



HHS Public Access

Author manuscript

J Child Fam Stud. Author manuscript; available in PMC 2018 February 01.

Published in final edited form as:

J Child Fam Stud. 2017 February ; 26(2): 540–547. doi:10.1007/s10826-016-0583-6.

Sit Down and Play: A Preventive Primary Care-Based Program To Enhance Parenting Practices

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Abstract

The primary care office offers an ideal setting to encourage parenting behaviors that promote early childhood development. We conducted a pilot study to establish feasibility and acceptability of *Sit Down and Play (SDP)*, a brief primary care-based program to facilitate positive parenting behaviors through take-home play activities. A prospective 1-month study was conducted in an urban primary care clinic. *SDP* was administered to 30 caregivers of 6–12 month old children while they waited for their well-child appointment. Caregivers completed baseline and 4-week follow-up surveys. Open-ended interview questions regarding acceptability and usefulness of *SDP* were administered and analyzed using content analysis. Parenting practices related to child development were measured with standardized measures and changes analyzed using paired t-test and linear mixed effects models. Most caregivers were mothers (90%) and non-white (97%); the majority of children received Medicaid (87%). There were significant increases in parental reports of practices related to child development ($p < 0.001$), including families who reported low incomes (i.e. $< \$25,000$) and received a high-school education or less ($p = 0.001$). Four main themes emerged from the open-ended interview data: 1) importance of play, 2) noticing a change in their child, 3) reinforcing existing positive parenting behaviors, and 4) satisfaction with the program. This preliminary study suggests that *SDP* is a feasible and potentially beneficial program that can be delivered during pediatric well-child visits. Further studies are needed to determine the effectiveness of *SDP* on parenting behaviors and developmental outcomes.

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Conflict of Interest:

The authors declare that they have no conflict of interest.

Keywords

Parenting; development; intervention; primary care; poverty

INTRODUCTION

A plethora of studies, in fields as diverse as economics, biology, and developmental psychology demonstrate that a cognitively enriched home environment with sensitive parenting in early childhood supports a child's language, social-emotional, and cognitive development (Hackman et al. 2010; Heckman et al. 2010; Larson et al. 2015; Rodriguez et al. 2009). The attainment of early developmental skills significantly influences a child's educational achievement and subsequent life course trajectories (Duncan et al. 2007).

Although the impacts of parenting behaviors on childhood developmental outcomes are well-established, significant discrepancies in parenting behaviors continue to exist. Particularly well documented are income-related discrepancies in parenting practices, in part as a result of more frequent exposures to negative life experiences, elevated parenting stress, and decreased economic resources (National Institute of Child Health and Human Development Early Child Care Research Network 2005). Numerous studies demonstrate that children growing up in poverty are less likely to be exposed to stimulating home environments and interactive parenting practices, which in turn contribute to poorer language, cognitive, and social-emotional outcomes emerging as early as 18 months (Fernald et al. 2012; Halle et al. 2009; Landry et al. 2008; Shah et al. 2015; Shonkoff et al. 2011). These early deficits are associated with lower academic skills upon kindergarten entry, and worsen as a child progresses through school, resulting in diminished reading and math performance, decreased graduation rates, and lower educational attainment (Duncan et al. 2007; Engle and Black 2008; Grantham-McGregor et al. 2007; Hart and Risley 1995; Noble et al. 2007; Tamis LeMonda et al. 2004).

Enriching parenting behaviors in early childhood offers a promising strategy to encourage early childhood development and reduce future educational disparities. Indeed, a number of preventive programs aimed at improving parenting competencies during early infancy have been developed with positive impacts on parenting behaviors and early child outcomes (Landry et al. 2006; Olds et al. 2007). Many of these programs are intensive, utilize trained professionals, and are often delivered through home visits or early education center-based programs (Love et al. 2013; Olds et al. 1997; Zigler et al. 2008). Consequently, the logistical, staffing, and financial challenges associated with these programs – which can cost between \$ 2100 to \$13,000 per family per year- present concerns for not only population-level implementation, but widespread dissemination to the nearly 30 million children who live in poverty in the United States (Zaveri et al. 2014).

The primary care setting offers a promising solution to address these financial and practical barriers. In addition to frequent and well-attended well-child visits, the primary care setting offers the advantages of providing an existing, non-stigmatizing, and locally accessible setting to reach a large population (Mendelsohn et al. 2005). To illustrate this point, one can look to *Reach Out and Read (ROR)*. *ROR* is a low-cost pediatric literacy program developed

to promote books and encourage families to read together. In the *ROR* model, pediatricians deliver a book to a child during each attended pediatric well child visit, from 6 months to 5 years of age, with brief education regarding the importance of shared reading. *ROR* reaches 4 million children annually, has been implemented in every state, and has demonstrated effectiveness in increasing the frequency and enjoyment of parental reading with impacts on a child's expressive vocabulary (High et al. 2000; Klass et al. 2009; Mendelsohn et al. 2001; Needlman et al. 1991; Sharif et al. 2002; Zuckerman and Khandekar 2010).

Building upon the success of *ROR*, other innovative programs have used the primary care office to further strengthen parenting behaviors (Casey and Whitt 1980; Mendelsohn et al. 2005; Minkovitz et al. 2003; Minkovitz et al. 2007; Paradis et al. 2013; Taylor et al. 1997). These primary care-based programs have incorporated a number of strategies such as utilizing paraprofessionals during office visits, conducting group well-child visits, and/or adding home visits. A recent meta-analysis evaluating the impact of primary care-based programs on parenting behaviors suggests that these strategies have had a significant positive effect on parent-child interactions (Shah et al. 2016). One of these programs, Healthy Steps, combines home visits, a telephone information line, parenting groups, and additional services provided by a child developmental specialist and has shown improvements in positive disciplinary strategies (Minkovitz et al. 2003). The Video Interaction Project, another primary-care based program, utilizes developmental specialists to review videotaped interactions between a caregiver and a child and has demonstrated significant impacts on parent-child interactions and early childhood language skills (Mendelsohn et al. 2007; Weisleder et al. 2016).

We aimed to further leverage the primary care setting to deliver a low-intensity strategy that could be universally delivered to facilitate positive parenting practices. We designed *Sit Down and Play*, a brief, parent-directed program intended to take place during each pediatric well-child visit occurring in a child's first two years with the goal of promoting positive parenting behaviors through take home play activities. The objectives of this study were as follows: 1) to measure the feasibility of incorporating *Sit Down and Play* into an urban primary care clinic; 2) to evaluate acceptance (by parents) of receiving *Sit Down and Play* to supplement the well-child visit; and 3) assess how *Sit Down and Play* may influence parental reports of positive parenting practices.

METHOD

Participants

The sample for this proof of concept study consisted of 30 consecutively enrolled eligible caregivers from May 2014–July 2014. Parents were eligible if they had a child between 6–12 months old and identified themselves as the child's primary caregiver. Although our goal is to ultimately deliver the intervention to children 2–24 months of age, we first wanted to proceed, as recommended by the National Institutes of Health (Moore et al. 2011), to establish feasibility and acceptability of the intervention to aid in the development and design of future, more costly studies. Thus, we chose parents of infants 6–12 months of age as this is a period when well-child visits occur frequently allowing for a relatively rapid pilot

testing. Future studies will examine the feasibility of the intervention in the wider age range of 2 to 24 months.

Parents were excluded if their primary language was not English or if their child was sick. Of the 35 families approached for the study, 30 participated and 5 were ineligible based upon study criteria. Most caregivers were mothers (90%), less than 35 years of age (87%), non-white (97%) and reported household incomes less than \$40,000 (64%); most children received Medicaid (see Table 1; 87%).

Procedure

We conducted a prospective one-month study at an urban, hospital-based primary care clinic in Chicago, Illinois. Informed consent was obtained from eligible parents who were told that a study was being conducted to assess how children spend their time. After obtaining baseline measures, *Sit Down and Play* was administered to parents by a trained research assistant in the examining room or waiting room while families waited for their child's provider. The parent was contacted one month after the appointment for a telephone follow-up interview. This study was approved and monitored by the University of Illinois at Chicago Institutional Review Board.

The *Sit Down and Play* (*SDP*) intervention is informed by Bandura's Social Cognitive Theory. Central to Social Cognitive Theory is that how people feel about their ability to perform a behavior (i.e. self-efficacy) impacts how they will behave (Bandura 1977; 2004). In this way, strategies that target parental self-efficacy should positively impact parenting behaviors. Key constructs of Social Cognitive Theory utilized to promote self-efficacy are: observational learning (repeated modeling of the desired behavior), facilitators (presence of resources to engage in behavior), knowledge (awareness of benefits of positive parenting behaviors on child's development), and self-regulation (concrete strategies for parent to achieve parenting behavior) (Bandura and Schunk 1981; Bandura 2004; Gollwitzer 1999).

SDP is designed to be a brief, low-cost program that incorporates these key constructs to elicit positive parenting behaviors. It is intended to be delivered by existing clinical staff, nonprofessionals, or volunteers during each of the eight well-child visits between 2–24 months of age while a family waits to be seen by their pediatrician in the examination room. During each session (10–15 minutes) the following takes place: 1) Using simple toys, examples of how to use the toy to facilitate talking and playing with their child are modeled to families (observational learning). Toys are age-specific and include stackable rings for 6-month-old children, a set of three balls for 9-month-old children, and wooden cars for 12-month-old children. During this time, discussions regarding their child's current developmental abilities and the importance of talking, playing, and interacting with their child occurs (knowledge). 2) Parents are asked to use the toy to play with their child and feedback is given, which includes praising and reinforcing positive behaviors. The parent is given the toy to take home as well as suggestions for simple activities to do at home to support parent's confidence in adopting behaviors that encourage positive interactions (facilitators). 3) Parents are asked to commit to playing with their child everyday to highlight the importance of these interactions on their child's development (self-regulation).

Measures

Sociodemographic data were collected based upon on a verbally administered questionnaire and included parental age, parental education level, estimated household annual income, number of children in the home, child's age, child's gender, and child's insurance. Caregivers participated in a structured interview with open-ended questions at 4-week follow-up to assess usefulness and acceptability of *SDP*. Changes in self-reported parenting practices related to child development were also evaluated and measured by subscales of the StimQ-Infant. The StimQ is based on a structured interview with a child's caregiver and in normed data demonstrates good internal consistency (Cronbach's alpha = 0.88), test-retest reliability (intraclass correlation coefficient= 0.93), and predictive validity of early child development (correlation between StimQ and The Home Observation for the Measurement of the Environment Inventory = 0.55, $p < 0.001$) (Dreyer et al. 2006). It has been used in several studies regarding early child development and parenting interventions (Dreyer et al. 1996; Goldfeld et al. 2011; 2012; Tomopoulos et al. 2006). Two subscales of the StimQ-Infant were used for this study: 1) Parental Verbal Responsivity (PVR), which assesses verbal interactions between a caregiver and a child and 2) Parental Involvement in Developmental Advance (PIDA), which measures different interactional activities between a parent and child that promotes cognitive development, such as play. Parents completed the PIDA and PVR subscales at baseline and at 4-week post-intervention follow-up. Yes or no questions were summed for each subscale for a total score (range 0–7 for PIDA; 0 to 11 for PVR).

Data Analysis

Both qualitative and quantitative methods were utilized in the analyses of this pilot study. The data generated by the interviews to evaluate acceptability of *SDP* were analyzed using content analysis, which is inductive and reflects information from the participants without searching for predetermined perspectives (Hsieh, 2005). First, the data were read for initial impressions by the qualitative analyst (D.D) and discussed with two investigators (R.S and M.A); these initial readings were conducted separately to ensure an independent understanding. The researchers discussed their impressions and determined similar understandings during this initial analysis step. Next, the qualitative analyst read the data, recorded notes of impressions, and underlined the exact words from the texts to denote fundamental concepts to create small units for analysis (i.e. codes). The codes were used to create the initial groupings, which were then categorized into themes until there were no longer any new or relevant information emerging from the data being collected (Speziale et al. 2007). Definitions for each theme were developed and, in preparing the findings, exemplars for each theme were taken from the data. Themes were corroborated by the other investigators (R.S. and M.A) who coded the focus groups independently. Coding discrepancies were resolved through discussion among the investigators and involved identification of the same content with a different code or theme name. Discrepancies among the authors were minimal and easily resolved.

We assessed the characteristics of the sample using percent for categorical variables and means with standard deviations for continuous variables. Paired t-tests were used to examine changes in PIDA and PVR at post-intervention compared to pre-intervention. Linear

regression with random intercepts were also used to account for lack of independence in repeated measures nested within children (Hedeker et al. 2006). The PIDA and PVR outcomes at baseline satisfied the normality assumption. The adequacy of the regression model was checked using the residuals transformed by the inverse Cholesky root of the marginal covariance matrix (Fitzmaurice et al. 2004). Average improvements in PIDA and PVR were computed and 95% confidence intervals were estimated using the linear mixed effect models. We tested for interaction effects between intervention and education and between intervention and household income to see if the intervention affected the PIDA and PVR differentially across levels of education and income.

RESULTS

Acceptability of *SDP*

All 30 families were reached for one-month follow-up. Parents' answers to interview questions regarding the usefulness and the acceptability of *SDP* centered around four main themes that emerged from qualitative analysis of the data: 1) importance of play, 2) noticing a change in their child, 3) reinforcing existing positive parenting behaviors, and 4) satisfaction with the program.

Importance of Play—Parents were appreciative of learning new ways to improve the time they spend with their child. Fourteen parents mentioned the importance of play as particularly valuable. One mother stated, "It was useful learning about play and that he's learning at the same time as he's playing." Another parent commented: "Sometimes you just don't know how important it is to bond with your child; sometimes you think that just holding them is enough but when you're playing with them you are bonding with them and that is everything." Parents frequently mentioned that after receiving *SDP* they were more reflective when they play with their children. One mother revealed: "What I wasn't doing and what I got from the tips was explaining to her what I was doing – you know more talking, and you know I have been talking to her more which I wasn't doing and it's helpful." Another mother stated: "I really thought it was good to think about play and think about it more carefully and with more of a purpose." Because the program was able to give them specific suggestions on playing with their child, participants revealed feeling more confident in their ability to play with their child. One participant stated, "I also want to thank you for the balls. I wish I would have thought of that sooner. I call them my tool toys. It has been so great." Another mother added: "For example, some days she will push the car, but other days she wants to stack the car, and some days she wants to play other ways...all the strategies have been helpful in combination and we are also using the strategies at other times during the day."

Noticing a change in their child—Twelve participants described learning how to interact with their child as being a powerful experience for them, often with visible changes in the child's behavior. For example, one participant stated: "I noticed after doing this and having someone talk to me, I notice him doing more talking and making sounds. I also noticed that the more I interact with him, the more he is active and tries to dance and talk. It is so funny!" The change in their child's behavior influenced by their own behavioral change

was expressed clearly: “I now sit down at her level – before I would be in a chair or standing, and now by getting down on her level, I notice she makes more eye contact with me, is cooing more, seems more into activities we do.”

Reinforcing existing positive parenting behaviors—Thirteen parents mentioned that the program was a reaffirmation of positive parenting work that they were already doing. For example one parent stated: “It was a confirmation that I was doing the right thing with my child – I mean you guys do this for a living and to hear it from you that I am doing it right felt really good.” Another parent stated: “It helped me more catch the things I wasn’t doing or elaborate more on the things I was doing to help her learn.” Another mother stated, “I’m really glad that you approached us – it really helped us by confirming what we were doing right and gave us suggestions as how we can do things better.”

Satisfaction with the program—All the participants expressed gratitude for the time spent with them by the researchers. Parents felt having someone to talk to while they waited for their appointment was helpful. One parent stated: “They should have more of what you do at every visit.” Another said: “I found this really helpful. I thought it was especially useful for this being my second child. With the first, I was really busy that I didn’t know what to do. Now, I can concentrate and learn.” Another stated: “I just wish you guys would keep the study up because so many people need the additional assistance. I mean I’m 37 years old and you know I would have thought you couldn’t do anything with those rings and I learned so much.” The appreciation was expressed by one parent this way: “If someone can open your eyes on how to better teach my son I am up for it.”

Parenting Practices

There were significant increases in self-report parent-child interactions as measured by the StimQ-Infant (see Table 2). In the PIDA subscale, in which scores range from 0 to 7, there was an average improvement of 1.9 points (95% CI 1.3–2.5, $p < 0.0001$). In the PVR subscale, which has scores that range from 0 to 11, an average improvement of 2.2 points was noted (95% CI 1.3–3.0, $p < 0.0001$). We did not find a significant interaction of income or education with the intervention on self-reported parenting practices, suggesting that parents with lower education and incomes found the intervention equally helpful.

DISCUSSION

Recognizing the impact of parenting behaviors on a child’s early development and future well-being, the public health and scientific communities have called for strategies that will nurture positive parenting practices (Dworkin 2004). While these communities have advocated for the primary health care system to promote early childhood development, health care setting barriers such as cost, time, space limitations, and the increasing demands on primary care providers are rarely addressed. What is distinctive about *SDP* is the aim to build upon successful primary care-based models while addressing these barriers through several integrated strategies. First, by utilizing the untapped time that families wait to be seen by their pediatrician, *SDP* alleviates the need for additional appointments for program delivery. Second, *SDP* is delivered during frequently scheduled and attended well-child

visits, thereby requiring no additional appointments for parents to attend. Lastly, *SDP* provides brief, but theoretically-based content that facilitates implementation and delivery by non-professionals or volunteers. Incorporating these diverse strategies minimizes costs and training and may lead to enhanced participation and implementation of evidence-based strategies in the primary care setting. If successful, this approach can be applied to the implementation of existing and the development of new programs in the primary care setting.

Our preliminary data suggest that *SDP* is a feasible and acceptable program that can be delivered during a pediatric well-child visit. Additionally, our results indicate that *SDP* is associated with a self-reported increased frequency of positive parenting practices among a small sample of families who attend a primary care clinic serving a large urban population. The improvements that were observed – about two points in the PIDA and PVR StimQ subscales – were statistically significant and comparable to other parenting interventions utilizing this measure (Mendelsohn et al. 2011). The brevity of the intervention, ease of implementation, and low cost also indicate potential clinical significance as well. Lastly, although we cannot conclude that the results of this pilot study are generalizable to all families given the relatively small sample size, we are encouraged that within our sample, the parents with the lowest levels of education and incomes appeared to find the intervention as helpful as other families in the study. This suggests that the *Sit Down and Play* may impact parenting practices among this highly vulnerable group.

There are limitations that are inherent to our pilot study. First, in our sample, the majority of the parents were non-white mothers. This along with the small sample size, does limit the generalizability of our results to a broader population, including fathers. Second, since parenting outcomes were measured based upon self-report, there may be a social desirability bias such that respondents may overestimate their practices. However, parents were administered a validated instrument used in previously published studies to measure parenting practices both prior to and after the intervention without being told the purpose of the study. Lastly, because there was no control group or comparison group in the design of the study we cannot conclude that *SDP* is more effective than the passage of time or no treatment, nor can we rule out other unmeasured confounding variables. Future research will incorporate a randomized control trial with a control group and with outcomes measured over a longer period of time to evaluate sustainability and efficacy of this promising program.

Despite these limitations, our pilot study does suggest potential for wide applicability of *SDP*. There has been much emphasis on enhancing parenting behaviors over the past decade as the positive impact on a child's future educational achievement has been made clear. The use of the primary care setting to deliver a brief, theory-based program during pediatric well-child visits offers a promising opportunity with a universal approach to enhance parenting behaviors and support early child development. Our results demonstrate that *SDP* is a feasible and acceptable program that can be delivered during an often unused and underutilized time of a pediatric well-child visit. Moreover, our results show that *SDP* is associated with a self-reported increased frequency of positive parenting practices. These results indicate potential for wide dissemination among an urban population, but further

studies are needed to determine its effectiveness on parenting behaviors and early childhood outcomes. If *SDP* is demonstrated to be effective for improving parenting practices, as well as enhancing early child developmental outcomes in a future randomized trial, it is our aim that primary care clinics will routinely offer such preventive strategies to enhance parenting practices.

Acknowledgments

Financial Disclosure:

The work described has been supported through funding provided by the National Center for Advancing Translational Sciences, National Institutes of Health, through Grant UL1TR000050. The funding source had no involvement in the study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication.

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Table 1

Sample Characteristics

Characteristic	N=30 (%)
Relationship to child	
Mother	27 (90.0)
Father	3 (10.0)
Highest Education Level	
High school and below	9 (30.0)
Some college	7 (23.3)
2 or 4 year college degree	10 (33.3)
Postgraduate	4 (13.3)
Marital Status	
Single	19 (63.3)
Married	11 (36.7)
Other	0
Parental Race/Ethnicity	
African-American	21 (70.0)
Hispanic	5 (16.7)
White	1 (3.3)
Other	3 (10.0)
Household Income	
<\$25,000	14 (46.7)
\$25,000–\$40,000	5 (16.7)
>\$40,000	10 (36.6)
Gender of Child	
Male	18 (60.0)
Female	12 (40.0)
Age of Child	
6–8 months	11 (36.7)
9–10 months	11 (36.7)
11–12 months	8 (26.7)
Insurance of child	
Medicaid	26 (86.7)
Private insurance	4 (13.3)
First born child	
Yes	15 (50.0)
No	15 (50.0)

Table 2*Sit Down and Play* and Parenting Practices (N=30)

	Pre-intervention (SD)	Post-intervention (SD)	Average Improvement (95% CI)
PIDA	3.1 (1.7)	5.0 (1.0)	1.9 (1.3–2.5)
PVR	6.6 (2.5)	8.8 (1.7)	2.2 (1.3–3.0)

SD=standard deviation; PIDA=Parental Involvement in Developmental Advance (range 0–7); PVR = Parental Verbal Responsivity (range 0–11); p-values for average improvement were all < 0.001.