

# Innovative Use of Influential Prenatal Counseling May Improve Breastfeeding Initiation Rates Among WIC Participants

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## ABSTRACT

**Objective:** To determine whether integrating influence strategies (reciprocation, consistency, consensus, feeling liked, authority, and scarcity) throughout Chickasaw Nation Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) clinics (1) changed participants' perception of the WIC experience and (2) affected breastfeeding initiation rates.

**Methods:** Two-part, quasi-experimental design.

**Setting:** Four WIC clinics.

**Participants:** Parents and caregivers of children birth to 3 years.

**Intervention:** Behavior change intervention based on Social Cognitive Theory using Cialdini's Principles of Influence. Traditional-model groups (control) received services prior to the intervention; influence-model groups (experimental) received services after initiation of the intervention.

**Main Outcomes:** The preliminary demonstration project surveyed 2 groups to measure changes in their perceptions of the WIC environment. Secondary data analysis measured changes in breastfeeding initiation in 2 groups of postpartum women.

**Analyses:** Frequency analysis, independent sample *t* tests, chi-square for independence, step-wise logistic regression.

**Results:** The demonstration project resulted in 5 improved influence measures ( $P < .02$ ), aligning with the influence principle of "feeling liked." The model had a small effect ( $\phi = 0.10$ ) in distinguishing breastfeeding initiation; women in the influence model were 1.5 times more likely (95% CI, 1.19–1.86;  $P < .05$ ) to initiate breastfeeding compared with women in the traditional model, controlling for parity, mother's age, and race.

**Conclusions and Implications:** Consistent with Social Cognitive Theory, changing the WIC environment by integrating influence principles may positively affect women's infant feeding decisions and behaviors, specifically breastfeeding initiation rates.

**Key Words:** breastfeeding, low-income population, decision theory, Chickasaw Nation (*J Nutr Educ Behav.* 2014;46:458–466.)

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## INTRODUCTION

The benefits of breastfeeding to infants are well established. For the infant, these benefits include lower rates of respiratory tract and ear infections in the first year of life,<sup>1</sup> reduced risk for gastrointestinal tract condi-

tions,<sup>2</sup> reduction in the incidence of type 1 and 2 diabetes mellitus and adult obesity,<sup>3,4</sup> and a protective effect against allergic diseases<sup>5</sup> and celiac disease.<sup>6</sup> To optimize the benefits, the American Academy of Pediatrics recommends that breastfeeding be initiated immediately after birth, be

exclusive for about 6 months, and be continued with appropriate complementary food for at least the first year.<sup>7</sup>

To expand the health benefits of breastfeeding to more infants, the Healthy People goal for breastfeeding initiation was increased from 75% by year 2010 to 81.9% by year 2020.<sup>8</sup> Reaching this national goal also has potential to result in economic benefits.<sup>9</sup> A recent report issued by the Agency for Healthcare Research and Quality concluded that if 90% of US mothers exclusively breastfed for 6 months, there would be an economic savings of \$13 billion per year.<sup>9</sup>

Progress has been made in recent years, as evidenced by data from the 2012 Breastfeeding Report Card, which indicated that for the general

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population 76.9% of mothers in the US reported ever breastfeeding their infant.<sup>10</sup> However, disparities exist in breastfeeding initiation rates between population subgroups.<sup>11</sup> Hispanic mothers reported the highest breastfeeding initiation rate at 81% compared with the lowest rate of 58% among black, non-Hispanic mothers, 74% among American Indian/Alaska Native, and 76% of white, non-Hispanic mothers.<sup>11</sup> Of greater concern is the disparity among socioeconomic groups. The National Immunization Survey reflected that 67% of infants living in low-income households (< 100% national poverty level) were ever breastfed compared with 83% of infants in higher-income households (> 350% of national poverty level).<sup>11</sup> Other factors limiting breastfeeding rates are the number of children (ie, increased responsibility) and mother's age. In a study conducted by Murimi et al,<sup>12</sup> mothers reported that if they could devote less time to other responsibilities and more time with the infant, they would be more likely to breastfeed. Vaaler and colleagues<sup>13</sup> investigated breastfeeding attitudes and behaviors and reported that teens held less positive attitudes and had less intention to breastfeed than mothers aged  $\geq 30$  years. These data provide evidence of the need to identify and implement new and innovative programs and strategies to reach the Healthy People 2020 breastfeeding initiation goals.

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) fully endorses breastfeeding as the normative standard for infant feeding.<sup>14</sup> The program has undertaken multiple initiatives to further this goal, including enhanced education, breast pump loans, hospital-based programs, peer counseling, and enhancement of the postpartum and breastfeeding woman's food benefit package.<sup>10,14,15</sup> Some evidence suggests that breastfeeding-specific interventions may have an effect on breastfeeding rates but at best have insignificant outcomes unless they have multiple prenatal and postnatal components and include lay support and peer counseling for Latinos.<sup>14,16</sup>

Child feeding messages often fall short of desired outcomes because they are framed around fact and logic rather than the emotions and values

that drive behaviors, such as family and cultural norms and traditions, consistency with previous decisions, and sense of worth and belonging.<sup>17,18</sup> In turn, people often turn to ingrained responses.<sup>19,20</sup> Aligning health care settings and messages with the factors that drive behaviors may be helpful in influencing parents' child feeding decisions.<sup>19</sup>

Aligning WIC environments and messages with values that influence decisions may influence parents' child feeding practices.

Previous research identified 6 principles that influence ingrained responses and a person's tendency to move toward a desired behavior<sup>17,19</sup>: reciprocity, consistency, consensus, liking, authority, and scarcity. Each is governed by a fundamental psychological principle that is impactful across cultures.<sup>17</sup> The rule of reciprocity suggests that when people are given a favor, they feel need to provide one in return. Consistency is a strong desire to follow through with commitments. Consensus is deciding what appropriate behavior is by examining the actions of others. People are more inclined to say "yes" to the requests of others who they feel like them. Obedience to authority is a deep-seated sense of duty within people. The principle of scarcity implies that opportunities seem more valuable when their availability is limited. Redelmeier and Cialdini<sup>19</sup> suggested that awareness of these principles and their application in a health care setting can serve as powerful sources of influence in helping people make beneficial choices. [Table 1](#) provides a summary of the principles of influence, associated ingrained responses, and strategies applicable to WIC clinic settings.

The efficacy of influence principles to affect child feeding decisions away from ingrained responses may be explained by Social Cognitive Theory, which theory posits that a reciprocal determinism exists among personal (ie, thoughts and feelings), behavioral

(ie, knowledge and skill capabilities), and environmental (ie, physical and social) factors that function in a dynamic fashion to influence health behaviors.<sup>21</sup> It is plausible that integrating the influence principles into WIC clinic settings would result in a socially different environment and reciprocally affect parents' child feeding decisions and behaviors.

To the authors' knowledge, there is no published work reporting application of Cialdini's<sup>17</sup> principles of influence in WIC clinic settings to address parents' child feeding decisions. An initial demonstration project examined the impact of the comprehensive integration of the influence principles into 4 WIC clinic settings on WIC participants' perception of the WIC experience. The findings established that the integration of the principles into the WIC clinic experience made clients feel liked by others (ie, WIC staff). Based on the premise that people are more likely to say "yes" to the requests of others who they feel like them, a subsequent study using secondary data from the same clinics was initiated to evaluate the impact on breastfeeding rates. It was hypothesized that breastfeeding initiation rates would be higher among women receiving services from WIC clinics aligned with influence principles compared with women receiving benefits before the principles are implemented. Although a dosage of human milk provides the greatest benefits, there are benefits for any amount of human milk received by the infant,<sup>7</sup> and this only occurs if a mother first makes the decision to initiate breastfeeding. As such, the analysis of secondary data evaluated changes in breastfeeding initiation rates before and after implementation of the influence principles.

## METHODS

The initial demonstration project and the subsequent secondary data analysis study both used a quasi-experimental design to respectively evaluate (1) the effect of fully integrating the principles of influence into the WIC clinic setting (ie, physical and social environment) on WIC clients' perception of the WIC experience, and (2) changes in rates of

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