster sessions or self-help formats (Daley & O'Brien, 2013).

Mother's self-report of their actual parenting behaviors indicate these changed in response to the program, with continued improvement over time. Specifically, their Over-reactivity scores on the Parenting Scale declined. Providing parents with specific skills for managing their child's behavior, together with the rationale behind these skills likely decreased their tendency to overreact to child misbehavior. Decreased levels of stress together with an understanding of the role their thoughts or perceptions play in their behavior may have helped mothers reflect before reacting to their children. We would like to think that this reduction in Over-reactivity also contributed to the continued improvement in child behavior. Importantly this reduction in Over-reactivity was maintained despite the increases in Child Domain stress following the conclusion

of the parenting program. Perceived improvements in child behavior may have served to reinforce this change in parenting style. In future studies it will be important to evaluate whether this translates into positive changes in the parent-child relationship. Changes in parenting behavior were evaluated through self-report only. Future studies will need to incorporate a more objective measure of parent behavior to substantiate self-reported changes (Daley et al., 2014). As with their reports of their children's behavior, these reports may be influenced by the mothers' expectancy of change and/or the effort they made to change.

The current program front loaded the NFPP program with strategies designed to prepare mothers to fully engage in the NFPP sessions and to reduce the stress associated with parenting a child with ADHD. The focus group comments suggest this was an important element of the overall intervention. Mothers' responses indicated these five sessions increased their knowledge about ADHD, improved awareness of their own emotions and behaviors, changed their perception of their child's behaviors, and reduced stress levels. The current study design does not allow us to fully separate the contribution of these sessions to the overall changes in perception and behavior, but for Japanese mothers we see these sessions as an important component of the overall training program.

Clearly improvements were not found for all of the outcomes assessed, although this proof of concept study may have been underpowered. The reasons for this need to

be investigated in future studies. It will also be important to identify more reliable measures for assessing mother's locus of control and self-efficacy. However, the findings from both the pilot study and the proof-of-concept study are promising and we argue for continued research with the enhanced NFPP with Japanese parents. Feedback from the parents in the present studies will be important in the development of future studies.

Despite the positive results from the pre-post study it is important to consider the limitations of both the pilot and proof-of-concept studies. As noted above, reports of improvements in ADHD symptoms and aggressive behavior are from the most proximal informants, i.e., participating mothers. We cannot be certain if child behavior changed, or if what is being reported is a change in mothers' perceptions of, or attitudes toward, their children's behavior. Objective evaluations of both child behavior and the parent-child relationship need to be incorporated into future studies with NFPP-Japan. The lack of a control group also limits the findings of this study. We assume the reported changes are the result of mothers' participation in the enhanced NFPP. A randomized control trial, currently underway, is an important next step.

The availability of appropriate treatment outcome measures is currently limited in Japan. Most available measures were developed in English against a Western cultural background. Although a number of these measures have been translated into Japanese, few, if any, studies have evaluated their appropriateness within Japanese culture. We

therefore need to question the meaning of significant changes in scores on these measures overtime. This requires additional research with typically developing families alongside continued efforts to evaluate parenting programs for families of children with ADHD.

Together with the NFPP program developers we recognize that additional changes to NFPP-Japan may be required to fully adapt it to a Japanese cultural context, while maintaining those elements of the program essential to its effectiveness. Certainly for our participating mothers, the program elements presenting the greatest challenge reflect cultural differences in parenting practices. Continued discussion with the program developers and other research groups using the program in other languages and cultures will be essential.

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Table 1

Pilot Study Session Content

Session	Content
1	Orientation to the parenting program; Introduction to ADHD
2	Positive attending to appropriate behavior; Classifying behaviors as positive, negative and unacceptable
3	Reducing annoying behaviors (ignoring); Effective communication
4	Using praise; Using behavior charts
5	Limit setting; Token systems to increase positive behavior; Time out
6	Cognitive restructuring
7	Self-care; Stress management
8	Review session

Table 2

Pilot Study: Mothers Qualitative Feedback

Theme	Parent summary
The need for stress reduction	Mothers especially appreciated the sessions on stress reduction and cognitive restructuring to assist for parents to look after themselves.
The importance of the group format	Participating mothers indicated preference for a group-based program over an individual program, citing the value of sharing their experiences with mothers facing similar challenges.
The need for a sanctuary for mothers	Participants expressed a preference for a program for mothers only, citing greater comfort with sharing with mothers.
Enhancing understanding and reducing blame	Mothers expressed a need for detailed information regarding the nature and causes of ADHD to reduce self-blame and blaming the child.
The desire to be able to educate others about ADHD	Mothers expressed a need to understand ADHD to explain the child's behavior to other adults.
Specific rather than generic skills	Participants requested specific strategies for dealing with symptoms of ADHD rather than more general behavior management skills.
The benefit of role play	Mothers emphasized the benefits of practicing communication through role plays.
Positive aspects of ADHD	Parents expressed a desire to know more about positive aspects of ADHD.

Table 3

Proof of Concept Study Session Content

Session	Content	General Goals
1	Orientation: getting to know each other, establishing group rules, overview of program and timetable. Psycho-education about ADHD (1)	Enhancement of mother's Psychological-well being. Enhancement of mother's readiness to engage with behavioral strategies
2	Stress Management: stress in general, parent's stress, ADHD and parental stress, strategies for reducing stress	
3	Cognitive Restructuring: thoughts-emotions-behavior, distorted thoughts, constructive thinking	
4	Problem Solving: steps for finding a better solution	
5	Effective Communication: knowing your own communication styles, discussion about assertiveness, steps for a successful communication	
6	Psycho-education about ADHD (2) NFPP 1: Listening skills and helping the child to listen, eye contact, recruiting child's attention, praise, ear-shooting, introduction of scaffolding, using a diary	Reduction of ADHD symptoms
7	NFPP 2: more on scaffolding, introduction of concept of proximal development, giving clear messages, using countdowns and delay fading, avoiding confrontation and arguments, giving choices, keep it simple, using a timer, alarm and clock, adopting a constant routine	Improvement of mothers' child management skills
8	NFPP 3: importance of and using play, use of "we" and tone of voice, setting house rules, setting clear goals and expectations, warning	Improvement of the mother-child relationship
9	NFPP 4: temper tantrums and distraction, anticipation, time out and quiet time, keeping calm, cueing in	
10	NFPP 4: using behavior charts, reviewing ADHD, reward and punishment	
11	NFPP 5: talking about feelings, sensory issues, relaxing time, social story, mindfulness, reviewing the previous sessions and discussion of hard to understand and difficult to implement strategies	

Table 4

Means and Standard Deviations for Mother and Child Outcome Measures

Measure	Mean (Standard deviation)		
	Pre-	Post-	Follow-up
Child			
SNAP ADHD	28.88 (8.92)	26.88 (10.58)	25.12 (12.53)
CBCL Inattention	70.59 (6.33)	68.82 (8.75)	66.06 (7.64)
SNAP ODD	7.24 (4.12)	7.18 (4.54)	6.12 (4.92)
CBCL Delinquent Behavior	57.47 (7.91)	59.35 (8.16)	58.12 (7.15)
CBCL Aggressive Behavior	63.24 (8.30)	61.35 (10.18)	59.77 (10.00)
Mother			
GHQ 30 General Health	6.73 (6.57)	5.73 (5.26)	4.18 (4.60)
Parenting Stress Index			
Child Domain	113.82 (20.06)	97.71 (18.30)	106.41 (20.53)
Parent Domain	109.24 (15.47)	106.88 (17.56)	104.53 (16.55)
Total Stress	223.06 (32.69)	204.59 (32.81)	210.88 (34.25)
Parenting Scale			
Over-reactivity	43.14 (10.24)	34.86 (9.40)	34.64 (11.98)
Laxness	19.33 (5.54)	18.07 (6.85)	17.13 (5.51)
Parent Locus of Control			
Parental efficacy	23.59 (4.12)	22.29 (3.75)	22.41 (3.83)
Parent's responsibility	32.33 (4.37)	32.60 (5.03)	31.53 (4.85)
Parent control of child's behavior	27.63 (4.47)	28.81 (4.34)	29.13 (4.10)
Child control of parent's life	18.56 (3.60)	18.44 (4.53)	17.44 (3.90)