

A Process Investigation of an Internet-Delivered Parent-Infant Interaction Intervention



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BACKGROUND: Behavioral parent training (BPT) is the single most effective intervention available to improve parent-child relationships and reduce the potential for child maltreatment (Taylor & Biglan, 1998, Haugaard & Feerick, 1996). Unfortunately, access to effective behavioral interventions is severely limited for many of those most in need. With recent advances in multimedia technology and the rise of Internet computer networking, there now exists an opportunity to provide interventions to families with limited access to services. However, little is known about the role that intervention process variables, such as long-distance parent engagement, may play in Internet-delivered interventions (Feil, et al., 2008; Baggett et al., 2010).

METHOD: The sample for this investigation were nineteen low income mothers-infant dyads who comprised the treatment group of a small randomized control trial of the InfantNet program, an Internet adaptation of the Play and Learning Strategies (PALS; Landry et al., 2008). Mothers within the sample were living in Lane County, Oregon and were income-eligible for EHS and the Women Infants and Children program (WIC) as defined by an annual gross income at or below 185% of the U.S. Poverty Income Guidelines. At the time of enrollment, infants were, on average, 4 months of age.

As part of the InfantNet program, weekly session phone conversations were held, between mothers and their coach, centered on mothers': a) responses to session check-in questions; b) behavior during observational interaction with their infant as they display the skills learned; c) the quality of mother's comments during discussion with the coach; and d) engagement with the program material and coach. After each weekly call skills mastery, concept mastery, and maternal engagement were rated by the coach based on 1-4 scales reflecting a) how well mothers demonstrated the skills being taught during the program-required, video-recorded mother-infant interaction; b) mothers' ability to be at ease with and verbalize to the coach the concepts being taught; and c) how connected the mother was to both the material and coach.

In the current study, we examined the extent to which quality of the distance mother-coach relationship (as defined by maternal engagement and concept mastery) was related to: a) behavioral skills mastery over the course of intervention; as well as b) maternal and infant behavior outside of direct intervention (assessed at pre-post assessment during the RCT).

Gaining a better understanding of the nature of the mother-coach relationship and how it relates to intervention outcomes is an important step toward identifying the critical aspects of Internet-delivered interventions that can maximally support successful distance learning and behavior change.

RESULTS: The quality of early mother-coach interactions during InfantNet implementation was significantly related to both concurrent and mid-session skills mastery. Quality of interaction continued to influence skills acquisition through later sessions. Skills Mastery achieved by mothers across the course of interaction was significantly related to observed maternal positive behavior at the end of intervention as well as observed positive change in infant behavior across the course of intervention. Quality of the mother-coach interaction, on the other hand, was related to observed positive change in maternal behavior across the course of intervention as well as to mother's level of positive play observed at the end of intervention. It is possible that skills mastery, being the behavior mothers learn to perform with their infants, results in increases in positive infant behavior. It is the quality of the mother-coach interaction, however, that relates to acquisition of these positive maternal behaviors in interaction with her infant; these contentions are support by the correlation found between change in maternal and infant positive behavior.

Early Quality of Interaction	Early Skills Mastery		n=5	Early Quality of Interaction	Later Skills Mastery		n=5	Later Quality of Interaction	Later Skills Mastery		n=1
	NO	YES			NO	YES			NO	YES	
	NO	5 100%			0 0%	4 80%			1 20%	1 100%	
YES	83% 26%	0% 0%	57% 22%	9% 5%	0% 0%	7% 7%	YES	0% 0%	14 93%		
	1 7%	13 93%		3 23%	10 77%			0 0%	14 100%		
	17% 5%	100% 68%		43% 17%	91% 56%			0% 0%	14 93%		
	n=6	n=13		n=7	n=11			n=1	n=14		
	X ² =14.70, p < .001			X ² =4.92, p < .05				X ² =15.00, p < .001			

Variables	Correlation (n=19)
Maternal Skills Mastery with observed:	
1) Maternal Warmth	r= .40*
2) Maternal Responsiveness	r= .51**
3) Increases in Infant Positive Play	r= .54**
Quality of Mother-Coach Interactions with:	
1) Maternal Total Positive Play	r= .54**
2) Increases in Maternal Positive Play	r= .37*
Relation of Change in Maternal Positive and Infant Positive Behavior	r= .35*

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