A Brief Internet-based Parent Training Program May Build Parenting Skills and Reduce Behavior Challenges in Children with Traumatic Brain Injury

A traumatic brain injury (TBI) is lasting brain damage from an external force, such as a fall or a car accident. TBI can be mild, moderate, or severe. Children with TBI may develop behavior problems, such as aggression or impulsivity. With support from therapists and trained professionals, parents can play an important role in helping their children learn more positive behavioral strategies. However, some families may not be able to access in-person family therapy or parenting workshops due to issues such as cost or transportation challenges. A previous study found that an Internet-based parent training program with video coaching, called Internet-based Interacting Together Everyday: Recovery After Childhood TBI (I-InTERACT), led to a greater improvement in parenting skills compared with just giving parents online resources about TBI. In a recent NIDILRR-funded study, researchers developed a shorter version of the original I-InTERACT, called Express I-InTERACT. They wanted to know how well the Express I-InTERACT would work when compared with the full-length I-InTERACT and the online resources alone. They also wanted to find out whether improvements in parenting skills would link to improvements in children’s behaviors.

Researchers at the Rehabilitation Research and Training Center on Interventions for Children and Youth with TBI enrolled 113 children with TBI and their parents in a study between June 2010 and April 2015. The children were 3-9 years old, and all had moderate or severe TBI. The parents were randomly assigned to one of three groups: a group who participated in the full-length I-InTERACT program; a group who participated in the Express I-InTERACT program; and a group who received only online resources without any structured training sessions or video coaching (Internet Resources group).

The participants in the full-length I-InTERACT group received the full program of 10 core and 4 supplemental online training sessions. The core sessions included written content and videoconferences with a therapist. Participants spent up to 1.5 hours per week working on the program, including the 45-60 minute videoconferences. The content addressed several behavior management techniques and positive parenting skills, stress and anger management, and information about how TBI might affect children’s behavior and cognitive abilities. The therapist provided live coaching and feedback to parents over Skype videoconferencing as they played with their children. To supplement the 10 core sessions, 4 additional sessions were offered during the program addressing specific issues such as marital and sibling relationships, pain management, guilt and grief, and working with schools. The full-length I-Interact program lasted for six months.
The participants in the Express I-InTERACT group received a shorter program which included seven core sessions and one booster session. The core sessions focused more specifically on identifying problem behaviors and managing them using warm, responsive parenting techniques and strategies. Similar to the full-length program, participants spent up to 1.5 hours per week working on the Express I-InTERACT program, including the 45-60-minute videoconferences with a therapist. The Express program did not include sessions on stress or anger management, consequences for misbehavior, or cognitive problems following TBI. These seven sessions were delivered over three months. The eighth “booster session” was delivered within the next three months to review skills learned.

The participants in the Internet Resources comparison group were given links to a list of resources about TBI and parenting, and were asked to spend an hour per week reviewing the resources for a period of six months.

To compare changes among the three groups, the researchers measured the parents’ skills in real-life situations before each program started, during the program three months later, and at the end of the program at six months. This was done by videotaping each parent playing with their child for 10 minutes. The researchers then reviewed the sessions and recorded whether or not the parent engaged in positive behaviors (such as praising the child’s specific actions or reflecting the child’s speech) or negative behaviors (such as criticizing their child). In addition, the researchers measured behavior changes in the children by asking parents to identify how many out of 36 behaviors were a problem for their child, as well as how often each behavior occurred. Examples of behaviors included temper tantrums, interrupting, and whining.

The researchers found that the parents in both the full-length and express training programs improved their positive parenting behavior more than the parents in the Internet Resources group during and at the end of the program. At six months, the parents in either training group were about four times more likely than the parents in the Internet Resources group to show positive parenting behaviors. The parents in the full-length I-InTERACT program also reduced their use of negative parenting behaviors. They were about half as likely to show negative parenting behaviors compared to the parents in the Express I-InTERACT or Internet Resources groups at the end of the program.

The researchers also found that parents’ ratings of their children’s behavior improved for the Express I-InTERACT group overall, and for children with the most severe behavior problems in the full-length I-InTERACT group. The researchers found that these parents rated their children as having less frequent behavior problems than the parents in the Internet Resources group did at the end of the program. The researchers found that the differences between both training groups and the Internet Resources group were strongest for children who had the most severe behavior problems at the beginning of the program. In addition, within this group of children,
those whose parents improved most at the end of the program showed the largest behavior gains.

The authors noted the Express I-InTERACT program began by focusing on problematic behaviors in children with TBI and then introduced positive parenting strategies to address them, and that early focus may have led to greater improvements in behavior ratings. While a longer program that includes topics like stress management and coping skills may be beneficial, a brief version of an Internet-based parent training program like Express I-InTERACT may also help parents use more positive strategies to address behavior problems of their children with TBI. A brief program may be more effective than a longer program in improving children’s behaviors and parents’ ability to respond positively if it targets specific concerns (such as behavior management) and may be easier to fit into a parent’s schedule. Brief online programs may also be a relatively cost-effective way to support families of children with TBI. Future research may be useful in examining the long-term benefits of Internet-based parent education programs in improving life outcomes for children with TBI.

To Learn More
Researchers continue to study the impact of Web-based interventions for children with TBI in a new NIDILRR-funded study, Gaining Real-Life Skills Over the Web: http://tinyurl.com/y8u4nkxz

The Model Systems Knowledge Translation Center (MSKTC) offers a range of information products from the TBI Model System Centers including:

- Factsheets on behavioral and emotional problems after brain injury http://www.msktc.org/tbi/factsheets/Emotional-Problems-After-Traumatic-Brain-Injury
- Returning to school after brain injury http://www.msktc.org/tbi/factsheets/Returning-To-School-After-Traumatic-Brain-Injury

Brainline.org and the Center for Brain Injury Research and Training (CBIRT) offer a collection of articles and other information resources on TBI in children, from understanding concussion to raising a child with a TBI https://www.brainline.org/children-tbi

To Learn More About this Study
Research In Focus is a publication of the National Rehabilitation Information Center (NARIC), a library and information center focusing on disability and rehabilitation research, with a special focus on the research funded by NIDILRR. NARIC provides information, referral, and document delivery on a wide range of disability and rehabilitation topics. To learn more about this study and the work of the greater NIDILRR grantee community, visit NARIC at www.naric.com or call 800/346-2742 to speak to an information specialist.

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