



Effectiveness of Tailored Educational Resources for American Military Parents of a Child with a Disability: A Preliminary Study

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Research Article

Volume 3 Issue 2

Received Date: June 24, 2020

Published Date: July 08, 2020

DOI: 10.23880/aphot-16000150

Abstract

Background: This preliminary study attempted to address gaps and challenges military parents of a child with a disability experience. Through educational resource dissemination, the study hoped to increase caregiver knowledge of DIR, increase parent confidence for carryover of DIR, and increase satisfaction of OT services within a Pediatric Therapy clinic in Italy serving American military families.

Methods: Five parents receiving services at a pediatric therapy clinic based in Italy participated in the pilot study. A pre and post survey was administered assessing parents' satisfaction, knowledge, and confidence with the Developmental-Individual Difference and Relationship (DIR) Model before and after dissemination of educational resources. Wilcoxon signed-rank tests were performed to compare means of the change in satisfaction, knowledge, and confidence and means of the change in parent's overall scores.

Results: One parent demonstrated a clinically significant change in overall results from pre to post. There was not a statistically significant difference between pre and post for the group in satisfaction, knowledge, and confidence.

Conclusions: This study was a preliminary attempt to further understand the experience of military parents of a child with a disability as well as increase availability of resources for this underserved and at-risk population. Findings suggest that tailored educational resources were slightly effective in increasing knowledge and provided insight into future research opportunities.

Keywords: Etiopathogenetic Therapy; Supramolecular Structures; Coronavirus; COVID-19

Introduction

Military parents with a child with a disability are at a higher risk for increased levels of stress and having trouble obtaining and maintaining disability related services [1]. In part, this is due to their dual membership to two groups, military and a family with a child with disability, who both have decreased support and accessibility to therapeutic services [1]. Children from military families are also at higher risk for social-emotional based challenges as compared to the general US population [2]. A review of the literature also found that there is a gap in availability of developmental services for military families abroad with a child with a

disability as well as an increase of social-emotional challenges experienced by military families and their children that isn't fully met through current programming [1-3].

This preliminary study aimed to address the lack of resources available for military parents of a child with a disability through the development of educational resources designed to increase military parents' satisfaction with therapy services, as well as knowledge and confidence of the Developmental-Individual Difference-Relationship Based (DIR) Model. The research question this study aimed to answer was: "Does access to DIR intervention resources affect satisfaction, knowledge, and confidence of military

parents with a child with a disability?" With associated goals to:

- Determine parents' satisfaction with their OT services and increase satisfaction of OT services, as measured by a pre and post survey
- Determine parent perceptions of DIR and increase parents' knowledge of DIR, as measured by a pre and post survey
- Determine parents' confidence with the use of DIR and increase parents' confidence for carryover of DIR in their daily routines, as measured by a pre and post survey.

Literature Review

Military

There is a wide base of evidence that supports the need for increased availability of resources for military families, as both children and parents are at-risk for social-emotional challenges [1-3]. A qualitative study using data from computer-assisted telephone interviews with military children (n=1507) found that children in military families face greater emotional and mental challenges as compared to a national sample [2]. One aspect of these challenges may be due to the strain of military life such as deployment, which can cause social-emotional and other occupational issues for children. A parent's deployment can affect how children from military families perform in school as well [4]. Just as children in military families are at greater risk of social-emotional challenges, so too are their parents. Military parents of a child with a disability experience greater stress than military families without a child with a disability, as evidenced by a 253-person survey study [5]. An additional stressor upon military life is the chance that the family may have to move and live abroad. A descriptive study surveying 346 US military spouses abroad, found that living overseas is correlated with negative well-being and psychosocial outcomes for military families [6]. With risk for decreased mental health in various aspects of the military family unit, evidence supports that more programs and resources targeting the caregiver and child should be created because children's psychosocial health is significantly correlated with the stress level of the parents [3]. The existing literature supports the need for resources for military parents, military children, military families with disabilities, and military families living abroad to address challenges and prevent negative outcomes. This preliminary study aimed to address this need by creating tailored educational resources for five military parents with a child with a disability.

Developmental-Individual Difference-Relationship Based (DIR) Model

The DIR Model is an evidence-based intervention

approach designed for working with children with developmental disabilities, particularly those with social-emotional relationship-based issues [7]. The framework identifies that symbolic play is an important building block for appropriate development in children, and many children with disabilities lack this. The 'D' represents the development or a child's functional milestones which include shared attention, reciprocal interactions, problem solving, and abstract thinking [8]. The 'I' represents the individuality that each child has regarding their sensory processing and regulation and motor profile which must be accounted for to fully treat the child [8]. The 'R' represents the relationships that are necessary to nurture a child's emotional and social capacities [8].

Several studies highlight the effectiveness of the DIR Model. A study in Thailand found that an intervention group of 16 people who received a home-based DIR program made significant gains in the outcome measures of the Functional Emotional Assessment Scale (FEAS) ($p = .031$), the Childhood Autism Rating Scale (CARS) ($p = .002$), and the Functional Emotional Developmental Questionnaire (FEDQ) ($p = .006$) [9]. An additional study in Taiwan found that 11 males ages 4-5 with Autism Spectrum Disorder (ASD) had significant improvements in their scores for emotional functioning, communication, and ADL skills when the DIR approach was given by trained parents in a 10-week at home program [10]. A third home-based DIR pre-post study with 68 children showed that using a parent-delivered DIR/Floor time intervention increased children's functional developmental levels based on the FEAS ($p < .0001$) [11]. Schoen, et al. [12] performed a retrospective pre-post treatment study of 179 children with sensory processing challenges who received occupational therapy using a sensory integration therapy and DIR/Floortime approach. Based on therapist administered assessments (BOT-2, MFUN, ABAS-II, BASC-2, SP3D, and SS) and parent report, improvements were noted from pretreatment to post treatment on all measures including adaptive behavior, emotional functioning, and sensory processing [12].

The DIR approach is built on the belief that a child's relationships are integral to healthy development, and the parent-child relationship is vital [13]. Therefore, the more therapists and those working with military families can support the parent-child relationship, the more they can foster a child's development.

Family Centered Care

As the entire family unit is at risk due to military life abroad with a child with a disability, a family centered care approach is important. This approach encompasses several beliefs but can be defined as when practitioners acknowledge

the family as the constant in a child's life and engage the family unit in the decision-making process [14]. Family centered care is a significant aspect of the DIR method, the clinics' philosophy, and pediatric occupational therapy. DIR intervention emphasizes the significant role of parents in their child's development [7]. The framework promotes this belief through their 'Family First' initiative which is supported by the evidence that child-caregiver relationships are essential for a child's social, emotional, and intellectual development [7]. Further research suggests that involving parents in their child's therapy is the most satisfying and beneficial approach for families [15-17]. In a systematic review looking at 23 studies on the interventions OT's use to increase social-emotional development in children (age 0-5) with or at risk for disabilities [18] found several important findings. First, studies in which parents were coached on strategies to increase their social-emotional support and responsiveness with their child were found to have moderate positive effects [18,19]. Second, through parent coaching, occupational therapists can promote parent-child bonding and children's ability to attend, cooperate, initiate, and demonstrate positive affect [18]. Cohn, et al. [20] analyzed 5 videotaped interviews of parents of a child with a sensory modulation disorder wherein they discussed their hopes for OT outcomes. Two themes that emerged from the study was that parents identified wanting to learn strategies to support their child and they desired to become collaborators with the occupational therapists [20]. The evidence points toward the significance for Occupational Therapists and pediatric practitioners to recognize the importance of the family, as a child develops within this context [21]. The objective of this study was to fill the gap in resources that military parents with a child with a disability and their family unit experience.

Methods

Design

This study utilized a pre and post survey design. Parents were assessed pre and post dissemination of four newsletter modules. Institutional Review Board approval was obtained for this study.

Participants

The participants of this preliminary study were a convenience sample of military parents who have a child with a disability and receive therapy services (OT, SLP, PSY) from a pediatric clinic in Italy. The pediatric clinic serves a large population of children from an American military base in the area. Inclusion criteria for this study were (1) eighteen years and older, (2) primary caregiver to a child with a disability, and (3) able to read and write in English. Exclusion criteria for this study is (1) persons who do not read or write English,

(2) do not reside with child receiving services, and (3) are not receiving OT services.

Instrumentation

Parents were asked to sign an informed consent to participate in the study and then asked to complete a pre survey. This survey assessed parents' satisfaction of OT services and their knowledge and confidence of the DIR model. The Client Satisfaction Questionnaire (CSQ-8) and the Parent Empowerment and Efficacy Measure (PEEM) guided the creation of the survey development. CSQ-8 is a common evaluation used to assess client satisfaction with services and was helpful in guiding the development of the questions for the satisfaction portion of the survey [22]. The PEEM assisted in the development of the confidence portion as it assesses parents' confidence to be a good parent and confidence in their ability to seek help when needed [23].

The survey was piloted by a panel of experts in the area of survey design and pediatrics. Upon completion of the pilot survey, feedback was incorporated in the survey and redistributed to the panel. The final version of the survey was developed in REDCap (Research Electronic Data Capture) which is a secure, web-based software platform designed to support data collection for research studies [24,25].

The final version of the survey consisted of nine rating questions, three for each construct being assessed, as well as qualitative comment sections. The rating scale was set at a 10-point Likert scale. The RED Cap survey was distributed in-person via computer. A post survey was administered after the distribution of the educational resources to assess if the participant's perception of their satisfaction, knowledge, or confidence had changed. No identifying information was collected in the survey, and all surveys were coded to protect the confidentiality of the participants.

Procedures

Over the course of four weeks, newly created DIR and OT specific educational resources were virtually distributed to the parents. These resources were tailored to five themes which arose from analysis of the pre-survey results and were designed as newsletter modules. The module themes were children's' goals and treatment plans, knowledge and techniques, common issues in the home, foundations to academic success, and how to support a child when their parent is gone for a period of time. Each newsletter module adhered to a routine outline which began with interviews of one of the lead therapists at the clinic, focusing on personal questions such as hobbies and likes/dislikes to promote connection between parents and therapist. Next, the modules outlined and described two occupational therapy goals and

how therapists work on them in the clinic and how parents can work on them in the home. Discrete steps and strategies were provided for the parents to be able to replicate at home. Last, two to five printable resources specific to the theme of the week with activities and strategies to try that week were included. Parents were encouraged to implement 1 strategy and 1 activity each week.

Data Analysis

Upon completion of the survey collection, a quantitative analysis was completed. SPSS V.26 was utilized to analyze all data. Descriptive statistics and Wilcoxon signed-rank tests were completed to determine if there was a statistical difference in the parent's perception of their knowledge, satisfaction, and confidence of DIR and OT services. Wilcoxon signed-rank tests were conducted to compare the groups pre and post answers for each construct (knowledge, satisfaction, and confidence) as well as to compare pre and post answers for each parent.

Results

Five American military parents of a child with a disability who were receiving therapy services in Italy completed the

pre and post survey. The construct of satisfaction consisted of three questions, the construct of knowledge consisted of three questions, and the construct of confidence consisted of three questions. Each answer was set to a Likert scale of 1-10, with 1 being lowest score and 10 being the highest score.

A Wilcoxon signed-rank test was conducted to determine whether there was a statistical difference in parents' satisfaction, knowledge, and confidence from pre to post survey. Results of that analysis indicated that there was not a statistically significant difference in satisfaction, $z = -.749$, $p > .05$ ($p = .454$), knowledge, $z = -1.378$, $p > .05$ ($p = .168$), or confidence $z = -1.134$, $p > .05$ ($p = .257$) for the group of parents. The results indicate that access to newsletter modules did not statistically affect military parents of a child with a disability's satisfaction, knowledge, or confidence. Additionally, a Wilcoxon signed-rank test was conducted to determine whether there was a statistical difference for any of the five participants from pre to post survey on all constructs. Results of that analysis indicated that there was a statistically significant difference for one parent, $z = -2.060$, $p < .05$ ($p = .039$) but there were not statistically significant differences for the remaining four participants (Tables 1 & 2).

		M(SD)	z	Sig. (2-tailed)
Satisfaction	Pre	9.47(.915)		
	Post	9.27(.704)	-7.49	0.454
Knowledge	Pre	8.40(2.23)		
	Post	9.07(.961)	-1.38	0.168
Confidence	Pre	9.53(.834)		
	Post	9.33(.724)	-1.13	0.257

Table 1: Mean Scores of Satisfaction, Knowledge, and Confidence.

		M(SD)	z	Sig. (2-tailed)
Parent 1	Pre	8.56(1.59)		
	Post	8.56(.73)	-0.368	0.713
Parent 2	Pre	8.33(2.12)		
	Post	9.44(.73)	-2.06	.039*
Parent 3	Pre	9.11(1.83)		
	Post	9.0(.87)	-0.176	0.86
Parent 4	Pre	9.67(.50)		
	Post	9.22(.67)	-1.41	0.16
Parent 5	Pre	10.0(.00)		
	Post	9.89(.33)	-1	0.32

Table 2: Mean Scores of Parent Results.

Discussion

This preliminary study sought to address one overarching research question “Does access to DIR intervention resources affect satisfaction, knowledge, and confidence of military parents with a child with a disability?” by (1) assessing parents’ satisfaction of OT services, knowledge of DIR, and confidence with DIR through pre-survey and post-survey, (2) and providing four newsletter modules with educational and tailored DIR and OT resources to increase resources for this population. The results from this study suggest that access to DIR intervention resources may not result in a statistically significant change in knowledge, confidence, and satisfaction of DIR services but there may be clinically significant change in parents’ knowledge of DIR as seen by the increase in raw knowledge scores for all five participants.

Ten participants had consented to participate at the beginning of the study and received face-to-face contact with the study investigator. During the middle of the study, there was a COVID-19 outbreak in Italy which forced the clinic to temporarily shut down, families to remain home, and the interventions to occur virtually. Once the strict COVID-19 restrictions were implemented, only five participants chose to complete the post-survey and continue with virtual communication thereby decreasing the sample size. Frequent face to face check-ins and resources distributed in person were previously planned and the COVID-19 restrictions subsequently changed the procedures of the intervention which impacted the total sample and potentially the overall results. A statistically significant change in knowledge, confidence, and satisfaction of DIR services was not evident after the implementation of the designed educational resources but this is likely due to the reduced sample size and change in study procedure as a result of COVID-19. Clinically significant changes were noted in the parent’s knowledge of DIR. Clinically significant change reflects the extent to which an intervention makes a difference of which is practical in a client or patient’s everyday life [26]. In clinical practice, educating parents on the purpose and intricacies of therapy is oftentimes a crucial first step. As parents’ knowledge and understanding of the reasoning behind interventions increase, they can then begin to apply skills in their daily life [27].

Though there was not a statistically significant increase in the constructs or a raw increase in confidence and satisfaction, there was a raw increase in knowledge scores. This is likely due to the modules focusing on education of themed topics that were directed by pre survey results and were highly family centered to the needs of the parents and their families. The knowledge construct was addressed through the resource development, but satisfaction and

confidence were addressed in other ways. Satisfaction was targeted through providing a detailed report to the clinicians and senior level staff about the pre-survey results. The goal was to improve their clinical practices and therefore the quality of the clinics’ services. Confidence was addressed through virtually checking in with parents, asking them questions about issues at home, and breaking down DIR strategies into accomplishable steps. These methods were targeted to facilitate and increase the parent’s confidence in the use of DIR strategies. Additionally, the confidence and satisfaction scores may not have significantly increased due to the participants longtime relationship with the clinic and a baseline a positive perception of the clinic and its’ services.

DeGrace, et al. [21] finds that occupational therapists become family centered when they begin to examine the occupational functioning of the family and tailor their interventions to focus on what the family deems as meaningful. Providing tailored educational resources to parents, whether it be a home exercise program or a relevant research article, can strengthen a therapist-parent bond and aim to be family centered by including the family’s routines and activities at the heart of these resources. By initiating conversations with parents and asking questions about what problems are occurring in the home, the therapist can discover what the functional concerns are for the child and tailor treatment to those area. This is a mark of a good family centered practitioner. Providing resources may appear to be a superficial step, but it is a critical initial step in supporting parents. This is seen in the targeted educational resources developed as part of this study and the change in parents’ knowledge scores on the survey results.

This study aimed to increase pediatric clinical practice by informing therapists of parent needs and wants, provision of programming for military families abroad, and increasing resources on the DIR Model at an international level. This preliminary study is a steppingstone in discovering the needs of military families with a child with a disability and affecting meaningful change in their knowledge and potentially their ability to utilize much needed social-emotional supports abroad. Future research should consider: retrospective or scoping reviews of military culture and how culture may affect parent child relationship, telehealth using parent coaching and the DIR model, effectiveness of video review to enhance parents’ knowledge and confidence, effectiveness of motivational interviewing with military parents, and general research on the desire and willingness of parents involvement in the therapeutic process.

Limitations

This study contained some noted limitations. The study had a small sample size. This was largely due to the limited

client population at the clinic and even smaller number of parents physically coming. The limited involvement of parents posed an issue, as a large piece of DIR therapy is parents being involved in sessions. For DIR to be proven to be effective, parents are an integral piece of what makes it work. Including them in sessions, educating them about sensory motor profiles, modeling positive interactions with the child, coaching them through DIR techniques and working alongside them in treatment sessions are the goals and this was not always happening at the study site.

Additionally, as the survey was completed by consumers of the services, it is likely there may have been bias. The use of the 10-point Likert scale on the survey could also have diluted question strength.

Finally, this study took place during the COVID-19 pandemic in Italy and in the United States. Due to shelter in place orders and rearranging of people's daily routines, virtual resources became the final end-product and virtual communication was the only contact with participants, however it is acknowledged that in-person check-ins and in-person resources may have been more effective.

Implications for Practice

The results of this preliminary study may have practice implications within the field of occupational therapy, for military parents of kids with social-emotional and sensory processing challenges, and those using the DIR model.

- Increase of available research on parents in the military with a child with a disability and use of DIR model
- Application of educational modules for military parents of children with disabilities can result in a clinically significant change in knowledge of DIR and potentially address the social-emotional needs of children more effectively.

Conclusion

There continue to be gaps in service that military parents with a child with a disability experience. The preliminary study that was delivered to American military parents living in Italy aimed to meet this need. The family-centered educational resources focused on DIR techniques aimed to increase the satisfaction, knowledge, and confidence of the participants. The results of this study suggested that brief access to educational resources may result in a clinically significant change in knowledge. Further investigation into the needs and experiences of military parents with a child with a disability would be worthwhile. Future studies could further support the importance of family centered resources for this population and their access to these resources while abroad.

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