

Parenting interventions for children with cerebral palsy: Insufficient quantity and quality of evidence

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Question

What are the effects of parenting interventions on: (a) behavioral outcomes for children with cerebral palsy (CP) and (b) parenting style for parents of children with CP?

Methods

Design: Systematic review

Data sources: Studies of parenting interventions for children with cerebral palsy were identified using electronic databases and specific key words.

Study selection and assessment: All studies included in the review included (a) parents of children with CP, (b) a parenting intervention, and (c) child behavioral outcomes and/or parenting style/skill. All identified studies were coded for type of study design, participant description, intervention type and outcomes. In addition, the strengthening the reporting of observational studies in epidemiology (STOBE) checklist was completed to assess the methodological quality of each included study. Reliability data was not reported for coded variables, as disagreements in coding were resolved by consensus.

Outcomes: The following three outcome measures were included in the review: (a) feeding behaviors, (b) communication behaviors and (c) replacement communicative behaviors.

Main Results

Three intervention studies met the inclusion criteria and were included in the review. Participants in the studies included children with spastic CP, children with non-progressive motor disorders, and children with spastic quadriplegia. Parenting interventions included a behavioral intervention to improve feeding, The Hanen It Takes Two to Talk program, and a Functional Communication Training program. All studies used a pre-post design. Child feeding behaviors, communicative replacement behaviors and child initiated communication increased during the parenting intervention. The authors note that the lack of a control group limits the results.

Authors' Conclusions

The authors concluded that the parenting interventions were associated with behavioral changes in children in all three studies. Furthermore the authors state that the parenting interventions were also associated with changes in parenting skills. Thus, they conclude that parenting interventions may be effective for children with CP and their parents. The authors note several limitations of the studies in the review. First, none of the parenting interventions was a comprehensive program that targeted global parenting skills. Second, the efficacy of parenting interventions for children with CP cannot be determined due to the pre-post designs. The authors hypothesize that testing parenting interventions for children with CP may help to reduce behavioral and emotional problems in children with CP and reduce stress in parents. They recommend that randomized controlled trials of comprehensive parenting interventions are needed for this population.

Commentary

The results of Whittingham et al.'s (2011) review indicate that there is an insufficient number of studies conducted in the area of parenting interventions for children with CP and that the methodological rigor of these few studies is poor. Conclusions that may be drawn from systematic reviews are only as strong as the methodological rigor of the review itself and the studies included in the review (Schlosser, Wendt, & Sigafoos, 2007). This review has many strengths but also some limitations which influence the conclusions that may be drawn from this review.

First, specific research questions are not included. Rather, the authors state that the primary purpose of the study is to "test the efficacy of parenting interventions on child behavioral outcomes." However, the dependent variable (i.e., "behavioral outcomes") is not well defined. Because children with CP often have difficulties in many developmental domains (adaptive, motor, communication, self-help) it is important to know which behavioral outcomes are the focus of this review.

Second, the sources and methods used to identify studies for the review are incomplete. The authors define the search terms used to find studies but fail to specify if the study must include at least one term from each of the three global categories (population, intervention, dependent variable) or any single term from any of the three global categories. If the former is true the sample of studies may be

incomplete. If the study must contain only one and not all of the search terms, it is possible that studies that include motor or communication outcomes but do not include the keyword “behavior” may have been overlooked using these search procedures.

Third, the inclusion criteria that the study must include a parenting intervention regardless of whether the parenting intervention is one of several intervention components makes it difficult to evaluate the efficacy of parenting interventions. As the authors note, one of the three studies included a parenting intervention component along with intervention provided by therapists, making it difficult to determine the unique effects of the parenting intervention on child outcomes.

Fourth, the assessment of the quality of included studies was assessed using a checklist designed to assess the reporting of the findings of observational studies in epidemiology. This checklist is insufficient to evaluate the quality of the intervention studies included in this review. For example, there is no evaluation of treatment fidelity of the included studies, a critical element for intervention studies. Thus, it is difficult to determine the quality of the three included studies.

Fifth, the results presented in the review rely largely on the conclusions and data provided by the authors of the original studies with little additional interpretation. The authors of this review classified each study design as a pre-post design. This classification is incorrect for one of the included studies (Tait, Sigafos, Woodyatt, O’Reilly, & Lancioni, 2004), which is a multiple-probe single-case design. As such, this study has a higher level of experimental control. Another included study (Pennington, Thomson, James, Martin, & McNally, 2009) reported Cohen’s *d* effect sizes between baseline and post-treatment, an inappropriate statistic given the lack of a control group. The authors of this review present these effect sizes without any interpretation of these data.

Sixth, the conclusions of this review are a reiteration of the conclusions of the original studies rather than a discussion of findings in relation to the methodological rigor of each study. The authors of this review conclude that “In all of the studies reviewed, parenting intervention was associated with child behavioral change” (p. 479). This statement is not supported by the studies included in this review. Clawson, Kuchinski, and Bach (2007) included a parent-training component simultaneously with an intervention component provided by the therapist, which makes it impossible to determine the effects of the parenting intervention on children with CP’s eating behaviors. Pennington et al. (2009) did not include a control group, which makes it impossible to determine the unique effects of the parenting intervention on child communication skills above and beyond changes due to maturation. Only Tait et al. (2004) provided sufficient evidence to support the use of parenting training to teach children with CP appropriate communication skills.

In summary, this review provides little insight as to the effectiveness of broad-based parenting interventions for children with CP. Functional communication training implemented by parents appears to be an effective intervention for children with CP based on the results of a single study (Tait et al., 2004). This review illustrates the need for additional high quality studies in this area. While the authors of this review state that a randomized controlled trial is needed, additional well-controlled single-case design studies, such as Tait et al. (2004), may also provide valuable evidence as to the potential effects of parenting interventions for children with CP. In addition, single-case designs may be a more preferable design given the low incidence of the population and the relative ease at which clinicians can conduct such studies in everyday settings.

Declaration of interests. The commentary author reports no conflicts of interests and is solely responsible for the content of this structured abstract.

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