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研究課題名(和文) The Power of Parent Supports: The Effectiveness of Caregiver Training in Improving Social and Communication Skills of Children with Autism Spectrum Disorders

研究課題名(英文) The Power of Parent Supports: The Effectiveness of Caregiver Training in Improving Social and Communication Skills of Children with Autism Spectrum Disorders

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研究成果の概要(和文)：科学研究費補助金を受けている期間中、一事例の実験研究を実施した。PIは研究の結果を3つの国際会議で発表した。実験的研究の実施に加えて、PIはASD障害およびエビデンスに基づいた実践に関する情報を提供するため、親に向けたマニュアルを作成した。このマニュアルは、日本国内にいるASDを持つ子供の親や家族のために作成され、さらに日本語、中国語、英語、スペイン語の4つの言語に翻訳された。また、このマニュアルは大学のホームページにアップロードされ、無料でダウンロードできる。

研究成果の概要(英文)：During the period of funding, one single-case experimental research study was conducted. The PI presented the study results at three different international conferences (i.e., the 19th Council for Exceptional Children Division on Autism and Developmental Disabilities, the Korean Association for Emotional and Behavior Disorder Conference, Pusan, South Korea, the 43rd Association for Behavior Analysis International Annual Convention). In addition to conducting the experimental study, the PI developed a parent manual that provides guidance on the disability and evidence-based practices for ASD. This manual is designed for parents and families of children with ASD in Japan and translated into four different languages including Japanese, Chinese, English, and Spanish. The parent manual is uploaded to the university homepage and can be downloaded for free.

研究分野：Autism Spectrum Disorder

 キーワード：Autism Spectrum Disorder Naturalistic Instruction Evidence-based Practice Parent Training
Social-communication

1. 研究開始当初の背景

Approximately 6.2 per 1,000 individuals are identified to have a diagnosis of autism spectrum disorder (ASD). While no exact information on the prevalence exists in Japan, it is assumed that the prevalence of ASD has increased considering the overall incidence of children with disabilities has risen every year. ASD is a life-long neurological disorder and characterized by difficulties in development of social-communication skills and engagement in restrictive and repetitive behaviors and interests.

Research identifies behavior analytic interventions, and in particular naturalistic models of early language development, as effective in facilitating the acquisition of language and communication for young children with ASD. As one of the naturalistic language interventions, incidental teaching has been identified as an evidence-based practice as well as one of the most commonly used applied behavior analysis grounded methods for children with ASD.

Since language and communication are ubiquitous, children with ASD require consistent support from all potential communication partners in order to learn new social and communication skills. For young children, communication partners are often parents, family members, or other caregivers. Family members and other caregivers, while essential to the development of language, often engage in behaviors that are not conducive to language acquisition.

Researchers have investigated a number of training strategies to prepare caregivers and other interventionists in variations of incidental teaching. Training procedures have included verbal and written instruction, live modeling, video-modeling, rehearsal, and feedback. While there is evidence that caregivers can effectively implement behavior analytic interventions, all of the trainings were provided in real time either face-to-face or via tele-practice. Synchronous trainings, while effective, may not be feasible in resource-constrained environments. For example, the prevalence of ASD in Japan is estimated between 37.5 to 181.1 per 1,000 individuals. Unfortunately, there is a dearth of Board Certified Behavior Analysts with a current count of 17 as of 2018. Given the shortage of the professionals who work with children with

ASD, there is a need to evaluate innovative training procedures that do not require face-to-face or real time meetings.

2. 研究の目的

The purpose of this study is to evaluate an asynchronous training package to teach two Japanese parents to implement incidental teaching. This study address the following research questions. First, would parents of children with ASD learn and implement incidental teaching procedures with acceptable fidelity given a researcher-developed asynchronous training package? Second, given the training, would children with ASD and complex communication needs show improvement in their targeted language behaviors?

3. 研究の方法

Initially, three parent-child dyads participated in the study. The child participants included two boys aged 4:3 and 5:2 years and one girl aged 4:9 years with an autism spectrum diagnosed by a licensed pediatrician prior to the study. The parent participants had no formal experience delivering behavior analytic treatments to their children. All instructions for pre-training, training, post-training, and follow-up sessions were delivered in PowerPoint slide format and stored in a portable external hard drive. All sessions were conducted in the living room of each participant's home setting. A multiple-baseline design across participants was used to assess the effects of self-paced and video-based learning on acquisition and maintenance of communication intervention procedures across the parent participants. In addition to collecting data on the parent participants' performance (i.e., correct implementation of the intervention procedures), predetermined targeted communicative behaviors (i.e., the frequency of targeted communication responses) of each child participant were also evaluated as a distal measure. The third mother-child dyad was dropped from the study because the mother participant expressed emotional distress over the duration of the study due to technology problems. In addition, video recording itself seemed to trigger the child's problem behaviors including temper tantrum and disobedience.

Pre-assessment: The mother participants met separately with the

principle investigator (PI) twice prior to the initiation of the study. In the first meeting, the PI discussed the purpose of the study and reviewed the informed consent form. In addition, the mother participants were asked to list their children's preferred items and activities. In the second meeting, a digital video camcorder and play materials were provided to each mother-child dyad. The PI also provided the participants with a portable external hard drive that had written and video instructions on how to conduct pre-training sessions.

Pre-training session: The purpose of the pre-training session was to evaluate the typical social and communicative interactions between the mother participants and their children. The mother participants were asked to review written and video instructions presented in a PowerPoint slide format provided by the PI and to follow the procedures.

Select target behaviors: The PI watched all pre-training videos and selected target behaviors for each mother-child dyad. Behaviors were targeted if the behavior either occurred at low levels or did not occur during pre-training and were likely to be improved after the introduction of the intervention. For Mother A, two behaviors were targeted including accurate intervention implementation (i.e., the parent follows each step of the intervention procedures accurately) and communication opportunity (i.e., the parent provides more than three times of communication opportunities to the child within each session). For Mother B, two behaviors were targeted including accurate intervention implementation (i.e., the parent follows each step of the intervention procedures accurately) and use of different words (i.e., expanding the child's current level of communication by presenting a sentence that consists of more than three different words). For Child A, his verbal response (i.e., the child produces the first vowel sound in a word) was targeted. For Child B, two behaviors were targeted including two-word verbal response (i.e., when asked a question, the child produces a two-word verbal response directed related to the item or activity that she is engaged in) and use of different words (i.e., when responding to a question, the child produces a verbal response that consists of more than two different words).

Development of a training manual and

self-paced learning session: In accordance to the target behaviors selected for each mother-child dyad, a training manual that consisted of written and video instructions was developed and provided to the mother participants. The purpose of the training manual was to provide the mother participants with instructions on how to have effective social and communication interactions with their children.

Post-training session and delayed feedback. Before initiating the post-training session, a manual that included instructions concerning the post-training phase and multiple hard copies of self-evaluation checklist sheet were given to the mother participants. Procedures similar to the pre-training phase were followed except that the PI provided delayed feedback to each mother participant according to the intervention procedure. Both verbal and written feedback were given to each mother participant. In a weekly meeting, the PI provided each mother participant with verbal feedback regarding the mother's performance. After the meeting, the PI also emailed the mother participants a list of comments discussed at the meeting. The mother participants were also asked to complete the self-evaluation checklist to assess their performance. The self-evaluation form listed each step of teaching procedures modified according to the behaviors targeted for each parent-child dyad.

⑥ **Follow-up:** Maintenance probes occurred at 1-month following the conclusion of the post-training condition.

4. 研究成果

Overall, visual analysis of the data suggests a positive effect of the treatment teaching strategies, self-paced plus video-based learning, on the accuracy of intervention implementation of the parent participants while there was no functional relation demonstrated given only two replications of effect. A cross all pre-training sessions, mean percentages of accurate intervention implementation was 0%, 47%, and 25%, respectively, for Mother A and Mother B. During the post-training sessions, there was an immediate and substantial increase in the percentage of accurate intervention implementation for Mother A. Meanwhile, a moderate but steady improvement in the accuracy of Mother B continued to

implement the intervention procedures with a high degree of accuracy.

Mixed effects of the parent-delivered intervention on target communicative behaviors were found across the child participants' behaviors. For Child A, verbal response was targeted. As a result, there was no significant improvement in the targeted behavior detected throughout the post-training and follow-up sessions following treatment. However, Mother A reported that Child A increased his eye contact throughout the post-training and follow-up sessions.

For Child B, two language behaviors including two-word verbal response and the number of different words used when responding to questions posed by her mother were targeted for intervention. Prior to treatment, Child B tended to procedure a one-word verbal response when asked a question related to the object or activity that she engaged in within each trial. Following treatment, Child B increased the use of two-word verbal response to a mean of 87.5% per session. At follow-up, she continued to produce the targeted response on an average of 97.6%. Since Child B's language use was limited; she spoke mainly one-word sentences, the use of different words uttered by Child B when responding to a question posed by her mother was also targeted. During pre-training, Child B appeared to produce one-word verbal response. She increased the use of different words to a mean of 2.3 per session during the post-training sessions, and this gain was maintained throughout the 1 month of follow-up.

5. 主な発表論文等

(研究代表者、研究分担者及び連携研究者には下線)

〔雑誌論文〕(計 0 件)

〔学会発表〕(計 3 件)

Hong, E.R., Gong, L., Ganz, J.B., & Neely, L. (2018, February). Fostering parent-delivered tele-home practice in naturalistic communication teaching for three Japanese children with ASD. Paper presented at the 19th Council for Exceptional Children Division on Autism and Developmental Disabilities (CEC-DADD). Clearwater, FL, USA.

Hong, E.R., Gong, L., Ganz, J.B., & Neely, L. (2017, May). Video-based and self-paced learning: Caregiver training and communicative behaviors in

ASD. Paper presented at the Korean Society of Special Education Division on the Korean Association for Emotional and Behavior Disorder Conference. Pusan, South Korea.

Hong, E.R. (2017, May). Using tele-practice to coach parents and students in Japan on naturalistic teaching. Discussant at the 43rd Association for Behavior Analysis International Annual Convention (ABAI). Denver, CO, USA.

〔図書〕(計 0 件)

〔産業財産権〕

出願状況 (計 0 件)

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〔その他〕
ホームページ等

6. 研究組織

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