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Computer-mediated parenting education: Digital family service provision

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ABSTRACT

Computer-mediated family service provision holds the promise of equal efficacy, lower cost, and higher accessibility than traditional parent education groups that require parents to travel to a service venue, thereby alleviating often-cited pragmatic barriers to participation in parenting programs. Hence, examinations of which populations are attracted to particular service modalities are a necessary step in building a reliable evidence base. The scant computer-mediated parent education literature indicates that online parenting programs are beneficial to indicated or secondary prevention programs seeking to bolster specific parent, child, or dyadic outcomes; it is reasonable to ask, then, if this service provision mechanism would be equally effective for all parents, outside of targeted intervention designs. The current paper describes the provision of computer-mediated parenting services to a large sample of parents (N = 192, 89.6% female, average age 40 years; 27% racial/ethnic minority) with no shared prevention indicator through an employer-based program. Our research questions on service provision and utilization include: Who is served by primary prevention programs like this? Do participants report satisfaction with computer-mediated services commensurate with traditional face-to face services? In addition to significant differences in perceived social support by gender, marital status, and number of children younger than 18 living in the home, results from three measures of parenting attitudes and behaviors (e.g., discipline style, sense of competence, and locus of control), indicate that this sample has some confidence in their general abilities as parents, but struggle to feel an internal sense of control over their children's behavior, with the greatest number of parents tending towards overreactive discipline. Associations between these indicate a consistent pattern such that dysfunctional parenting practices tend to co-occur, and parents who do employ dysfunctional strategies feel less competent as parents. Participants report high satisfaction with these services, at equal or better rates than reported in the parent education literature. This work provides evidence that computer-mediated parenting services can attract and exceed expectations of participants with clinical and subclinical but moderate parenting needs, indicating that this service delivery mode has the potential to reach a wide number of individuals ideally situated for prevention services.

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1. Introduction

In general, parenting education services can either be universal and support general adaptive parenting and family functioning (Webster-Stratton, 2001), or they can target particular child behaviors (i.e., disruptive behavior as found in O'Connor, Rodriguez, Cappella, Morris, and Mcclowry (2012)) or specific samples (i.e., incarcerated fathers as found in Wilczak and Markstrom (1999)). Further, parenting education offers families support that is, on average, far more cost-effective than therapeutic intervention (Crane & Payne, 2011). In 2015, the Pew Research Center reported that 75% of parents with children under age 18 use Internet-based services to find information about parenting. Of these parents, 74% use social media as a source of social support (Duggan, Lenhart, Lampe, & Ellison, 2015). Seventy-nine percent of parents see social media as a useful place to receive helpful information in general, and 59% report receiving valuable information regarding parenting via social media. The field of family science is well positioned to turn to technology-based service provision options as a means of connecting with a greater number of families who are seeking parenting support and information. This avenue for family service provision holds the promise of equal efficacy, lower cost, and higher accessibility than traditional parent education groups, which require parents to travel to a service venue, thereby alleviating often-cited pragmatic barriers to participation in parenting programs (Enebrink, Högström, Forster, & Ghaderi, 2012; Kazdin, Holland, Crowley, & Breton, 1997; Koerting et al., 2013).

Plantin and Daneback (2009) found that the majority of today's parents search for both information and social support on the Internet, but that patterns in computer-based information and support seeking may be different for different parents. In their sample, first-time, middle class mothers between the ages of 30 and 35 were most active in searching for parenting information on the Internet. This is not

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surprising, given that far more mothers than fathers participate in parenting education programs. For example, Schultz, Schmidt, and Stichter (2011) performed a comprehensive review of parenting education programs for parents of children with Autism, and found that only 23% of participants were fathers. Further, meta-analyses of participation trends in parenting programs echo these findings, with rates of fathers' enrollment around one quarter of mothers' enrollment (~20% for a given program; Stahlschmidt, Threlfall, Seay, Lewis, & Kohl, 2013).

Kazdin and Blase (2011, p. 28) call for "a portfolio of preventive interventions with various models," and evidence supporting the use of computer-mediated services is mounting. Gelatt, Adler-Baeder, and Seeley (2010) conducted a randomized control trial to evaluate the efficacy of an interactive web-based family life education program for stepfamilies. The program used videos to help parents and stepparents find practical solutions to common challenges that stepfamilies experience. In their diverse sample of 300 parents and stepparents with a child aged 11–15 years, participation positively influenced several key areas of parenting and family functioning, including a decrease in overreactive parenting and better stepfamily adjustment. Pacifici, Delaney, White, Nelson, and Cummings (2006) report positive gains in parent knowledge for foster and kinship caregivers after computer-mediated courses offered in a randomized experimental study with an intervention and control group, and Enebrink et al. (2012) found that, in a randomized study of parents of children aged 3–12 years diagnosed with conduct disorders, computer-mediated parent training yielded outcomes comparable to many group-based, in-person parent training programs, including more positive child behaviors (e.g., prosocial behavior) and a reduction of problem behaviors (e.g., conduct problems, hyperactivity) in children. Beyond these few more thorough studies, this computer-mediated parenting education literature includes several studies that present small pilot efforts, center service provision around niche populations, or focus on program development or feasibility without providing rigorous empirical testing (Choi & Bakken, 2010; Feil et al., 2008; Kobak et al., 2011; Loree, Beliciu, & Ondersma, 2014; Wade, Oberjohn, Burkhardt, & Greenberg, 2009). Across even these few studies, though, computer-mediated parenting programs receive high parent satisfaction scores, such that between 71% and 87% of participants were at least 80% satisfied with their service (Pacifici et al., 2006; Taylor et al., 2008), which suggests that parents are open and motivated to engage in family programming of this type.

1.1. Feasibility of employer-based computer-mediated parenting education

The existing literature on computer-mediated parenting education programs supports its feasibility in a general population (e.g.Choi & Bakken, 2010, Wade et al., 2009). However, to date, no study considers whether and in what ways corporations can use computer-mediated parenting education programs to support their employees' efforts to balance their work- and family-related responsibilities.

It is worth noting that previous computer-mediated parenting education programs largely service a privileged population of parents in that persons who have access to these programs tend to be partnered, have annual incomes higher than the national average, and are more educated than the typical population of human service recipients (Gelatt et al., 2010; Pacifici et al., 2006; Taylor et al., 2008). As a consequence, a concern about generalizability arises in situations where corporations offer computer-mediated parenting education to their employees, given that the individuals serviced (a) must be employed at the corporation, (b) must have access to the appropriate technology to participate in the program within their work setting, and (c) must have acceptable flexibility within their work schedule to allow for a break at the time the program takes place.

While it is true that computer-mediated parenting education may be more accessible for a more affluent sample of parents, the literature on affluent parents suggest that they, too, are seeking parenting education to address their concerns and to improve the quality of their home environment (Dearing & Taylor, 2007). It may be that the type of struggles faced by this population is different from their lower-resource counterparts. For example, Luthar and Barkin (2012) and Randall, Bohnert, and Travers (2015) argue that affluent parents may place pressure on their children to succeed and impose perfectionist standards that are difficult for their children to meet. Such high and often unrealistic standards are related to children's adjustment problems, including increased susceptibility to negative peer pressure, increased internalizing problems, and children's decreased life satisfaction. Further, there is evidence that affluent parents experience work–family conflicts that preclude leaving work in order to be home with their children when needed during the school day or monitoring their children during after-school work hours (Luthar & Latendresse, 2005). In addition to the demands of the work day schedule, they also tend to endorse beliefs that children should be independent and self-sufficient and they are likely to treat their children as more mature than their developmental stage might equip them to be (Luthar & Latendresse, 2005; Padilla-Walker, Christensen, & Day, 2011). Corporation-based parenting education delivered via webinar may be particularly useful to this population of parents due to ease of access and ability to address the common concerns experienced by this group.

1.2. Satisfaction outcomes

Satisfaction with service provision comprised a variety of specific indicators, such as the enjoyment of the physical space where service is provided, the staff involved in service provision, communication between client and provider, client engagement, effectiveness of the service, amount of payment required, and the ease of processes involved (Haskard, DiMatteo, & Heritage, 2009; Pilgrim, Cardona, Pinder, & Sonenstein, 2014; Simmons et al., 2014). As indicated above, satisfaction with parent education programs, particularly computer-mediated programs, tends to be high (Pacifici et al., 2006; Taylor et al., 2008). Broader research on program or service satisfaction beyond parent education highlights the importance of client satisfaction when assessing the utility and effectiveness of service provision. For example, satisfied individuals are more likely to perceive quality of care or of service, are more likely to comply with program recommendations, and are more likely to return for further services (Budzi, Lurie, Singh, & Hooker, 2010; Rosenberg, Waugh, & Burnhill, 1998). Furthermore, Heubeck, Otte, and Lauth (2015) found that, when services are offered in group settings, there is no change in level of client satisfaction when compared to clients who are receiving individual services. Taken together, there is evidence suggesting that a computer-mediated, group-based parenting education program offered online could be a satisfactory experience for parents.

Though not often studied in the broader parenting education literature, parent satisfaction is often assessed when providing special education services to children and families. Parent satisfaction is related to higher parental engagement in their children's education and to the perception of quality care (Bitterman, Daley, Misra, Carlson, & Markowitz, 2008; Laws & Millward, 2001). Satisfied parents often enjoy higher self-efficacy, are more likely to believe that they can influence the success and effectiveness of their child's education, and that they can contribute to their child's school environment (Laws & Millward, 2001). Given previous research on the relationship between parental satisfaction with special education support services and continued service utilization (Clifford & Minnes, 2013), satisfaction with parenting education may serve as a meaningful predictor of participant engagement and parenting program utilization, and, as such, may be an important marker of broader parenting education program feasibility.

1.3. The present study

The studies mentioned above indicate that computer-mediated parenting programs are beneficial to targeted or secondary prevention

programs seeking to bolster specific parent, child, or dyadic outcomes; it is reasonable to ask, then, if this service provision mechanism would be equally effective for all parents, outside of targeted intervention designs. There is very little published work to help answer this question. One exception is Sanders, Calam, Durand, Liversidge, and Carmont's (2008) assessment of the Positive Parenting Program (PPP), which indicates that a computer-mediated modification of PPP improved parenting and child outcomes in a large randomized study. Parents (94% biological mothers of a child 2–9 years old exhibiting concerning behavior) in this study were recruited through national and local newspapers, local news programs, posters, and emails, suggesting that a primary prevention approach to providing parenting education can be effective. The field of family service provision is well-positioned to guide effective program development and, as work by Hughes, Bowers, Thomann Mitchell, Curtis, and Ebata (2012) suggests, has identified frameworks for such guidance. Clearly, more work is needed before claims of effectiveness for computer-mediated service delivery modes can be confidently made. The goal of this paper is to build this literature by describing trends in participation in a computer-mediated primary prevention model for parenting education. Our aims are to demonstrate that self-selecting parents engaged in computer-mediated parent education 1) have low-to-moderate needs best served by sub-clinical prevention supports; and 2) that the use of computer-mediated service delivery does not compromise the satisfaction parents report with parent education services.

The current paper describes an effort to provide computer-mediated parenting services to a large sample of parents with no shared prevention indicator. Our research questions centered on participation trends: Do computer-mediated parenting education services differ in their utilization patterns or satisfaction rates than brick-and-mortar, or face-to-face programs? Could participants drawn to participate in computer-mediated services be described by a coherent pattern of participant characteristics, parenting style, and attitudes about parenting?

2. Methods

All study materials were approved by the Institutional Review Board at the University of Connecticut in 2012, as well as by our corporate partner's legal review team.

2.1. Participants

Participants ($N = 215$) were recruited from a global insurance company that employs approximately 47,860 individuals (76% female). Redundant entries from participants who enrolled in more than one webinar during the data collection timeframe were eliminated, reducing our sample size to 192 (89.6% of whom are female) first-time enrollees. Racial/ethnic diversity within the employee population comprised 69% European Caucasian/White, 17% African American/Black, 5% Asian, <1% Native Hawaiian/Pacific Islander, and 1% American Indian/Alaskan Native. Our sample approximates this racial/ethnic breakdown with a total of 26.6% racial/ethnic minority participants (73.4% European Caucasian/White – see Table 1). The company offers parenting education opportunities as part of their employee wellness program; many of the wellness programs are offered through web-based platforms, including the parent education webinars, which allow for real-time conversation between the session facilitator and participants. Employees were invited to sign up for wellness program offerings at the beginning of each month. Typically, webinars were held during the noon lunch hour, drawing an average group size of 75–110 participants and focusing on family-related topics such as Toxic Stress, Building Emotional Intelligence, and Positive Discipline. Recruitment spanned 12 parent education webinars offered over 4 months, with an average of 19% of total webinar attendees per session volunteering to evaluate their experience in the present study.

Table 1
Descriptive results.

Demographic characteristics ($N = 192$)	n	%	
Gender	Male	19	10.0
	Female	172	90.0
Ethnicity	Hispanic/Latino	10	5.2
	Non-Hispanic/Latino	181	94.8
Race	African American/Black	14	7.3
	European Caucasian/White	141	73.4
	Asian American	8	4.2
	Pacific Islander	2	1.0
	Biracial	3	1.6
	Other	13	6.8
Marital status	Single, never married	15	7.8
	Single, living with partner	4	2.1
	Married or partnered	147	76.6
	Married, separated from partner	2	1.0
	Divorced	21	10.9
	Widowed	2	1.0
Highest level of education	High school diploma/equivalent	8	4.2
	Some college, but no degree	37	19.3
	Associate's degree	35	18.2
	Bachelor's degree	65	33.9
	Some graduate, no degree	9	4.7
	Master's degree	37	19.3
	Doctorate degree	1	0.5
Household income	$20,000–$38,999	9	4.7
	$39,000–$59,999	18	9.4
	$60,000–$99,999	70	36.5
	More than $100,000	94	49.0
Variable of interest		M	SD
Age		40.4	7.4
Social support			
Friends		5.07	1.40
Significant other		5.54	1.47
Family		5.15	1.56
Parenting discipline style			
Laxness		2.71	0.98
Over-reactive		3.81	1.19
Hostility		2.12	1.06
Locus of control wrt child behavior		29.33	7.78
Sense of competence		3.70	0.66
Satisfaction		28.0	3.30

The sample described in this study comprised individuals with an average age of 40.44 years ($SD = 7.93$), 94.8% of whom reported being employed full-time. On average, the vast majority of families were parenting multiple children younger than 14 years of age. Seventy-eight percent of participants reported one or two children younger than 18 living in the home, with the largest family size of six children. Table 1 summarizes participant characteristics including participant race, marital status (78.7% married/partnered), the highest completed education level (59% bachelor's degree or higher), and annual household income (58.3% more than $100 k). More than half of the sample (55.5%) had previously attended a parent education program, and 83% ($n = 88$) of those parents who did have parent education experience had previously engaged in an online parent education webinar.

2.2. Measures

Electronic surveys were administered at two time points. Pre-webinar data on demographic characteristics, social support, and the three parenting surveys described below were collected 24 h prior to the start of the webinar session; follow-up surveys on participant satisfaction were distributed via email within 48 h after the webinar session.

2.2.1. Demographics sheet

The Demographics Sheet was composed of questions concerning racial/ethnic background, gender, marital and employment status, level of household income, and level of education, number and ages of children

living in the home, and parent education history (i.e., any previous parent education classes taken, including experience with computer-mediated classes).

2.2.2. Multidimensional Scale of Perceived Social Support

The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) is a 12-item questionnaire regarding individuals' perceived social support with scale scores specific to the support perceived from friends, family, and significant others. The measure uses a 7-point Likert scale where 7 = *very strongly agree* and 1 = *very strongly disagree*. Higher scores indicate greater levels of perceived social support. The scale has good internal consistency and internal reliability. Cronbach's coefficient alpha was .88 for the scale as a whole and .85, .87, and .91 for the friends, family, and significant other subscales respectively (Zimet et al., 1988). In the present study, alpha was .96 for the total scale and .95 for each of the three subscales.

2.2.3. Parental Locus of Control Scale

The Parental Control of Child's Behavior (PCCB) subscale of the Parental Locus of Control Scale (LoC-CB; Campis, Lyman, & Prentice-Dunn, 1986) consists of 10 questions and identifies the extent to which parents feel able to control their children's behavior, with high scores indicating parents' perceived inability to control their children's behavior and an external locus of control when faced with the stresses of parenting. The measure uses a 5-point Likert scale where 5 = *strongly agree* and 1 = *strongly disagree* and has acceptable internal consistency with a Cronbach's alpha of .71 (Campis et al., 1986). In the present sample, Cronbach's alpha was .89.

2.2.4. Parenting Sense of Competence Scale

The Parenting Sense of Competence (PSoC; Johnston & Mash, 1989) scale is a measure of parental self-efficacy. Parents rate the extent to which they agree or disagree with statements concerning childrearing-related feelings of accomplishment and competence using a 6-point Likert scale where 6 = *strongly disagree* and 1 = *strongly agree*. Higher scores indicate greater parenting self-esteem. Johnston and Mash (1989) reported internal consistencies of .75 for the Satisfaction scale, .76 for the Efficacy scale, and .79 for the overall scale; in the current paper, alphas for the Satisfaction scale, Efficacy scale, and total scale were .79, .81, and .83 respectively.

2.2.5. Parenting Scale

The Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993; Rhoades & O'Leary, 2007) is a 30-item scale that assesses parents' disciplinary practices. Parents indicate their tendencies to use specific discipline strategies using a 7-point Likert scale where 7 = *frequent use of discipline mistake* and 1 = *frequent use of effective discipline*. The measure has acceptable internal consistency with Cronbach's alphas for Laxness, Over-reactivity, and Hostility factors reported as .83, .82, and .81, respectively. Scores from this measure indicate the extent to which dysfunctional discipline practices are used by parents, including laxness (i.e., permissive, inconsistent discipline), over-reactivity (i.e., irritability and harsh, authoritarian discipline), and hostility (use of verbal or physical force). Higher scores signify a greater usage of dysfunctional parenting practices. This measure had acceptable internal consistency in the present sample, with alphas of .72 .78, and .54, for the laxness, over-reactivity, and hostility subscales respectively.

2.2.6. Client Satisfaction Questionnaire

Participants' level of satisfaction with the parent education program was determined with the Client Satisfaction Questionnaire (CSQ; Larsen, Attkisson, Hargreaves, & Nguyen, 1979). The CSQ was designed specifically to assess clients' general satisfaction within the domains of health and human services. Participants rated the quality of the services that they received and the extent to which they would recommend the program to a friend using the 8-item questionnaire. Possible range of scores on the CSQ is 8–32, where higher scores indicate greater satisfaction with the program. The reported internal consistency of the CSQ is excellent (Cronbach's alpha = .91) and it was found to be acceptable in the present sample (Cronbach's alpha = .84).

2.3. Procedure

In the present study, participants were asked to complete a set of questionnaires prior to the start of the parenting education webinars. Participants who pre-registered for the webinars (n = 195) received an email 24 h prior to its start with a link to the survey website, which asked participants to complete the measures, including a demographics sheet, the Multidimensional Scale of Perceived Social Support, the Parental Locus of Control Scale, the Parenting Sense of Competence Scale, and the Parenting Scale. Participants were not required to pre-register for the webinars, nor were they required to complete the pre-webinar survey in order to participate in the webinars. Completion of these measures took less than 15 min. Upon completion of each webinar, links to the satisfaction survey were distributed to all webinar participants via email within 48 h. In cases where participants enrolled in multiple webinars in the series, only the first set of completed pre-webinar measures and satisfaction survey was used.

On the day of each webinar session, participants logged on to an audiovisual conferencing program to attend the webinar. Though no webcams were used during the session, the participants had access to the facilitator's PowerPoint presentation and the audio capabilities and live chat text window software options were enabled so that participants could ask questions to the facilitator throughout the webinar. With 30 years of experience as a parent educator, the facilitator was skilled in actively engaging with the participants during each session by asking questions to participants and enabling the "hand raising" function on the conferencing software. This function allowed the facilitator to ask questions that might be answered with a show of hands, giving important formative information about the group back to the facilitator in real time. For example, the facilitator frequently used this function to assess how common a shared experience was within the audience, asking – for example - "how many of you have ever felt frustrated when….?". The facilitator was explicit in structuring these points of feedback and would present for five to seven minutes, on average, before eliciting feedback from the participants. The live chat text window open to all participants and the use of the "hand raising" signals encouraged active engagement and mutual participation so that participants could get the most out of their experience and could enjoy a more interactive experience than webinars that permit only passive viewership.

3. Results

There were no significant differences in parenting or social support measures by participants' race/ethnicity, age, or the highest education level; there were, however, significant differences by gender, marital status, and the number of children younger than 18 living in the home (μ and *SD* are presented in Table 1). Men reported significantly higher social support (μ = 6.06, *SD* = 1.02) from significant others compared to women (μ = 5.50, *SD* = 1.49; $t_{(25)} = 2.1$, $p < .05$; test adjusted for inequality of variances). Similarly, there were significant differences in social support by marital status, such that married or partnered people reported higher social support from their significant others (μ = 5.70, *SD* = 1.42) than those who were not currently partnered (μ = 4.91, *SD* = 1.54; $t_{(183)} = 2.97$, $p < .01$). This same pattern was evident in reports of social support from family ($\mu_{partnered} = 5.29$, *SD* = 1.49; $\mu_{non\text{-}partnered} = 4.52$, *SD* = 1.71; $t_{(183)} = 2.74$, $p < .01$). There were significant effects for the number of children younger than 18 living in the home on parent reports of social support from significant others and parents' sense of competence: Those with 3 or more children reported lower social support from their significant other than those with fewer than 3 children ($F_{(2183)} = 4.1$, $p < .05$) and levels of

competence were lower for those with greater numbers of children ($F_{(2166)} = 3.1$, $p < .05$).

The majority of participants ($n = 128$, 67%) reported having moderate parental confidence, but often felt unable to control their children's behavior sufficiently to meet their expectations of themselves as parents. Parents in this sample were more likely to use over-reactive discipline styles than either hostile or lax responses, with average subscale scores of 2.7 for laxness, 3.8 for over-reactivity, and 2.1 for hostility. Although the means for this sample on the whole fall below the clinical cutoffs for each discipline style (3.5, 3.9, and 2.9, respectively; Rhoades & O'Leary, 2007), the number of participants with scores over these thresholds is perhaps worth noting. Half (50.3%) of participants were over the clinical cutoff for over-reactivity, one fifth (20%) of participants were over the clinical cutoff for laxness, and nearly a quarter (23.9%) of participants were over the clinical threshold for hostility. Based on the majority trends from these three measures of parenting attitudes and behaviors, this sample could be best summarized as having some confidence in their general abilities as a parent, but struggle to feel an internal sense of control over their children's behavior, with the greatest number of parents tending towards over-reactive discipline.

Beyond significant associations among the demographic characteristics income, age, and education, there were significant correlations between parents' sense of competence and sense of control with regard to their child's behavior (in addition to expected associations between all subscales of the Parenting Scales; Rhoades & O'Leary, 2007). These associations indicate a consistent pattern such that dysfunctional parenting practices tend to co-occur, and parents who do employ dysfunctional strategies feel less competent as parents, as summarized in Table 2.

Post-webinar satisfaction data were collected from 35 participants. Given that the possible range of scores for the CSQ is 8–32, the mean satisfaction score of 28 ($SD = 3.3$) indicates that these participants were, on average, highly satisfied with the webinar. These satisfaction rates are equal to or better than the rates reported in the parenting education literature (Pacifici et al., 2006; Taylor et al., 2008), indicating that there is promise in delivering parenting education that is highly satisfactory to parents in webinar format.

Due to the corporate employer's concerns about participants' anonymity and their desire to use satisfaction data from the maximum number of employees for program evaluation purposes, satisfaction survey links were sent to all webinar attendees regardless of whether they had signed up for the webinar in advance and had completed the pre-webinar measure set. As a consequence, only 57% ($n = 20$) of satisfaction responses can be linked to participants' demographic characteristics. Among these, no significant differences in satisfaction scores were found based on parents' reported age, gender, race, marital status, or number of children, indicating that satisfaction was not significantly associated with participant demographic characteristics in the present sample.

Table 2
Associations between participant characteristics and variables of interest (N = 192).

Variable of interest	1	2	3	4	5	6
Number of children	–					
Laxness	−.01	–				
Over-reactivity	.16*	.38**	–			
Hostility	.03	.28**	.48**	–		
LoC child behavior	.13	.44**	.66**	.36**	–	
Sense of competence	−.17*	−.42**	−.63**	−.25**	−.67**	–
Satisfaction†	.06	.06	−.29	.10	−.07	.04

*p < .05, **p < .01.
† Correlations between parenting variables of interest and satisfaction scores are reported for linked cases ($n = 20$).

4. Discussion

Results from this evaluation of a novel, employer-based parenting education webinar series contribute much needed detail to the literature on computer-mediated service provision. Support seeking through computer-mediated platforms (i.e., distance learning, social networking, and other online support group mechanisms) is increasingly common (Johnson, 2015); therefore, examinations of which populations are most attracted to, and best served by, particular venues is a necessary step in building a reliable evidence base.

Kazdin and Blase (2011) suggest that "…the use of various technologies to deliver treatment has the ability to reach a large proportion of the population in need of services" (p. 25). One of the potential benefits of using computer-mediated service delivery is greater access to a population of parents whose work schedules and settings lend themselves to webinars. Parenting education delivered via webinar may be particularly desirable for parents who struggle with work-family balance or who prefer the relative anonymity of the webinar environment. Given the full time employment status of the participants in this study, the workplace environment makes for an ideal service venue for participating in web-based parent education programs. It is often erroneously assumed that affluence inherently indicates a lack of parenting stressors. To the contrary, previous research confirms that even wealthy parents with access to abundant resources could benefit from parent education services that address the needs of all families regardless of financial status (Dearing & Taylor, 2007; Luthar & Barkin, 2012; Luthar & Latendresse, 2005). As indicated by the finding that more than half of the present sample had engaged in at least one parent-education program in the past, there is sufficient evidence that this group of working parents will seek parenting services, particularly those offered in the workplace. Further, as more than half of the sample reporting parting styles that fall over clinical cut-offs, there is a clear unmet need that might be well-served by employer-based service provision.

There are important prevention implications from the present findings on parents' sense of competence and locus of control with regard to their children's behavior. Parents with lower self-efficacy and an external locus of control are likely to respond to the stress of parenting differently than those who feel capable and effective in their relationships with their children (Campis et al., 1986). Specifically, efficacious parents who feel confident in their role and have positive attributions about parenting are likely to take intrinsic interest in, and enjoyment from, parenting tasks, forecasting interactions with their children that are characterized by high responsivity and that bolster adaptive child outcomes. Conversely, parents' despondency, characterized by a sense of burden or incompetence, negative attributions, and dissatisfaction with parenting, can operate as a precursor to negative parent–child interactions with potentially deleterious physical, social–emotional, and cognitive outcomes for children (Ardelt & Eccles, 2001; Bernstein, Laurent, Measelle, Hailey, & Ablow, 2013; Coleman & Karraker, 1997; O'Connor et al., 2012; Wilson, Gardener, Burton, & Leung, 2007). The present results indicate parents' reports of low efficacy and a propensity towards irritability and harsh parenting are noteworthy: 50% of participants fall above the clinical cut-off for over-reactive parenting, with mean scores almost a full standard deviation higher than reported population means from a normative community sample (Rhoades & O'Leary, 2007). It is this finding that has perhaps the largest implications for universal prevention service delivery. The present effort was not a targeted intervention that selected participants with a particular set of parenting attitudes or behaviors, but those self-selected for these services seem to have a particular profile of those in need of support – including clinical levels of parenting needs. The prevention implication is powerful: Computer-mediated parent education seems to attract parents who may report clinical levels of parenting struggles plus more modest struggles with their sense of competence. This need, if left unaddressed, might evolve over time into far more severe needs breaching a greater set of clinical thresholds.

Satisfaction with program experiences may be key in predicting service utilization. Given that parent education services may be a particularly important mechanism for bolstering parental competence, ensuring the satisfaction of participants – thus their continued utilization of, and engagement in, these services – is important. General satisfaction with this particular parenting education program was high ($M = 28$, range = 8–32). It is worth noting that, while the measure used to assess satisfaction in this study did not measure specific indicators of program satisfaction, the qualities of the facilitator likely played a role in participants' perceptions of the program quality. There is evidence from previous research suggesting that providers who are warm, attentive, actively listen, and are concerned with the individual needs of their clients are likely to receive high satisfaction scores (Abdel-Tawab & RamaRao, 2010; Budzi et al., 2010; Haskard et al., 2009). The facilitator in the present study exemplified each of these characteristics during the webinar sessions and intentionally focused on eliciting active participation from parents regularly throughout all webinar sessions. Evidence shows that satisfied consumers are likely to engage with their service providers in positive ways (Haskard et al., 2009), creating a mutually enjoyable parenting education environment where both the facilitator and the participants are engaging in continued positive, beneficial interactions. In the future, studies concerning participant satisfaction with online parenting education online should measure specific indicators, including facilitator qualities, of satisfaction. This will require that new measures of satisfaction be developed and validated for use in computer-mediated venues, as none with a rigorous evidence base to support their use are available in the extant literature to date. It may also be that participants in this particular sample, the majority of whom had previously engaged in parent education programs, were biased and chose to participate in the current webinar series because of previously satisfying experiences. However, there was no correlation between parent education history and participant satisfaction and, given the small number of participants who answered both questions regarding history with online parent education and satisfaction ($n = 20$), it is not possible to confidently determine if there is a difference in webinar satisfaction based on the extent of previous experience with online education programs. Nonetheless, these high satisfaction scores, taken together with our finding that parents with clinical parenting needs will self-select into computer-mediated service provision, suggest that participants were happy with their choice to engage in parenting services and may see the positive outcomes reported with more satisfied engagement over time (Haskard et al., 2009). Future work should work with corporate partners to ensure adequate follow-up over time.

The perceived social support group differences found in this study are generally consistent with expectations: participants with partners felt more supported by their significant other and family than divorcees, widows, and those who otherwise reported being single, and those with more children felt less supported than those with fewer. The group difference test indicating men felt more supported than women is interesting and echoes previous findings by Leinonen, Solantaus, and Punamäki (2003) and Newland et al. (2013), but given the low numbers of male participants in the study, should be interpreted with a good deal of caution (further discussion of disproportionate gender participation follows, below).

4.1. Limitations and future directions

The mode of the parenting education delivery (i.e., via webinar) lent itself to employees who had a lunch break and access to a computer at the time the webinars took place. In so doing, employees who did not meet these criteria were effectively unable to participate in the webinars. The homogenous, relatively privileged nature of the present sample is likely due to access restrictions that are a function of webinar services in a corporate setting. Future research concerning computer-mediated parenting education must consider the ways in which employees in more resource limited settings can effectively be reached.

Further, it is worth noting that our corporate partners offered parenting education webinars to their employees as part of an employee wellness program that aims to improve work–life balance and to increase the productivity of the employees who participated in the webinars. Previous research has indicated that employees who experience work–family conflict are less productive in the workplace and less committed to the company (Duncan & Pettigrew, 2012; Vanderpool & Way, 2013). Companies who offer environments that are supportive of families by offering flexible schedules, as well as family-friendly policies and programs specifically aimed at improving well-being and family lives, have productive employees who are satisfied with their work-family balance (Chen et al., 2015; Duncan & Pettigrew, 2012; Vanderpool & Way, 2013). Other employment settings may be less interested in, or may not lend themselves as well to, offering parenting education via webinars to their employees. To address issues of implementation at the corporation level and access at the individual level, future research should consider altering methodology to suit the needs of the target population (e.g., offering online parenting education with a telephone call-in option for persons without computer access, offering webinars at alternative times of the day).

Average scores on parenting behaviors and attitudes in the present study suggest that these parents struggle to feel competent or consistently in control of their child's behavior; however, the study lacks a direct measure of parenting stress or needs assessment that might have articulated the goals and self-identified needs of this sample. Additionally, a broader measure of parental attributions (i.e., of their children or of themselves more broadly beyond a sense of efficacy in controlling their children's behavior) was not possible given concerns for participant burden. A final pragmatic limitation must be acknowledged: Corporate employer policy and practices concerning individual employee protections precluded consistent documentation of the demography of each participant. We took an inclusive approach to the follow-up recruitment, accepting any participant's surveys regardless of linked demographic data from the pre-webinar measure set.

While this paper represents a novel contribution to the parent education literature by examining employer-based services, a caution regarding generalizability must be made. Results from this work represent a single corporate employer and a sample drawn from its population: A largely European Caucasian/White, female and full-time employee workforce with reliable and easy access to computers. While the sample drawn here is representative of this larger corporate employee population, further research is needed on employer-based services offered to more diverse populations, in particular those who work fewer hours or whose work is less computer oriented.

As with other parenting programs, the present study found steep differences in participation across parents' gender. The extant literature on parent education at large indicates that fathers' rates of participation in parenting programs are ~20% for a given program (Stahlschmidt et al., 2013), rates not met in the present study (~10%), thus limiting our ability to thoroughly test for gender effects. The recruitment materials used for this study were designed to be universal and did not target one gender over another, potentially a missed opportunity given that parent education programs that explicitly include men support child and parent outcomes (Lundahl, Tollefson, Risser, & Lovejoy, 2007). While recruitment materials are only one facet of a program that might attract or dissuade fathers' participation, research has documented unique features of fathers' attitudes towards seeking support than can be addressed through tailored recruitment approach (i.e., informal word of mouth and program alumni testimonials, or offering other desired content as a complimentary service; Stahlschmidt et al., 2013). Future efforts should pay particular heed to this gendered service utilization trend, as it may be exaggerated in online service modalities: Based on recent Pew center survey, women may be more likely to seek out, receive, and give information and support via computer-mediated

platforms (Duggan et al., 2015). Mothers are more likely than fathers to engage in a number of social media platforms, and they report responding to other parents' good and bad news, finding emotional support, and enjoying helpful information and parenting advice via social media outlets more than fathers. Future studies of computer-mediated parenting services may also consider examining the effect of group size on engagement in an online setting.

This study represents an important effort by a large-scale employer to provide family-focused services to their staff as one component of their wellness programming. Efforts like this mark a valuable opportunity to address work–life balance without adding the often-cited practical barriers to service engagement for parents (Kazdin et al., 1997; Koerting et al., 2013). Parenting interventions are a meaningful avenue for creating enduring positive change in children's and family outcomes (Sandler, Schoenfelder, Wolchik, & McKinnon, 2011), and a rising pressure to improve the rigor and sophistication of the methods used to foster parenting changes (Powell, 2013). This work provides evidence that computer-mediated parenting services can attract participants with clinical and moderate subclinical parenting needs, indicating that this service delivery mode has the potential to reach a wide number of individuals in need.

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