A Cultural Adaptation of Functional Communication Training

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A Cultural Adaptation of Functional Communication Training

by

Anna Rosio Garcia

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctoral of Philosophy
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ABSTRACT

Disparities in the use, quality, and outcomes of treatments, and the barriers that deter Hispanics from receiving healthcare services have been widely studied. Yet, similar efforts have been slow in the field of Applied Behavior Analysis (ABA). A way to decrease treatment disparities is to assess the influence of cultural variables in behavior analytic interventions, and to evaluate whether manipulations to these variables improve the overall results of the interventions among Hispanic families. During this study, we adapted functional communication training (FCT) to Hispanic parent’s cultural values, we assessed the preference for culturally adapted and non-culturally adapted functional communication responses (FCR), and we evaluated the social validity of both FCRs. We achieved this by creating the Culturally-Adapted Response Evaluation Survey (CARES) for behavior analysts to use as a guide when interviewing parents to identify an FCR that adheres to the families’ cultural values. We evaluated parents’ preference for each FCR using a multiple-baseline design in which parents were trained to implement procedures to maintain the FCR that was taught and we provided parents an opportunity to choose the FCR they wanted to reinforce. The results of the study and their implications for ABA services are discussed.
CHAPTER ONE

INTRODUCTION

Treatment Disparities

The US population is rapidly increasing in diversity. Minorities currently account for 30% of the US populations and this percentage continues to grow. More than 50% of the US population is expected to be of minority descent by the year 2050. The Hispanic population is the largest and fastest growing minority group in the United States; it is made up of people of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture (U.S. Census, 2011). According to the U.S. Census (2011), there are about 54 million Hispanics in the U.S., and they comprise 16% of the U.S. population. They accounted for half of the growth of the U.S. population in the years 2000 to 2010. These growing numbers are concerning because Hispanics receive health care and mental health services at disproportionate rates, and an increasing percentage of Hispanics may not receive the services they need.

Hispanics have higher disparity rates in the health care and mental health field when they are compared to their non-Hispanic counterparts. Health disparities are differences in the incidence, prevalence, mortality and burden of diseases and other adverse health conditions that exist among specific populations in the United States (U.S. Department of Health and Human Services [DHHS], 2015). Hispanics have the largest prevalence of diseases such as diabetes, chronic kidney disease (Heron, 2013; DHHS, 2015), yet; they are less likely to receive medical services. When they do receive services, they are more likely to receive lower quality services,
and more inpatient hospitalizations and emergency room services. A similar pattern occurs in the mental health field. Hispanics are less likely to receive mental health care and evidence-based treatment, although they have similar rates of mental illness to Caucasians (U.S. Department of Health and Human Services [DHHS], 2001).

These disparities are even greater among Hispanics diagnosed with intellectual and developmental disabilities (IDD) (Gulley, Rasch, & Chan, 2014; Scott & Havercamp, 2014). Scott and Havercamp (2014) surveyed 20,395 adults with IDD and found that minorities were less likely to receive routine care services (e.g., visiting a dentist, seeing a general practitioner, receiving a flu shot, and receiving a mammogram). Magana, Lopez, Aguinaga, and Morton (2013) found similar results when they interviewed parents of Hispanic and Caucasian children with and without autism spectrum disorders (ASD) to assess the use of treatment programs for the ASD population. All the parents lived in Wisconsin where the law dictates that children under the age of 8 can get free evidenced-based treatment for autism. The interventions they examined included ABA-based therapies provided through the Medicaid waiver. They found that Hispanic children with ASD are less likely to receive Birth to Three and Medicaid waiver-funded services, and are more likely use fewer services overall and have more unmet service needs. They also found that Caucasian children are more likely to receive recreational programs, psychological services, respite, and intensive autism therapy.

This disparity also occurs in the quality of health care services for children with autism. Magana, Parish, Rose, Timberlake, and Swaine (2012) interviewed parents of African American, Hispanic, and Caucasian children with autism. They found disparities in five out of six quality outcomes when they accounted for race and ethnicity. The disparities were present in the following quality indicators: 1) the child does not have personal doctor or nurse, 2) the doctor
does not spend enough time with the child, 3) the provider is not sensitive to family values/customs, 3) the doctor does not make parents feel like partners, 4) the family/caregiver did not receive enough information from doctor. The only quality indicator that was not significant was: the doctor did not listen carefully.

These studies support the hypothesis that disparities exist in ABA services. More research is needed to identify whether disparities exist in ABA services in other states, this is important because of the increasing demand for ABA services after federal mandates were enacted that required all state-regulated insurances to cover ABA for children with Autism. More than 41 states have enacted a federal mandate, including Florida. Florida passed an Autism Mandate in 2008 that required all health insurance plans to cover screening for autism and treatment for autism through various therapies including ABA services for children under the age of 18. In 2012, Florida Judge Lenard ruled that Medicaid should pay for ABA services for all children diagnosed with ASD. Because of the increasing mandates and demand for ABA services, it is important to ensure that all individuals with distinct cultural/ethnic groups are receiving services equally. If disparities exist, they should be identified and future research, interventions, and policies should be enacted to reduce these disparities.

Movements to Decrease Health Disparities

The importance of reducing treatment disparities has been acknowledged in many fields such that national reports and policies have been created to disseminate this information and urge providers to deliver services that are adapted to the client’s culture. The Surgeon General published “Mental Health: Cultural, Race, and Ethnicity” a supplement to “Mental Health: A Report of the Surgeon General” to inform the nation of the disparity that exist in mental health among the different cultural groups and urge the nation to take action to reduce these problems
This supplement discusses the influence culture has on an individual's mental health, and it identifies the disparities that exist in the availability of services, access to services, utilization of services, and the appropriateness of the services and their outcomes. It also reviews the barriers (i.e., language, S.E.S, education) that make it difficult for different cultural groups to receive treatment and provides recommendations for clinicians to help reduce these barriers.

Another notable attempt to encourage practitioners to consider culture was the inclusion of the Cultural Formulation Interview in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 2013). The interview was created to help clinicians collect and consider culture during the diagnosis and treatment of individuals. The DSM-IV guides practitioners to discuss the cultural backgrounds, beliefs about the illness, and the language the client speaks to assess how culture influences the clients’ behavior, and provide cultural responsive treatment.

These movements stemmed from an outpour of research that highlighted the importance of considering a client’s racial and ethnic background to decrease treatment disparities. Behavior analysts can borrow from these movement to identify areas in which research is needed in the field of Applied Behavior Analysis (ABA). This is of upmost importance because ABA therapy is considered the “gold standard” evidence-based treatment for children with ASD (Leaf et al., 2016); and it is well documented that children with ASD who receive adequate services are more likely to receive optimal treatment outcomes than those who do not (Lovaas, 1987; Sallows, Glen, & Graupner, 2005). Lovaas (1987) found that 47% of the children with ASD who received intensive treatment (i.e., 40 hours or more of one-to-one treatment per week) achieved normal educational and intellectual functioning compared to only 2% of the children who received minimal treatment (i.e., 10 hours or less of one-to-one treatment per week). An understanding of
culture from a behavior analytic view point and its importance in the provision of services is necessary to ensure that Hispanic families receive adequate high-quality treatment services and that treatment disparities is reduced.
CHAPTER TWO

CULTURE IN APPLIED BEHAVIOR ANALYSIS

What is Culture?

Three definitions of culture are found in the behavior analytic literature. Skinner defined culture as “a repertoire of contingences to which an individual is exposed” (Skinner, 1972; pg. 127). He then wrote that cultures are behavior that are carried by the people in the group. Sugai, O’Keefe, and Fallon (2012) operationally defined culture as a "collection of common verbal and overt behavior that are learned and maintained by a set of similar social and environmental contingences (e.g., learning history), and are occasioned (or not) by actions and objects (e.g., stimuli) that define a given setting or context" (Sugai, O’Keefe, & Fallon, 2012). Hayes and Toarmino (1997) defined culture as "a set of functionally interrelated cultural practices". They defined cultural practices as "behavioral events considered in terms of their prevalence (occurrence) in the population and analyzed in terms of contextual features that affect the social propagation and maintenance of these behavior". All three definitions agree that cultures are a set of contingencies that are exhibited by a group. These definitions allow us to think about culture in terms of the observable and measurable behavior, and it allow us to think about culture in other terms other than race and ethnicity.

Why is Culture Important in Applied Behavior Analysis (ABA)?

Understanding culture in behavior analytic terms is important because of the nature of the behavior analysts’ work. Applied behavior analysts use behavior principles to change socially
significant behavior. For example, when working with individuals that engage in problem behavior, behavior analysts conduct a functional behavior assessment (FBA) to identify the environmental factors that are maintaining the problem behavior by conducting interviews, questionnaires, observations and functional analysis (FA). A behavior intervention plan is then written that includes recommendations for the parents to help them arrange the client's environment in order facilitate the occurrence of desired behavior and reduction of problem behavior. The recommendations often require parents to alter the way they respond to their children’s behavior, change the behavior they teach their children, change the way the behavior is taught, and rearrange their daily activities to maintain the desirable behavior. Through these recommendations, behavior analysts are asking parents to change practices that have been reinforced by the family and community life, and to alter contingencies that are already in place for the existing practices. It may be difficult to change these contingencies if they are not supported by the family’s cultural environment.

Behavior analysts should provide services that are compatible with the family and their community life to facilitate the parent’s implementation of the new recommendations because the new contingencies will be supported by an environmental structure that is already in place. To achieve this, behavior analyst should design goals for treatment and create procedures that are acceptable to the family and that result in desirable outcomes (Wolf, 1978).

Creating plans that are adapted to the families’ culture is called contextual fit which refers to “the congruence or compatibility that exists between specific features and components of behavioral support plan and a variety of relevant variables relating to individuals and environments.” (Albin, Lucyshyn, Horner, & Flannery, 1996). When a plan has high contextual fit, 1) the family members are comfortable with the goals that are set and the interventions
included in the plan, 2) they perceive they have the skills and resources to perform the strategies, and, 3) the family believes the intervention can be successful (Albin et al. 1996). Family cultural values, caregiver parenting styles, and the family’s primary language are examples of the variables that relate to the family and the environment, and that should be considered for the behavior plan to be contextual fit.

More research is needed to identify the extent to which these differences affect behavior analytic services and their results. Therefore, for this study we will adapt one of the most widely used behavior analytic procedures to a Hispanic cultural characteristic and we will assess whether parents are more likely to implement it correctly and find the procedure acceptable.
CHAPTER THREE

FUNCTIONAL COMMUNICATION TRAINING (FCT)

Functional Communication Training (FCT) has demonstrated that severe problem behavior can function as a form of communication for children with intellectual and developmental (IDD) disabilities. In FCT, a functional analysis (FA) is conducted to identify the consequences that maintain the problem behavior, and then the child is taught to emit an appropriate behavior that is maintained by the same consequences that maintain the problem behavior (i.e., functional communicative response). The child uses the FCR to communicate his or her wants and needs thereby eliminating the need for engaging in problem behavior. FCT is the most widely used behavioral intervention (Tiger, Hanley, and Bruzek, 2008). It is used to reduce different forms of problem behavior including but not limited to: self-injury (Kurtz et al. 2003), stereotypy (Wacker et al., 1990), and inappropriate sexual behaviors (Fyffe, Kahng, Fittro, & Russell, 2004) among different populations including children and adults with autism, hyperactivity (Flood & Wilder, 2002), speech and language delays (Snell, Chen, & Hoover, 2006), traumatic brain injury (Gardner, Bird, Maguire, Carreiro, & Abenaim, 2003), and others.

To date, only one study has attempted to adapt FCT to families of different cultural backgrounds by evaluating children’s language preference while receiving reinforcement after implementing FCT among Spanish-speaking participants (Dalmau et al. 2011). A second study contextualized FCT by incorporating parents’ family context (i.e., caregiving demands, family support, and patterns of social interaction). In this study, the authors assessed how well FCT fit
with the participants’ family values (Moes and Frea, 2002). However, the participants’ race or cultural background were not reported, and the parents’ views of the consideration of the family’s values during FCT was assessed by one question on a survey. Further, an experimental assessment of the influence of specific cultural values was not conducted.

The guidelines to conduct FCT state that FCRs should be of low response effort, easily acquired, and easily recognizable by the community (Tiger, Hanley, and Bruzek, 2008). They also state that FCRs should be socially significant, meaning they are found acceptable by parents and the community. However, guidelines do not mention the need to consider the clients’ cultural background when choosing an FCR.

It is especially important for behavior analysts to consider the FCRs that are taught during FCT because FCRs may not concord with the family’s values, beliefs, and customs. Different cultures adhere to different cultural values, and studies have linked mothers’ cultural values to the behavior they socialize their children. Calzada, Fernandez, and Cortes (2010) found that the behavior of Latina mothers’ socialization was linked to the cultural value of *Respeto*. *Respeto* “implies deference to authority or a more hierarchical relationship orientation (Perez, 2009). They found that the mothers expected specific behavioral manifestations, such as accept parental authority without question, look at parents in the eye during commands, and never interrupt adults when their children adhere to the value of *Respeto*.

If the FCR does not concord with the clients’ cultural values, the family may not continue to reinforce it after FCT and the FCR will not be maintained after services are faded or terminated. During FCT, parents are being asked to stop reinforcing problem behaviors that have been reinforced by the family and community life, and to alter contingencies that are already in
place for the existing FCRs. It may be difficult to change these practices and to alter the contingencies if they are not supported by the families’ environment.

This study is the first to adapt an FCR to Hispanic parents’ cultural values. This was achieved by creating a questionnaire that guides behavior analysts through an interview to choose FCRs that adhere to the value of Respeto. Two FCRs were taught during the study; one was adapted to the results of the CARES and the second one was not adapted. Preference for each FCR was assessed by collecting treatment fidelity scores across the culturally and non-culturally adapted FCRs. Parents had an opportunity to choose the FCR they wanted to implement during the choice component. Finally, social validity of the chosen culturally-adapted FCR was assessed. The Albin et al. (1996) Contextual Fit questionnaire and an interview will be used to learn about the parents’ acceptance and opinions of the culturally adapted FCR. It was hypothesized that parents will adhere to the protocol with higher fidelity when reinforcing the culturally-adapted FCR and that the parents will choose the culturally-adapted FCR during the choice component. It is also expected that there will be high social validity for the culturally-adapted FCRs among parents.
CHAPTER 4

PHASE I

Communication Response Interview

CARES. The Culturally-Adapted Response Evaluation Survey (CARES) was developed for behavior analysts to use as a guide to adapt functional communication responses (FCRs) to the value of Respeto. Respeto is defined as deference to authority or a more hierarchical relationship orientation (Perez, 2009). An English and Spanish version of the questionnaire was created. Each questionnaire contained 20 open-ended questions which were devised using literature that has identified specific behavioral manifestations of cultural values among the Hispanic population (see Appendix A). For example, Calzada, Fernandez, and Cortes (2010) conducted focus groups with Latina mothers who adhered to the value of Respeto. The mothers identified specific behavior they expected their child to emit when their child engaged in Respeto. Examples of the behavior identified in this study included saying "please" and "thank you," looking at parents in the eye when their parents talked to them, and not interrupting adults’ conversations.

The CARES is composed of two parts. Part I contains 14 questions that enquire about the caregivers’ preference in communication and their child’s behavior. Part II is composed of six questions that help identify the extent to which caregivers found the chosen communication response acceptable and whether they believed their family or community would find the chosen FCR acceptable.
Expert Review. Before initiating the use of the questionnaire, two faculty members and three doctoral level students from an Applied Behavior Analysis (ABA) doctoral program were asked to read the questionnaire and provide feedback. All five reviewers were Board Certified Behavior Analysts (BCBA) who had experience creating FCRs and implementing functional communication training (FCT) procedures. Each reviewer was asked to read the questionnaire and provide feedback on the clarity and content of the questions. They were provided with a paper or online copy of the questionnaire and asked to make changes and provide recommendations on the document using a pen or the track changes and comment functions of Microsoft® Word. The questionnaire was modified according to their feedback.

Readability Assessment. The SMOG (Simplified Measure of Gobbledygook) (McLaughlin, 1969) readability test was conducted to assess the minimum education required to understand the text on the CARES. During the SMOG test, the number of words with more than three syllables was divided by the number of sentences. The SMOG conversion table was then used to identify the approximate grade level that corresponded with the score. A readability assessment was conducted on both the English and Spanish versions of the CARES (see Appendix B). Because the SMOG test was created to assess documents written in an English language and it reveals a smaller reading level when used with Spanish text, the SOL (Contreras, Echenique, & Daye-Contreras, 1999) formulas were used to convert the SMOG score to a comparable reading level. The text on each questionnaire was modified and re-assessed until the CARES could be read by individuals with secondary school education.

Pre-Tests. Each version of the questionnaire was pre-tested to refine the questionnaire and identify errors that were not initially apparent during the expert reviews. The English questionnaire was pre-tested with four English-speaking caregivers and three behavior analysts.
The Spanish questionnaire was pre-tested with four Spanish-speaking caregivers and three behavior analysts. All caregivers were of Hispanic background and had a child with developmental disabilities (DD) between the ages of 3-18 years. The behavior analysts were either BCBAs or BCaBAs (Board Certified Behavior Analysts) and had experience conducting FCT and creating behavior reduction procedures for a minimum of one year. To recruit participants, the research staff sent recruitment emails to behavior analyst on their email contact lists. Parent participants were recruited through behavior analysts who were interested in participating. A recruitment/letter of consent was sent with the pre-testing packets.

**Caregiver Experience Survey.** During pre-testing, the participating behavior analysts used the CARES as a guide to interview a caregiver to identify a communication response for their child. After the interview, the caregiver completed a packet that included a cover letter, demographic questionnaire, and an experience survey (see Appendix C). The experience survey was divided into two parts. The first part of the questionnaire contained 12 open-ended and multiple-choice questions that asked participants what they believed was the goal of the CARES, the overall clarity and ease of completing the questionnaire, and about their beliefs and experiences in considering culture and cultural values when choosing a communication response. The second part of the experience survey presented each question independently and asked the participants to rate the extent to which he or she found each question easy and relevant to identifying a communication response and identifying a communication response that matched their family values. A fourth open-ended question asked the participants whether they found any words or part of the question confusing or inappropriate.

**Results.**

The data for the English and Spanish questionnaire will be presented together.
Demographics.

Caregivers. A total of eight caregivers pre-tested the CARES. Four caregivers pretested the English version and four caregivers pre-tested the Spanish version. Spanish was the primary language for all the caregivers who pre-tested the Spanish version and two of the caregiver who pretested the English version. English was the primary language for two of the caregivers who pretested the English version. The caregivers were four mothers, two fathers, one grandmother, and one aunt of a child with a developmental disability. See figure XXXX for caregiver demographics.

Behavior Analysts. All participants were BCBAs with a Master’s degree education. English was the primary language for 5 out of the 6 BCBAs. Three BCBAs were Caucasian, one was Hispanic, and one was African American and Hispanic. All participants had an average of 2.5 years working as a behavior analyst. See figure XXXX for caregiver demographics.

Experience Survey: Part I

Caregivers. Most of the questions in this section were open-ended; therefore, a summary of the caregivers’ responses is provided and some participant’s answers are paraphrased. All caregivers reported that the time to complete the CARES was appropriate. They also said that the questionnaire was self-explanatory and that the questionnaire was an accurate summary of what behavior analysts needed to know to identify a communication response.

Caregivers were asked what they believed was the goal of the questionnaire, whether the questionnaire was meant for people like them, and if they believed it was important for behavior analysts to consider their cultural values and culture when choosing a communication response for their child. Most caregivers believed that the goal of the CARES was to identify communication responses, involve parents in choosing the communication response, and to help
their children. All caregivers but one reported that it was important for behavior analysts to consider their cultural values when choosing a communication response to teach their child. They believed it was important to consider their (caregivers) cultural values when choosing a communicative response. One parent reported that considering his or her values was important because every culture is different and has its values and asking parents about their cultural values will help ensure that the families distinct cultural beliefs are included in treatment. Some caregivers reported that they had strong cultural values and they would like to conserve them through their children. Caregiver 3 (PA03) reported that it was not important to consider families’ cultural values wrote that it was more important that his/her child learn to communicate.

All but one caregiver (caregiver 3) reported that it was important to consider the caregivers’ culture (e.g., religion, language, traditions) when choosing a communication response to teach the child. They reported that it was important because there are differences in cultural values and traditions and it would help avoid misunderstanding and problems (among individuals). Caregiver 3 said considering culture did not matter, because he wanted their child to learn to talk no matter what it took to teach him/her.

Six caregivers said that a behavior analyst has never asked them about their cultural values when choosing a communication response to teach their children. Caregiver 1 and 7 reported they had been asked about the language they should teach their children. Finally, Caregiver 7 said that she was asked how their family responded to their daughter when she wanted something.

All but one caregiver believed that the CARES was meant for people like themselves. Caregiver 7 caregiver reported that the CARES would be more appropriate for children who do
not talk vocally.

Behavior Analysts. All BCBAbs believed it was important for them to consider their clients’ cultural values and other aspects of their culture (e.g., religion, language, and traditions) when choosing a communication response. One analyst reported that parents are more likely to implement procedures that follow their cultural values. No behavior analysts reported that they had asked a client about how their communication response matched their families’ cultural values or other aspects of their culture.

The BCBAbs believed that the goal of the survey was to identify a communication response, ensure that the response was consistent with the families’ values, and to help children with disabilities. They reported that while conducting the interview, they learned new information that would be useful when developing treatment programs, and that certain skills (e.g., cleaning up immediately, addressing others formerly) were important to the families.

Some BCBAbs said the interview was helpful to identify a communicative response. All BCBAbs said they were very likely to use the communicative response they identified in the questionnaire in their programming, however; most BCBAbs reported that they would have identified the same communicative response without the survey. One therapist reported that she would change the communication method of multiple clients if she had used the CARES. Furthermore, one therapist reported she would not have understood the importance of the communicative response she was teaching without this questionnaire. All BCBAbs reported that they learned whether their caregiver was likely to reinforce the communication response identified from this questionnaire and whether the caregiver found the communicative response acceptable and matched the family’s values.
The BCBAs reported some problems with the questionnaire. The primary problem that was reported was that some of the questions were very repetitive. For example, all the questions asked to explain “why or why not” they provided a specific response. According to one BCBA, one parent became frustrated during the interview because of multiple similar questions. Other BCBAs reported that some questions required further explanation and that some follow-up questions were needed.

All BCBA’s believed the instructions were “very clear” or “clear” (see Figure 1). All behavior analyst believed the CARES was “very easy” or “easy” and the time to complete it was adequate (see Figure 2). All but one BCBA would use the questionnaire in the future (see Figure 3). Some therapists reported that they would recommend the CARES to other professionals (see Figure 4). One BCBA reported that he would not use the questionnaire formerly, but would ask many of the same questions. This therapist reported that an FBA might answer similar questions. Most BCBAs reported that they were likely to recommend the questionnaire to other behavior analysts. One analyst wrote that she would recommend parts of it. One analyst said he would delegate it to a less experienced analyst.

**Experience survey: Part II.**

*Caregivers.* When asked how easy or difficult it was to understand each question, overall, most of the responses were either “very easy” or “easy”. About 10% were rated “neutral”. Only about 3% were rated “Hard”. One caregiver selected the neutral response to all the questions (See Figure 5).

When asked how relevant the questions were to help identify a communication response, most questions were considered “very relevant” or “relevant”. Some questions were rated as
“neutral”. Less than 1% was rated as “irrelevant”. One caregiver answered “neutral” to all questions, and one caregiver did not respond to one question (See Figure 6).

When asked about the relevance of the questions to help integrate families’ beliefs and customs when choosing a communication response, the majority of questions were rated as “very relevant” or “relevant”. Some questions were rated as “neutral”. Less than three questions were rated as “irrelevant,” and none of the questions were rated as “very irrelevant”. One caregiver answered “neutral” to all questions (See Figure 7).

Only half of the caregivers answered the question, “Is there any wording or part of the question that you found confusing or inappropriate? If so, explain.” Of the caregivers who answered this question, most caregivers reported that they did not find any words or any part of the questions as confusing or inappropriate. Only three caregivers reported that there were some errors in the wording of the Spanish version questionnaire (See Figure 8).

Behavior Analysts. When asked how easy or difficult it was to understand each question, overall, most responses were either “very easy” or “easy”. Less than 3% were “neutral”. No responses rated a question as “hard” or “very hard” (See Figure 9).

When asked how relevant the questions were to help identify a communication response, most questions were considered “very relevant” or “relevant”. Some questions were rated as “neutral”. About 5% of the responses rated the questions as “irrelevant” or “very irrelevant”. One caregiver answered “neutral” to all questions and, one caregiver did not respond to one question (See Figure 10).

When asked about the relevance of the questions to help integrate families’ beliefs and customs when choosing a communication response, the majority of questions were rated as “very
relevant” or “relevant”. Some questions were rated as “neutral”. Less than 2% were rated as “very relevant”. One caregiver answered “neutral” to all questions (See Figure 11).

When asked whether there was any wording or part of the question that the analyst found confusing or inappropriate, most answered “no”. Some responses were “yes” (See Figure 12). Three parents provided examples of how they would rephrase question three: “What should your child do if you are busy and they need something?” Some analysts asked to either condense some questions or separate some questions that seemed very repetitive. A BCBA noted that some questions that asked the parent whether they thought their family or community would honor the communication response were not necessary. This same behavior analyst commented that it was not necessary for the parents to explain their answers.

**Discussion**

The first part of this study resulted in a questionnaire that behavior analysts can use to identify a communication response that matches Hispanic families’ cultural values when conducting FCT. The results of the experience survey demonstrated that behavior analysts and caregivers found most questions easy to read and relevant to considering cultural values when identifying a communication response. They also found that both parents and behavior analysts believed that it was important to consider their clients’ culture when choosing a communication response. However, only one parent reported that a behavior analyst had asked her about her culture during treatment and zero behavior analysts reported they had asked their clients about cultural values or any aspect of their culture.

These results have great implications for research in considering culture in behavior analyst services as almost all participants (caregivers and BCBAs) believed that considering culture was important. This demonstrates that they believe this step is important when providing
behavior analytic services. Additionally, the results demonstrate that there is a need for research to identify ways to consider culture throughout behavior analytic services and training behavior analysts to do so as they reported they have not inquired about culture at the moment. Furthermore, future studies should also expand on these results and evaluate why behavior analysts are not considering their client’s culture during treatment development and what their beliefs are about considering culture in the services they provide. Some of the answers to the CARES demonstrate a glimpse of their rationale. All participants reported that they would have identified the same communication response using other methods such as the FBA. Future research should use this information and conduct training on why considering culture is important and teach them how to integrate cultural characteristics into the services provided.

This study is the first step to this type of research as it created a questionnaire to help behavior analysts consider culture when choosing a communication response. Additionally, it asked analysts their opinions on the subject matter. Future research should pre-test this questionnaire with caregivers from other ethnic backgrounds who also adhere to values similar to those of Respeto such as African American individuals. Niara Sudarkasa (1996) identified values that guided African American family life. Some of the values included respect for the family, community, and each other; responsibility for extended family members and close relatives; and restraint in considering individual needs before the needs of the family. Additionally, the CARES can be pretested with individuals who adhere to the value of Independence. The CARES was based on Calzada, (2010) questionnaire that measured parents’ socialization to Respeto and Independence (an American value). Because the questionnaire contains questions that address the value of Independence, this questionnaire may apply to this population.
More studies should also identify when it is important for parents that behavior analysts consider culture in treatment. One participant reported that his cultural values were not relevant to choosing a communication response because he wanted his child to learn to communicate, so we cannot assume that cultural values are universally important.

The results of the study cannot be generalized because of the small sample of participants. This study should be replicated with more participants as only 16 individuals (8 caregivers and 8 behavior analysts) participated. More research should be conducted to pre-test the questionnaire with the modifications that were made after we reviewed the experience surveys. The new studies should analyze the results using more advanced procedures. This study reported qualitative data because the primary purpose of the study was to pre-test the CARES before using it the second phase of the study.
CHAPTER 5
PHASE II: ASSESSING PARENT’S PREFERENCE

In phase II we assessed parents’ preference for a culturally-adapted FCR (C-FCR) and standard FCR (S-FCR).

Participants and Settings. Three Hispanic parents who had a child diagnosed with an IDD, between the ages of 3 to 17, and engaged in problem behavior that warranted assessment and treatment were recruited for the study. Participants were recruited through the Center for Autism and Related Disabilities.

Andres was a 35-year-old male from the Dominican Republic who had lived in the United States (U.S.) for less than one year. His primary language was Spanish. His son Andres Jr was six years old and arrived in the United States at the age of three. Andres Jr was diagnosed with Autism and referred to the study because he engaged in aggression. He communicated his wants and needs in 2-3 word sentences in English, however; he independently sang songs in English and Spanish. He followed English and Spanish instructions. Andres Jr’s sessions were conducted in English.

Anahi is a 37-year-old female who was born in the U.S. Her parents are from Cuba and Mexico. She had taken some college courses at the time of the study. Anahi communicated in both English and Spanish. Anahi’s daughter, Nani, was a 5-year-old female who was diagnosed with Autism. She used full sentences to communicate her wants and needs, and followed English
instructions and some Spanish demands. Anahi engaged in tantrums which included crying, screaming, and dropping to the floor.

Miguel is a 45-year-old male from Puerto Rico who had lived in the U.S. for eight years. At the time of the study, his highest level of education was a Master’s degree. He communicated in both English and Spanish. His son, Miguel Jr, was a 9-year-old male diagnosed with Autism. He participated in the study because he engaged in screaming which parents reported was very disruptive. Miguel Jr did not communicate vocally although he was able to say one to two syllable words. He primarily used picture cards and gestures to communicate his wants and needs. His behavior analyst was teaching him to use an augmentative communication device. Miguel followed instructions in English and Spanish. Therefore, his sessions were conducted in English.

We attempted to conduct a language assessment to assess in which language the child participants were more proficient, however; we were unable to complete a full assessment because of their skill levels or level of problem behavior. All research sessions took place in the participants’ home. One to two 2-hour appointments were conducted per week. All parent training sessions were 10 min. Andres and Nani’s sessions were 5 min. Miguel Jr sessions were 5 min.

**Response Measurement.** The dependent variables were the parents’ treatment fidelity scores, the occurrence of the target problem behavior, and the frequency of the emitted C-FCR and S-FCR. Treatment fidelity was assessed when parents implemented S-FCT and C-FCT. To assess treatment fidelity, the therapist checked-off every step a parent completed on a checklist and calculated the percentage of steps completed correctly.
Andres Jr’s problem behavior was aggression which was defined as hitting others with an open hand, grabbing, and kicking. This definition excluded attempts to wrap his hands around an individual’s neck. Miguel Jr’s and Nani’s problem behavior was screaming which was defined as a non-functional high-pitched scream. All problem behavior was measured as responses per minute.

**Reliability.** A second observer collected data on the dependent variables for 28% of the sessions during all phases of the study to assess the reliability of the observation system. The agreement percentage for treatment fidelity was calculated by comparing the observer’s recorded response in each session on an item-by-item basis. One point was given if both observers agreed that the response occurred or did not occur, and 0 points were given if the two observers did not agree that the response occurred or did not occur. The sum of the points was divided by the total number of items in each session; the score was then multiplied by 100. The mean agreement for Andres, Nani, and Miguel was 100%.

The agreement percentages for problem behavior and each FCR were calculated by comparing the observers recorded responses for each 10-s interval in each session. The smaller number of responses was divided by the larger number of responses in the interval; the scores were then added and multiplied by 100. For problem behavior, the mean agreement was 92.42% (range, 82.5%-100%) for Andres Jr, 95.62% (range, 80%-100%) for Nani, and 97.45% (range, 95%-100%) for Miguel Jr. The mean agreement for the S-FCR was 92.25% (range, 93.3%-100%) for Andres Jr, 97.89% (range, 95.83%-100%) for Nani, and 98.89% (range, 93.3%-100%) for Miguel Jr’s. The mean agreement for the C-FCR was 89.95% (range, 80.93%-96.99%) for Andres Jr, 98.33% (range, 95.83%-100%) for Nani, and 100% for Miguel Jr.
Procedural Fidelity. Procedural fidelity assessments were conducted for 30% of the trials on the implementation of functional communication training (FCT) and the parent training procedures using a task analysis. The percent of correct trials were calculated by dividing the total number of correct steps by the total number of items in the task analysis and dividing the score by 100. Treatment integrity was 100% for all phases of the study for all three participants.

Assessments and Measures.

Cultural Socialization of Latino Children. Each parent filled out the Cultural Socialization of Latino Children (CSLC; Calzada, 2007) questionnaire to identify the extent to which they socialize the values of Respeto and Independence to their children. The Respeto scale consists of 20 statements that correspond to the value of Respeto such as “I believe that children should obey no matter what” and “It is not acceptable for children to interrupt adult conversations.” The Independence scale consists of 17 statements that correspond to the value of independence such as “I want my child to have his own ideas and opinions, even if others disagree” and “I want my child to be able to deal with his feelings on his own.” The answers to the items in each scale were averaged for each participant. Each participant was assigned two scores: one for the Independence Scale and one for the Average Respeto scale. The possible total score range for each scale was 1-5. The scores were used to define the level in which each participant socialized Respeto and Independence. Scores above 3 in both scales can be represented as that participants equally socialized the two cultural values.

Functional Analysis Screening Tool (FAST). The Functional Analysis Screening Tool (FAST) (Iwata, DeLeon, & Roscoe, 2013) was conducted to gather information about the child’s problem behavior. The parents were asked to answer 24 questions that attempted to identify the
factors that affect problem behavior. The questionnaire includes open-ended and multiple-choice questions.

*Multiple Stimulus Without Replacement (MSWO).* An MSWO (DeLeon & Iwata, 1995) was conducted to identify highly and moderately preferred items to use during the baseline sessions and functional communication training (FCT). During this assessment, five different items and activities were presented to the participant, about 1-2 in. apart from one another. The therapist prompted the participant to “pick one.” The participant was allowed to play with the chosen item for 30 s, and then the item was removed from the array. The process was repeated with the remaining items until there were no more items available or the participant refused to select another item. The items were ranked in the order they were chosen. Andres Jr’s and Nani’s highest preferred item was a smartphone. Andres Jr moderate preferred items were cars and Nani’s was a toy phone. Miguel Jr’s highest preferred item were his toy dinosaurs. His moderate preferred items were his cars and coloring books. The highly preferred items were used during FCT with Andres Jr and Miguel Jr. The highly and moderately preferred items were used during the play sessions in baseline.

*Functional Analysis*

A functional analysis (FA) was conducted on all participants target problem less than one month before starting this study, therefore; we did not conduct an FA. We used the results of the FA to identify the FCRs for the study. The results of demonstrated that Andres Jr’s problem behavior, aggression, was maintained by access to a smartphone. Miguel Jr’s problem behavior, screaming, was maintained by access to toys and escape from tasks. We targeted the function of access to toys in this study. Nani’s problem behavior was maintained by access to tangibles and
attention, and escape from tasks. We targeted the function of escape from tasks for Nani’s problem behavior.

**Functional Communication Responses (FCRs).**

*Standard Functional Communication Response (S-FCR)*

An S-FCR was chosen before conducting the CARES interview with the parent. The S-FCR for Andres Jr was to say “Phone” when manding for the phone. It was chosen by a behavior analyst who had no training in considering the families’ culture or cultural values when providing behavioral services. The S-FCR for Nani was “I want break.” Nani was previously taught to say, “I want phone”, therefore; we used a similar sentence to teach her to mand for a break. We identified two S-FCRS for Miguel Jr because he did not meet mastery criteria with the first S-FCR. The first S-FCR required him to say, “I want dinosaurs” using an augmentative communication device app on an electronic tablet. This S-FCR required that Miguel Jr perform a series of six steps on the tablet to emit the vocal phrase, “I want dinosaurs.” This S-FCR was chosen because it was already in Miguel Jr’s repertoire and in his current treatment program. His current behavior analyst reported that he was taught to use the table to mand for toys, however; he did not use it consistently and he continued to engage in problem behavior. After conducting FCT for multiple sessions, Miguel Jr did not meet mastery criteria for independent responses with the first S-FCR, and a new S-FCR was introduced. The new S-FCR required Miguel Jr to use a picture card with illustrations of different toys to mand for his toys. Picture cards were Miguel Jr’s back up method of communication. Parents culture or cultural values were not considered when a communication response was chosen for Nani or Miguel Jr.
Culturally-Adapted Functional Communication Response (C-FCR)

A BCBA used the CARES to interview each parent to identify a culturally-adapted FCR (C-FCR). The C-FCR chosen for Andres Jr was to say, “I want phone” while providing eye contact. During the interview, Andres reported that eye-contact when speaking with others was very important as it was a sign of respect. He also said that he expected Andres Jr to use full sentences because he had the skills.

The C-FCR chosen for Nani was to say, “I want break, please.” During the interview, Anahi reported that having manners was very important to her and that she expected Nani to say “please” and “thank you”. Additionally, Anahi has taught her to say please when manding for preferred items. Saying “please” did not generalize to asking for a break during S-FCT and she did not say “please” during baseline sessions.

The C-FCR chosen for Miguel Jr was to use the picture card, however; he was expected to mand for his dad’s attention by saying “papá” before presenting the card. During the interview, Miguel reported that it was important for his son to use his words when he asked for preferred items. Additionally, he expected that his son mand for his attention first by saying “papá”. Miguel Jr did not have the skills to say “toys”, however; he could echo “papa”. Therefore, we used both the vocal and picture cards in the C-FCR. According to Miguel, manding for a person’s attention appropriately before asking for a desired item is an example of Respeto.

Procedures

A multiple baseline across participants with an embedded ABACD design was conducted to assess parents’ preference for a C-FCR and S-FCR.
(A) Baseline. Contingent reinforcement (CR) and play sessions were conducted during baseline to confirm that problem behavior was maintained by the function identified during the FA (i.e., access to phone, escape from demands, and access to toys for Andres Jr, Nani, and Miguel Jr, respectively). However, only the CR data is presented in baseline to demonstrate the level of problem behavior before conducting FCT. A researcher was the therapist in these sessions. In the CR sessions, the therapist provided the phone contingent on Andres Jr engaging in aggression, a 30-s break contingent on Nani’s screaming, and toys contingent on Miguel Jr’s screaming. Attention was not delivered and all other problem behavior was ignored throughout the session. During the play sessions, the participants had access to their highly and moderately preferred items, attention was delivered every 30 s, and no tasks were presented.

(B) S-FCT Phase. During S-FCT sessions, the therapist created an establishing operation (EO) (Michael, 1993) to evoke the S-FCR. The EO depended on the function of the child’s behavior. The therapist removed the phone and toys for Andres Jr and Miguel Jr, respectively. Tasks were presented to Nani. Contingent on the participant emitting the S-FCR, the preferred items were returned to Andres Jr and Miguel Jr, and a 30-s break was provided to Nani. A progressive time delay (PTD) was used to teach the participants to emit the S-FCRs. Initially, a 0-s delay trial was conducted in which the participants were immediately vocally prompted to emit the S-FCR after the SD was presented. The time delay increased by 50% every session (i.e., 0, 1, 2, 3, 5, 8, 12...). Least-to-most prompting (i.e., verbal, model, full physical) was used with Miguel Jr if he did not emit the S-FCR. Echoic prompts were used with Andres Jr and Nani as their S-FCRs were emitted vocally. If they did not engage in the S-FCR after the first prompt, an echoic prompt was provided every three seconds until they emitted the S-FCR. No consequences were provided for inappropriate behavior during S-FCT. S-FCT sessions ended when the participants emitted 100%
independent S-FCRS and problem behavior was below 80% of the baseline average rate for three consecutive sessions.

Once the parents met mastery criteria, they were trained to conduct S-FCT sessions. More specifically, they were trained to create an EO for the S-FCR, reinforce each occurrence of the S-FCR, prompt the S-FCR, and place the target problem behavior on extinction.

We conducted baseline sessions to identify each parent’s current skill level in implementing S-FCT. During baseline, we asked parents to conduct an S-FCT session to the best of their ability. We modified the training role-play scripts created by Kunnavatana, Bloom, Samaha, & Dayton (2013) and used the scripts throughout the parent training procedures. We did not provide feedback to the parents on their performance.

Behavioral skills training (BST; Miltenberger et al., 2014) was used to train parents to train the parents. During BST, we presented all the S-FCT procedures via a PowerPoint to the parents. We then reviewed each step and had the parents role-play each trial. After a session, we reviewed the steps that the parents implemented incorrectly. Parents role-played each trial until they scored 100% on three consecutive attempts.

Post-training assessments were conducted following the training. If parents did not score 100%, they were given feedback at the end of the session and were re-exposed to the post-training assessments until they scored 100%.

Once parents met mastery criteria, they implemented the S-FCT procedures with their child. These sessions continued until stability was demonstrated for the S-FCR and the target problem behavior.

(A) Baseline. A second baseline phase was conducted for Andres Jr and Nani in the same format as the first baseline phase. Data on the occurrences of the C-FCRs was also collected. A
second baseline was not conducted with Miguel Jr because screaming occurred at high rates and novel topographies of problem behavior occurred. His parents advised us that if problem behavior continued at high rates; they preferred to withdraw from the study. Therefore, we used the high instances of problem behavior in the S-FCT in-situ phase as a proxy for baseline.

(C) C-FCT Phase. The same procedures that were implemented in the S-FCT phase were used in this phase with Andres and Nani, with the exception that child participants were trained to emit the C-FCR and the parents reinforced the C-FCR and ignored the S-FCR. A combined C-FCT and in-situ sessions were conducted with Miguel Jr. For Miguel Jr, only four sessions were conducted in which the time delays were 0 s, 1 s, 2 s, and 3 s. The short time delays ensured that problem behavior was less likely to occur in the periods of time between the removal of the toys and the prompts for the C-FCR. During these sessions, Miguel was the therapist and researcher assisted when novel problem behavior such as aggression occurred. The goal of the modification to the session was to provide Miguel an opportunity to observe Miguel Jr emitting the C-FCR and provide reinforcement. This allowed him to experience implementing C-FCT so he could participate in the choice phase.

(D) Choice. A choice component was conducted to assess the parent’s preference between S-FCT and C-FCT. Before a session was conducted, each parent was presented with the following statement, “Do you want to implement S-FCT or C-FCT?” The parents implemented the FCT procedures of their choice. The sessions were conducted until there was stability in the parent’s choices.

Social Validity

Each parent completed a social validity questionnaire after the treatment procedures to assess the social validity of the C-FCRs, how well parents believed the C-FCRs matched their
cultural values, and how likely they were to reinforce the C-FCRS in the future (see Appendix D).

**Results**

The results of SCLC questionnaire are demonstrated in Figure 13. All parents scores were higher than an average of 3 in both scales which indicates that they socialize the values of *Respeto* and *Independence*. When comparing the scores of the two scales for each participant, Andres’s average scores were higher in the *Independence* scale than the *Respeto* scale. Anahi and Miguel’s scores were slightly higher on the *Respeto* scale.

The results for parent training for Andres, Anahi, and Miguel are presented in Figure 14. Overall, the treatment fidelity scores were low in baseline and increased during BST. Anahi met criteria (i.e., three consecutive sessions at 100%) in only three sessions. Andres Jr and Miguel Jr met criteria in less than six sessions. All participants scored 100% in all post-assessments.

The results of C-FCT and S-FCT are presented in Figure 15. Overall, there were high rates of problem behavior and 0 rates of the S-FCR in baseline. During S-FCT, Andres Jr and Anahi met mastery criteria (i.e., three consecutive sessions of 100% independent S-FCRs and problem behavior at below 80% of baseline average for three consecutive sessions). Miguel Jr met mastery criteria with the second S-FCR. The baseline average for problem behavior was 1.53, 3.02, and 2.8 for Andres Jr, Nani, and Miguel Jr, respectively.

During S-FCT, Andres Jr’s and Nani’s problem behavior decreased to near zero responses per minute while the S-FCR rates increased; they met mastery criteria and continued to the S-FCT in-situ phase. Miguel Jr failed to meet mastery criteria after ten sessions. Because the S-FCRS were on a slightly decreasing trend and the rate of problem behavior increased, we introduced a new S-FCR (i.e., picture card). The picture card was used as a S-FCR because it
was the child’s back-up mode of communication and it required less response effort than using an augmentative communication device app. Miguel Jr met mastery criteria with the picture card after 20 sessions.

During the S-FCT in-situ phase, problem behavior rates increased, and the S-FCR rates decreased. Andres Jr’s and Nani’s problem behavior decreased to near 0. Although Miguel Jr’s problem behavior decreased, it remained at high levels. Treatment integrity remained at 100% for all three parents.

During the second baseline, problem behavior increased, and the S-FCR decreased for Andres Jr and Nani. Nani’s problem behavior increased to higher levels than the first baseline. A second baseline was not conducted with Miguel Jr, however; when the combined C-FCT and C-FCT in-situ sessions were implemented, problem behavior decreased to 0. Miguel Jr did not engage in independent C-FCT responses during the study although we only implemented four C-FCT sessions with him before he withdrew. Miguel’s treatment integrity was 100% in all of the combined sessions. Andre Jr and Nani met criteria during C-FCT. The baseline average for problem behavior was 1.53 and 8.13 for Andres and Nani, respectively.

The results of the choice phase are presented in Figure 16. Anahi chose to implement C-FCT during all three trials of the choice condition. Andres and Miguel chose to implement the S-FCR initially, however; switched to implementing the C-FCT.

During the social validity interview, all parents reported that they were comfortable with the communication response that was chosen using the CARES. They mentioned that the response fits their cultural values and believes. Anahi reported that her parents taught her to say, “please” and “thank you” so she expected her children to also say “please” and “thank you”. Miguel stated that it was always respectful when a person calls someone by their
name, and he was happy that we chose to teach Miguel Jr to call him “papá” before manding for his toys. All three parents also reported that they would honor their child’s request and that others who spend time with their children would also reinforce the communication response. All three parents reported that they enjoyed participating in the study, although Miguel would have liked for his son’s problem behavior not to increase to the level that it did during the study.

**DISCUSSION**

The results of the study demonstrate that some parents may choose to implement procedures in which they can reinforce a communicative response that was adapted to their cultural values. All three parents chose to implement C-FCT for three consecutive sessions. This occurred with Andres and Miguel who chose to implement S-FCT in the initial sessions and then switched to C-FCT. Anahi stated that she would implement the C-FCT for all the choice sessions before we started the phase. She reported that she was happy that Nani was saying “please”. Miguel also chose the C-FCT, although Miguel Jr. met mastery criteria in S-FCT and did not engage in independent C-FCRs. He reported that Miguel calling him “papá” was important for him and that he would continue to teach Miguel Jr the C-FCR. In the social validity questionnaire, all three parents reported that they would continue to reinforce the C-FCR after the study.

We chose the C-FCR from the results of the CARES which purpose is to identify FCRs in alignment with the cultural value of *Respeto*. All parents in our study chose to implement C-FCT. The parents may have chosen to implement the C-FCT because their preferences were considered and not necessarily because it matched their cultural values. Future studies should compare parents’ choice between FCRs that integrates the parent’s preference and an FCR that
incorporated their cultural values to assess whether will choose the FCR that considers the client’s cultural values but may not be based on parent preference.

Furthermore, future research should adapt other aspects of teaching communication skills to the families’ culture, such as the reinforcement schedule or the number of times a child can ask for an item/activity. Will a parent find it acceptable to give a preferred item or activity to a child every time the child asks for it? A concern for Anahi was that Nani would say “I want break, please” every time she was presented with a task. She also said that she would not find it acceptable if she asked for a break multiple times in succession.

Although it is necessary for behavior analysts to consider the client's culture in behavior services, it is important that behavior analysts do not overgeneralize or create stereotypes. Behavior analysts cannot assume that all individuals of a cultural group adhere to or identify with the same values and belief systems. Behavior analysts should be aware that there are characteristics that correspond to specific groups, however; differences within groups may still exist. This was evident in the study when Andres, who has lived in the U.S. for less than a year, chose to teach his child the C-FCR in English. He reported that cultural values are important, however; exceptions can be made for children with IDD. He stated that it was important for his child to speak English because he needed to integrate into the U.S. and learn the language that most of his teachers and caregivers will speak. He stated that Andres Jr already had a disadvantage because he is having difficulty communicating; teaching him two different languages would be a burden. Because we want to avoid creating stereotypes, the CARES were created as an open-ended questionnaire which purpose is to start a conversation between behavior analysts and parents about integrating cultural characteristics into behavior analytic programing.
There are some limitations this study that should be considered. First, although we attempted to run at least two 2-hour sessions per week, we were unable to do so because of frequent cancellations. Most appointment cancellations occurred with the fathers (Andres and Miguel) because they worked late night hours. In an attempt to accommodate their schedule and reduce the risk of cancelations, we ran sessions at night. Additionally, Miguel was unable to observe Miguel Jr independently emit the C-FCR and problem behavior decrease to low levels. However, with the modified C-FCT/C-FCT in-situ session, Miguel had the opportunity experience implementing the C-FCT procedures, observe Miguel Jr engaging in the C-FCR, and reinforce the C-FCR. Miguel participated in the choice phase and he preferred to implement the C-FCR over the S-FCR.

A second limitation of the study was that we restarted S-FCT with Nani after she met mastery criteria in S-FCT. This occurred because she did not generalize the S-FCR to S-FCT with mom, Anahi canceled sessions for three weeks because Nani was sick, and new therapist were running sessions. Additionally, the C-FCR we chose for Nani was “I want break, please” which already existed in her behavior repertoire. The first therapist reported that she was saying, “I want break, please” in her sessions. This may have influenced Anahi’s choice to implement the C-FCT procedures. We chose “I want break, please” as the C-FCR because Nani did not emit the C-FCR with mom in first in-situ assessments and she did not say “please” in the S-FCT or the reversal baseline with the second therapist.

**Conclusion**

This study is the first to create a questionnaire that behavior analyst can use as a guide to when identifying FCRs that are sensitive to their client’s cultural values. More research is needed in this area as the results of this project demonstrate that behavior analysts and caregivers believe
that it is important to consider culture in behavior analytic services and that many behavior analysts are not doing so (Phase I). Furthermore, parents will prefer to implement procedures that have been adapted to their cultural values (Phase II). To continue to strive for social validity, one of the dimensions of ABA (Baer, Wolf, and Risely, 1968), behavior analysts should design goals for treatment and create procedures that are acceptable to the family (Wolf, 1978). Integrating a clients’ culture into services is a way to achieve this goal.
Overall, how clear were the instruction for completing the CARES?

![Figure 1. Percent of Behavior Analyst's Responses Related to Question Overall Clarity](image1)

Overall, how easy or difficult was it to complete the CARES?

![Figure 2. Percent of Behavior Analyst's Responses Related to Overall Difficulty](image2)

How likely would you be to use the CARES in the future?

![Figure 3. Percent of Behavior Analyst's Responses Related to Future Use](image3)

*1 caregiver did not respond.

How likely would you be to recommend the CARES to other behavior analysts?

![Figure 4. Percent of Behavior Analyst's Responses Related to Future Recommendations](image4)
How easy or difficult was it for you to understand this question in the CARES?

![Bar graph showing the percent of responses related to question difficulty.]

*Figure 5. Percent of Caregiver's Responses Related to Question Difficulty*

How relevant do you believe this question was to help you identify a communication response?

![Bar graph showing the percent of responses related to question relevance.]

*Figure 6. Percent of Caregiver's Responses Related to Question Relevance*

Is there any wording or part of the question that you found confusing or inappropriate? If so, explain.

![Bar graph showing the percent of responses related to question clarity or appropriateness.]

*Figure 7. Percent of Caregiver's Responses Related to Question Relevance*

* 79 caregiver did not respond.

*Figure 8. Percent of Caregiver's Responses Related to Question Clarity or Appropriateness*
How easy or difficult was it for you to understand this question in the CARES?

How relevant do you believe this question was to help you identify a communication response?

How relevant do you believe this question was to help you identify a communication response that matched your family’s values?

Is there any wording or part of the question that you found confusing or inappropriate? If so, explain.

* 69 caregiver did not respond.
Figure 13. Parents’ Results on the Cultural Socialization of Latino Children
Figure 14. Parent Training Data. Sessions are shown on the x-axis; the percentage of treatment integrity is shown on the y-axis. The closed circles represent the parents’ scores. The top panel shows Andres’s data, the middle panel shows Miguel’s data, and the bottom panel shows Anahi’s data.
Figure 15. Summary Data. Sessions are shown on the x-axis, responses per minute (RPM) are shown on the y-axis, and the percent of treatment integrity is shown on the secondary y-axis. The closed circles represent problem behavior, the open squares represent the S-FCR, the open circle represent the C-FCR, and the asterisks represent the parents’ fidelity scores. Andres Jr’s data is on the top panel, Nani’s data is on the middle panel, and Miguel Jr’s data is on the bottom panel.
Figure 16. Parents’ Choice Data. Sessions are shown on the x-axis and parents’ choice is shown on the y-axis. The one on the x-axis represents the FCT the parents’ chose to implement. The zero represent the FCT the parent did not choose to implement. The closed circles represent the S-FCT sessions and the open circles represent C-FCT sessions. Andres’s data are shown on the top panel, Anahi’s data are on the middle panel, and Miguel’s data are shown on the bottom panel.
REFERENCES


Calzada, E. J. (2010). Bringing culture into parent training with Latinos. Cognitive and Behavioral Practice, 17, 167-175. doi:1016/j.cbpra.2010.01.003


APPENDIX A:

CULTURALLY-ADAPTED RESPONSE EVALUATION SURVEY (CARES)

Child/Client: ______________________ Date of interview: ____________________
Respondent: ______________________ Interviewer: ______________________
Respondent’s relationship to child: ______________________

Instructions: The purpose of the Culturally-Adapted Response Evaluation Survey (CARES) is to identify a communication response that matches the family’s cultural values. This interview form should be completed with the client’s caregivers. Use the answers from questions 1-14 to choose a communication response. Once a communication response is chosen, Part II of the interview should be completed.

Part I. Complete this section with the client’s caregiver.

1. Given your child’s communication ability, how would you like your child to communicate with you and others (e.g., vocal responses, picture cards, word cards, button presses)?

2. Is it appropriate for your child to interrupt you while you are busy (e.g., on the phone, cleaning, talking others)? If yes, explain why. If no, explain why not.

3. What should your child do if you are busy?

4. How would you like your child to ask for your attention if you are busy?

5. After you have told your child that (s)he could not have an item/activity (e.g., toy, iPad, break, food), is it appropriate if (s)he requests the desired item/activity more than one time? If yes, explain why. If no, explain why not?

6. Is it important to you that your child uses his/her manners (e.g., saying please, thank you, excuse me)? If yes, explain why. If no, explain why not?

7. Do you think it is important to speak formally to others (e.g., say mister, miss)? If yes, explain why. If no, explain why not?

8. Do you think it is important for your child to provide eye contact while speaking to you or others? If yes, explain why. If no, explain why not?

9. Is it acceptable for your child to ask for items/activities (e.g., toys, tablets, video games) that do not belong to him/her? If yes, explain why. If no, explain why not?
10. Is it acceptable for your child to refuse to do something (e.g., homework, pick up toys, put shoes away) you have asked him/her to do? If yes, explain why. If no, explain why not?

11. When you ask your child to complete something (e.g., homework, pick up toys, put shoes away), is it acceptable for him/her to ask you to complete the task at a later time? If yes, explain why. If no, explain why not?

12. Is it acceptable for your child to ask for a break while (s)he is completing a task? If yes, explain why. If no, explain why not?

13. What language do you primarily use when talking to your child?

14. If possible, would you like your child to use this language you speak to him/her to communicate with you and others? If yes, explain why. If no, explain why not?

**Part II: Complete this section with the parent after you have identified a communication response.**

**Instructions:** Complete the following questions after you have chosen a communication response for the client. This section will help identify the extent to which parents find the chosen communication response acceptable.

**Chosen communication response:** _________________

1. Would you like your child to use the chosen communication response, and if s(he) does, will you provide the item/activity/break s(he) requested? If yes, explain why. If no, explain why not?

2. Do you think your family is likely to honor your child’s request when s(he) uses the chosen communication response? If yes, explain why. If no, explain why not?

3. How important is it to you that your family honors the chosen communication response?

4. Do you think your community (e.g., friends, neighbors, teachers) is likely to honor your child’s request when they use this communication response? If yes, explain why. If no, explain why not?

5. How important is it to you that your community (e.g., friends, neighbors, teachers) honors this communication response?

6. Does the chosen communication response match your family’s values? If yes, explain why. If no, explain why not?
APPENDIX B:

CULTURALLY-ADAPTED RESPONSE EVALUATION SURVEY (CARES)-ESPAÑOL
CUESTIONARIO SOBRE FORMAS DE COMUNICACIÓN

Niño(a)/Cliente: ______________________ Fecha de entrevista: ______________________
Persona encuestada: ___________________ Encuestador: _________________________
Relación con el niño(a): ______________

Instrucciones: El propósito del CARES es identificar una respuesta de comunicación que coincida con los valores culturales de cada familia. El CARES tiene dos partes. En la parte I, responderá preguntas para identificar una forma de comunicación. En la parte II, usted identificará si la forma de comunicación escogida es apropiada para su para la familia del cliente. Este cuestionario debe ser llenado con los padres del cliente. Al terminar la parte I, por favor llene la parte II del cuestionario.

Parte I. Complete esta sección con el padre/madre del cliente.

1. Dada la capacidad de comunicación de su hijo(a), ¿Cómo le gustaría que su hijo(a) se comunicara con usted y otros (por ejemplo, hablando, usando tarjetas de imagen, tarjetas de palabras, señas)?

2. ¿En su opinión, es apropiado que su hijo(a) le interrumpa mientras está ocupado(a) (por ejemplo, en el teléfono, limpiando, hablando con otros)? Explique por qué (si o no).

3. ¿Qué debe hacer su hijo(a) si usted está ocupado(a) y el/ella necesita algo?

4. ¿Cómo le gustaría que su hijo(a) pidiera su atención si usted está ocupado(a)?

5. Después de decirle a su hijo(a) que no puede tener un juguete o actividad preferida (por ejemplo, iPad, descanso, comida), ¿Usted considera que es apropiado que su hijo(a) lo pida más de una vez? Explique por qué.

6. ¿Es importante para usted que su hijo(a) use modales (por ejemplo, por favor, gracias, disculpe)? Explique por qué.

7. ¿Cree usted que es importante hablar formalmente con los demás (por ejemplo, decir señor, señorita, usted, señora)? Explique por qué.

8. ¿Piensa que es importante que su hijo(a) use lo vea a los ojos mientras habla con usted o otros? Explique por qué.
Appendix B continued

9. ¿Es aceptable que su hijo(a) pida juguetes/actividades (por ejemplo, juguetes, tabletas, videojuegos) que pertenezcan a otros niños? Explique por qué.

10. ¿Es aceptable que su hijo(a) se niegue a hacer algo (por ejemplo, tarea, recoger juguetes, poner zapatos) que le ha pedido que haga? Explique por qué.

11. Cuando usted le pide a su hijo que haga algo (por ejemplo, tarea, recoger juguetes), ¿Usted aceptaría que el/ella pida hacerlo más tarde? Explique por qué.

12. ¿En su opinión, es aceptable que su hijo pida una descanso mientras está haciendo una tarea? Explique por qué.

13. ¿Qué idioma usa cuando habla con su hijo?

14. Si es posible, ¿Le gustaría que su hijo usara este idioma para hablar con usted o con los demás? Explique por qué.

**Parte II: Llene esta sección después de haber identificado una respuesta de comunicación para el cliente.**

**Instrucciones:** Complete las siguientes preguntas luego de haber contestado todas las preguntas de la Parte I. Esta sección ayudará a identificar si los padres encuentran aceptable la forma de comunicación escogida.

**Respuesta de comunicación escogida: ________________________**

1. ¿Desea que su hijo utilice la respuesta de comunicación escogida? Si lo hace, usted le dara el juguete/actividad? Explique por qué.

2. ¿Cree usted que su familia cumpla la petición de su hijo(a) cuando él/ella utilice la respuesta de comunicación escogida? Explique por qué.

3. ¿Qué tan importante es para usted que su familia cumpla la petición de su hijo?

4. ¿Cree que otros que pasan tiempo con su hijo (por ejemplo, amigos, vecinos, maestros) cumplan la petición de su hijo cuando usa esta respuesta de comunicación? Explique por qué.

5. ¿Qué tan importante es para usted que otros que pasan tiempo con su hijo (por ejemplo, amigos, vecinos, maestros) cumplan la petición de su hijo?

6. ¿La respuesta de comunicación elegida, coincide con los valores de su familia? Explique por qué.
APPENDIX C:

COVER LETTER

Dear Parent,

I am a student at the University of South Florida, and I am conducting a study on adapting behavior analysis services to the client’s culture. More specifically, I am creating the Culturally-Adapted Response Evaluation Survey (CARES) that will help behavior analysts consider the families’ cultural values when choosing a communication response. A communication response is a behavior that is taught to individuals so they can appropriately ask for their wants and needs (like vocal responses, picture cards, word cards, button presses). The results of this study will help improve the behavior analysis services that are given to clients from different cultures.

It is my understanding that you are a Hispanic parent that has a child that is diagnosed with developmental and intellectual disability who is currently receiving Applied Behavior Analysis services.

I am interested in learning about your experience completing the CARES. I would like to ask you to complete the CARES with your behavior analyst then complete a survey about your experience during the interview.

I have enclosed the following documents:

- The Instructions for Parents
- The Demographic Questionnaire
- The Experience Survey for Parents

I want to stress that your participation in this study is completely voluntary and we will protect your identity and keep all your information confidential.

If you decide not to participate in the study, please return the material to the following address or shred every document.

I look forward to learning about your experiences while using the CARES. Your participation will be greatly appreciated.

Sincerely,

Anna Garcia
Appendix C continued

Instructions for Parents

Steps:

☐ Complete the Culturally-Adapted Response Evaluation Survey (CARES) with the behavior analyst.

☐ Complete the “Experience Survey for Behavior Analysts” and the “Demographic Questionnaire”. You may ask the behavior analysts for help if a question or a word is confusing. However, you should not talk to them about your answers.

☐ Insert the completed “Experience Survey for Behavior Analysts” and the “Demographic Questionnaire” in the manila (yellow) envelope.

☐ Return the envelope to the behavior analyst.
Appendix C continued

Demographic Questionnaire

**Please answer the questions by circling the answer that best applies to you. All your answers will remain confidential**

1. How are you related to the child who is receiving behavior analysis services?
   ______________________

2. What is your child’s gender?
   ______________________

3. How old is your child?
   ______________________

4. What is your child’s diagnosis? (You may write more than one, if necessary)
   ______________________

5. What is your primary language?
   o English
   o Spanish
   o French
   o Other ____________

6. What is your ethnicity?
   o Hispanic or Latino
   o Not Hispanic or Latino
   o Other: ______________

7. What is your race?
   o American Indian/Alaskan Native
   o Asian
   o Native Hawaiian/Pacific Islander
   o Black or African American
   o White
   o Other: ____________

8. How long have you lived in the U.S.?
   o Less than 9 years
   o 10-19 years
   o 20-29 years
   o 0-39 years
   o More than 40 years
   o All my life

9. What is the highest level of education you completed?
   o Grammar school
   o High school or equivalent
   o Vocational/technical school (2 year)
   o Some college
   o Bachelor's degree
   o Master's degree
   o Doctoral degree
   o Professional degree (MD, JD, etc.)
   o Other ____________________
Appendix C continued

Experience Survey for Parents

Please answer the following questions about your experience completing the CARES with the behavior analyst. Some questions will be open-ended: please describe your answers to these questions with detail. Some questions are multiple-choice: you may check or circle the answer that best describes your opinion on these questions. Remember, a communication response is a behavior that is taught to individuals so they can appropriately ask for their wants and needs (like words, picture cards, word cards, button presses).

1. What do you think is the goal of the CARES?

2. Do you think the time it took you to complete the CARES was appropriate? Explain?

3. Overall, how clear were the questions from the CARES?
   - Very Easy
   - Easy
   - Neutral
   - Hard
   - Very Hard

4. Overall, how easy or difficult was it to answer the questions for the CARES?
   - Very Easy
   - Easy
   - Neutral
   - Difficult
   - Very Difficult

5. Do you believe it is important for behavior analysts to consider your cultural values when choosing a communication response to teach your child? Explain.

6. Do you believe it is important for behavior analysts to consider any part of your culture (e.g., religion, language, traditions) when choosing a communication response to teach your child? Explain.

7. In the past, has your behavior analysts ever asked you about how the communication responses that were chosen to teach your child matched your family’s cultural values? If yes, provide examples.

8. In the past, has your behavior analysts ever asked you about how the communication responses that were chosen to teach your child matched your family’s cultural values? If yes, provide examples.

9. Do you think this interview is meant for people like yourself, or is it for other people? Why?
Appendix C continued

The following items will ask you specific questions about each question in the interview. Circle or check your best answer.

Part I

Question 1: How do you communicate (e.g., vocal speech in English, Spanish, gestures…) with _______?

1. How easy or difficult was it for you to understand this question in the interview?
   - Very Easy
   - Easy
   - Neutral
   - Hard
   - Very Hard

2. How relevant do you believe this question was to help you identify a communication response?
   - Very Relevant
   - Relevant
   - Neutral
   - Irrelevant
   - Very Irrelevant

3. How relevant do you believe this question was to help you identify a communication response that matched your family values?
   - Very Relevant
   - Relevant
   - Neutral
   - Irrelevant
   - Very Irrelevant

4. Is there any wording or part of the question that you found confusing or inappropriate? If so, explain.

**Do you have any suggestions for improving the interview?**
Appendix C continued

Cover Letter

Dear Behavior Analyst,

I am a student at the University of South Florida, and I am conducting a study on adapting behavior analytic interventions to the client’s cultural background. More specifically, I am creating a Culturally-Adapted Response Evaluation Survey (CARES) that will help behavior analysts consider the families’ cultural values when choosing communicative responses and implementing functional communication training (FCT). A communication response is a behavior that is taught to individuals so they can appropriately ask for things they want or need (e.g., words, picture cards, word cards, button presses). The results of this study will help improve the provision of behavior analytic services to individuals of diverse cultural backgrounds.

It is my understanding that you are currently a BCBA or BCaBA who has conducted functional communication training with children between 3-17 years old with developmental and intellectual disabilities, and that you have more than two years’ experience creating and implementing behavior intervention plans.

I am interested in learning about your experience while using the CARES. I would like to ask you to use the CARES to choose a functional communicative response for one of your clients and then complete a survey about your experience completing the form.

I have enclosed the following documents:

- The Instructions for Behavior Analysts
- The Culturally-Adapted Response Evaluation Survey (CARES)
- The Demographic Questionnaire
- The Experience Survey for Behavior Analysts

I want to stress that your participation in this study is completely voluntary and all efforts to protect your identity and keep the information confidential will be taken.

If you decide to not participate in the study, please return the material to the following address or shred every document.

I look forward to learning about your experiences while using the CARES. Your participation will be greatly appreciated.

Sincerely,

Anna R. Garcia, MA, BCBA
Appendix C continued

Instructions for Behavior Analysts

Steps:

- Complete the Culturally-Adapted Response Evaluation Survey (CARES) with the parent.

- Provide the “Parent Packet” to the parent and have him/her complete the “Experience Survey for Parents” and the “Demographic Questionnaire”. The parent should complete the surveys independently. You may help the parent if s/he needs clarification on a word or question. However, you should not influence their answers.

- Complete “The Experience Survey for Behavior Analysts” and the “Demographic Questionnaire” independently.

- After the parent has completed the surveys, collect the manila envelope with the completed surveys.

- Return the documents using one of the following methods:
  - Mail all documents in the white envelope. No postage is necessary.
  - Scan and email all documents to argarcia@mail.usf.edu.
  - Take a picture of all documents and text them to (813) 407-9172.

If you are mailing the documents, please follow these instructions:

- Insert the parent’s manila envelope and your surveys in the white envelope and seal it.

- Mail all documents in the white envelope. No postage is necessary.
Appendix C continued

Demographic Questionnaire

**Please answer the questions by circling the answer that best applies to you. All your answers will remain confidential**

1. What is your primary language?
   - English
   - Spanish
   - French
   - Other: _____________

2. What is your ethnicity?
   - Hispanic or Latino
   - Not Hispanic or Latino
   - Other: _____________

3. What is your race?
   - American Indian/Alaskan Native
   - Asian
   - Native Hawaiian/Pacific Islander
   - Black or African American
   - White
   - Other: _____________

4. How long have you provided services to the client for whom you completed the CRI?
   _____ years _____ months

5. What is the highest level of education you completed?
   - Some college
   - Bachelor's degree
   - Master's degree
   - Doctoral degree
   - Professional degree (MD, JD, etc.)
   - Other: ______________

6. How long have you been a Board Certified Assistant Behavior Analyst (BCaBA)?
   - _____ years _____ months
   - I have never been certified as a BCaBA

7. How long have you been a Board Certified Behavior Analyst (BCBA)?
   - _____ years _____ months
   - I have never been certified as a BCBA

8. How long have you been a Board Certified Behavior Analyst-Doctoral (BCBA-D)?
   - _____ years _____ months
   - I have never been certified
Appendix C continued

Experience Survey for Behavior Analysts
Please answer the following questions about your experience completing the CARES with the parent. Some questions will be open-ended: please describe your answers to these questions with detail. Some questions are multiple-choice: you may check or circle the answer that best describes your opinion on these questions.

1. What do you think is the goal of the CARES?

2. Approximately, how long did it take you to complete the CARES?

3. Do you think the time it took you to complete the CARES was appropriate? Explain?

4. Overall, how clear were the instructions for completing the CARES?
   - Very Clear
   - Clear
   - Neutral
   - Unclear
   - Very Unclear

5. Overall, how easy or difficult was it to complete these CARES?
   - Very Easy
   - Easy
   - Neutral
   - Difficult
   - Very Difficult

6. Is there anything about the CARES you particularly liked? If so, describe what you liked.

7. Is there anything about the CARES you did not like? If so, describe what you did not like.

8. Do you think the CARES is meant for people like yourself, or is it for other people? Why?

9. How likely would you be to use the CARES in the future?
   - Very Likely
   - Likely
   - Neutral
   - Unlikely
   - Very Unlikely

10. How likely would you be to recommend the CARES to other behavior analysts?
    - Very Likely
    - Likely
    - Neutral
    - Unlikely
    - Very Unlikely
Appendix C continued

The following questions will ask you about the communicative response you identified from the CARES.

*A communication response is a behavior that is taught to individuals so they can appropriately ask for things they want or need (e.g., words, picture cards, word cards, button presses).

1. How helpful was the CARES to identify a communicative response?
   o Very helpful
   o Helpful
   o Neutral
   o Unhelpful
   o Very Unhelpful

2. How likely are you to teach the communicative response you identified in the CARES to your client?
   o Very Likely
   o Likely
   o Neutral
   o Unlikely
   o Very Unlikely

3. Do you believe it is important to consider the families’ cultural values when choosing a communication response? Explain

4. Do you believe it is important to consider any aspects of the families’ culture (e.g., religion, language, traditions) when choosing a communication response? Explain

5. In the past, have you ever asked your clients’ how the communication responses you chose matched their family’s cultural? If yes, provide examples.

6. In the past, have you ever asked your clients’ how the communication responses you chose matched any aspect of their culture (e.g., religion, language, traditions)? If yes, provide examples.

7. Do you believe you would have identified the same communicative response without the CARES (using other methods)? Explain.

The following questions are about Part II of the CARES.

1. Did you learn whether the caregiver is likely to reinforce the communicative response you chose for the client?
2. Did you learn whether the caregiver found the communicative response acceptable?

3. Did you learn whether the FCR you chose matched the family’s values?

*The following items will ask you specific questions about each question in the CARES. Circle or check your best answer.*

**Part I**

**Question 1:** How do you communicate (e.g., vocal speech in English, Spanish, gestures…) with ________?

1. How easy or difficult was it for you to understand this question in the CARES?
   - Very Easy
   - Easy
   - Neutral
   - Hard
   - Very Hard

2. How relevant do you believe this question was to help you identify a communication response?
   - Very Relevant
   - Relevant
   - Neutral
   - Irrelevant
   - Very Irrelevant

3. How relevant do you believe this question was to help you integrate the client’s cultural beliefs when choosing a communication response?
   - Very Relevant
   - Relevant
   - Neutral
   - Irrelevant
   - Very Irrelevant

4. Is there any wording or part of the question that you found confusing or inappropriate? If so, explain.

**Do you have any suggestions for improving the interview?**
APPENDIX D:

SOCIAL VALIDITY QUESTIONNAIRE

1. Are you comfortable with the communication response that was chosen for your child?

2. How well does the communication response fit with your values and beliefs about raising your child?

3. How likely are you to honor your child’s request when s(he) uses the chosen communication response?

4. Do you think your family is likely to honor your child’s requests when s(he) uses the chosen communication response?

5. Do you think others who spend time with your child (e.g., friends, neighbors, teachers) are likely to honor your child’s request when they use this communication response?

6. Do you believe the behavior analyst understood the need of your child when choosing a communication response?

7. Do you believe the behavior analyst took into account your understanding of your child when choosing a communication response?