Objective: The present study was designed to examine the psychometric properties and correlates of an existing measure of father involvement with infants, The Paternal Involvement with Infants scale (PIWIS), with Latino fathers.

Background: Fathers’ involvement with their infants is associated with positive outcomes for family members. Father involvement is known to vary by child, familial, societal, and cultural factors, emphasizing the need for further research with specific populations of fathers, including Latino fathers.

Method: Addressing this need, we examined the psychometric properties of a multidimensional measurement of father involvement with infants, the Paternal Involvement with Infants Scale (PIWIS), with 203 Latino fathers of infants up to 12 months of age.

Results: Results support a five-factor model validating the PIWIS as a measurement of father involvement with Latino fathers of infants. Findings revealed moderate to strong construct validity for the PIWIS and five subscales offering unique utility for Latino fathers. Variability between dimensions of father involvement and related constructs are discussed.

Conclusion: Taken together, these findings suggest that the PIWIS reflects a valid and reliable measure of Latino fathers’ involvement with infants.

Implications: The PIWIS can be utilized to deepen our understanding of the interrelationships among well-established aspects of fathers’ involvement including mental health, partner support, familial support, and cultural factors.

Quality father involvement during early childhood is associated with positive social (e.g., prosocial skills; Lindsey et al., 2010), emotional (e.g., self-regulation, externalizing behaviors; Paquette & Dumont, 2013; Ramchandani et al., 2013), and cognitive (e.g., executive function; Bronte-Tinkew et al., 2008; Meuwissen & Englund, 2016) outcomes for children. Assessing father involvement with infants can inform practice, programmatic efforts, and policies designed to encourage fathers to take part in their infants’ lives. A deeper understanding of the nature of father involvement and the factors associated with involvement behaviors can inform interventions concentrated on family
and individual development. Variations in father involvement due to child, familial, societal, and cultural factors indicate the need for further attention given to diverse groups of fathers (Cabrera et al., 2011).

Latinx is among the fastest growing minority groups in the United States (U.S. Census Bureau, 2010). The majority of existing research on Latino fathers in the United States has used restrictive father involvement indicators and has not adequately addressed key cultural variables, including acculturation and familismo (Guendelman et al., 2018). Studies comparing Latino fathers to other groups have shown variable results with respect to the quality and quantity of Latino fathers’ involvement with infants (Cabrera et al., 2011). Finally, the scant attention that Latino fathering has received in the academic literature often addresses fathers of older children, neglecting the critical early stages of infancy and toddlerhood that set the stage for subsequent involvement behavior (D’Angelo et al., 2012). The present study was designed to examine the psychometric properties and correlates of an existing measure of father involvement with infants, the Paternal Involvement with Infants scale (PIWIS), with Latino fathers (Singley et al., 2018).

Measurement of Paternal Involvement with Infants

While the father involvement literature has grown since the emphasis was initially placed on theorizing fatherhood (Lamb et al., 1985), the empirical literature examining father involvement in diverse contexts, including developmental periods, family interactions, and culture, is still emerging (Cabrera et al., 2018). All members of the family system contribute to variability in father involvement in this critical and transitional year of development. Postpartum depression in both mothers and fathers can impact the amount of father involvement in complex ways during infancy (Singley & Edwards, 2015; Paulson & Brazemore, 2010). For example, maternal postpartum depression has been associated with an increase in father involvement in the first half of infants’ first year of life and a decrease in father involvement in the second half (Goodman et al., 2014). Infants caregiving needs, such as feeding, can additionally lead to shifts in both type and amount of father involvement (de Montigny et al., 2018).

Measurements and assessment of fathering that is father-reported is needed to understand the nuances of father involvement from the father’s perspective. Initial research on parenting was primarily normed on maternal reports and samples that focused around constructs such as attachment, sensitivity and parent–child observed interactions (Adamsons & Beuhler, 2007; Gridley et al., 2019; Marsiglio et al., 2000). Historically, maternal involvement measures explored caregiving and emotional attunement and paternal involvement measures focused on father residence and financial assistance (Day & Lamb, 2004). Research suggests that mothers’ and fathers’ involvement in infancy varies in time spent in differing dimensions of fathering (e.g., responsibility behaviors, engagement and play behaviors) that align with social norms of mothers as caretakers and fathers as helpers (Kotila et al., 2013; Paquette & Dumont, 2013). Social norms and expectations influence father involvement in infancy with men who identify with traditional masculine ideals showing resistance to behaviors and roles typically associated with contemporary fatherhood norms (e.g., egalitarian coparenting, emotional engagement, and direct caregiving; Dette-Hagenmeyer et al., 2014; Pleck, 2010). Moreover, type of engagement differs for fathers as research has indicated that mothers participate more in nurturing and attentive behaviors (Lewis & Lamb, 2003), and fathers display more exploratory and play behaviors (St. George et al., 2017).

Although research in the field of paternal involvement continues to grow, many studies fall short in factoring in a multidimensional approach to father involvement while also addressing critical cultural, individual, and social characteristics (Cabrera & Bradley, 2012). Grounded in the knowledge that fathers and mothers may participate in multiple dimensions of parenting in a unique manner, the Paternal Involvement with Infants Scale (PIWIS; Singley et al., 2018) was initially developed to measure father-reported perceptions of parenting behaviors with infants up to 12 months old. The PIWIS was grounded in Pleck’s (2010) model of paternal involvement and developed from previous research on paternal involvement domains and a panel of subject matter experts. The original EFA and CFA analysis of the PIWIS resulted in 35 items that account for five dimensions of paternal involvement. The
Positive Engagement (PE) subscale of the PIWIS reflects the direct care aspect of involvement (e.g., changing diapers, feeding) and maps neatly onto Pleck’s (2010) original conceptualization of the positive engagement construct. The Indirect Care (IC) subscale taps the father’s time spent in activities that set the stage for others to care for the baby, such as taking the child to medical appointments or arranging childcare. The Warmth and Attunement (WA) subscale assesses traditional play behaviors (e.g., kissing, smiling, interactive play). The Control and Process Responsibility (CPR) subscale reflects higher-order managerial elements of involvement (e.g., choosing media, feeding plans). Finally, the Frustration (F) subscale reflects the father’s negative emotions, such as feeling frustrated about caring for the baby, feeling resentful about increased responsibilities, and experiencing jealousy of his partner’s connection with the infant. The PIWIS is a developmentally specific, multidimensional self-report measure of father involvement, yet the PIWIS has not been validated with a culturally specific sample.

**Paternal Involvement Among Latinos**

Latinx has been identified as a large heterogeneous group that includes multiple countries and territories of origin with shared language and cultural values that evidence vast variability and individual differences (U.S. Census, 2010). The rise in Latinx families in the United States points to a clear need for research to address the changing roles, structures, and experiences of members of these families. In contrast to early research on Latino fathers, which portrayed them as uninvolved, highly authoritarian, and distant (Mirandé, 1977), recent research demonstrates that Latino fathers take care of and play with their infants (Leavell et al., 2012). Since Latinx culture broadly puts the family at the core of the community and fathers’ role in the context of family is evolving toward more and different involvement with family members (Leavell et al., 2012), it is essential to examine specific ways fathers’ behaviors with their infants are shifting, along with the correlates and outcomes of involvement (Capps et al., 2010).

Findings from previous research and theory suggest that Latino fathers’ tendency to embrace familismo, an identified value for the Latinx culture (Smith-Morris et al., 2013), may boost their involvement in all aspects of their infants lives (Glass & Owen, 2010); however, adherence to more traditional machista gender roles (e.g., harsh discipline, protection from threats) may cause lower levels of involvement in caretaking and domestic duties (Volling & Belsky, 1991). Recent conceptualizations of machismo are moving toward a balanced definition that includes warmth, respect of family, provider, and a value of education (Campos, 2008). In this way, machismo itself has come to include positive attributes, including being caring, protector of the family, and responsible for family well-being (Gassman-Pines & Skinner, 2018).

Glass and Owen (2010) split machismo into two factors, negative macho and positive caballerismo attitudes. In their study, macho had a negative relationship with fathers’ involvement, yet the authors used a unidimensional measure of paternal involvement and found no significant association between paternal involvement and caballerismo, suggesting the need for further research. Assessment of psychological acculturation, the process of change as a person or group interacts with society (Berry, 2007), has been shown to be a more accurate reflection of one’s cultural identity than indirect measures, such as length of time living in the United States (Abraído-Lanza et al., 2016). Latino fathers of young children who present more acculturation behaviors engage in more caregiving and physical play activities (Cabrera et al., 2006) in addition to showing lower levels of harsh and neglectful parenting and higher levels of warmth and affection than mothers (Gassman-Pines & Skinner, 2018). Overall, researchers have recommended that father involvement research and practice take into account variability of context and culture while being grounded in multidimensional measures of father involvement (Cabrera & Bradley, 2012; Campos, 2008).

**Present Study**

The psychometric properties of the PIWIS were initially examined with a sample of fathers that were representative of ethnicities of the United States population, as reported in the 2013 U.S. Census (Singley et al., 2018). Multicultural assessment guidelines suggest that assessments must be examined to determine psychometric equivalence across varying cultural populations to ensure that they are culturally sensitive and fair (Council of National Psychological Association for the Advancement of Ethnic Minority
Consistent with these guidelines, this study aimed to examine the psychometric properties of the PIWIS with a sample of self-identified Latino fathers of infants to extend the utility of the PIWIS to this population. First, the internal consistency of all variables was examined. Next, we examined the factor structure of the PIWIS using confirmatory factor analysis. We expected that the CFA analysis would result in the same five-factor model as the initial validation of the PIWIS (Singley et al., 2018). Finally, correlations between the subscales and constructs were explored to establish construct validity.

Constructs were chosen based on father involvement literature and previous validation of the PIWIS. Previous validation of the PIWIS indicated that each of the five dimensions of the PIWIS were uniquely related to constructs associated with father involvement (e.g., self-efficacy, parenting satisfaction, satisfaction with life, social support, parenting alliance, and depressive symptoms; see Singley et al., 2018). Research has shown that increases in father involvement seem to be associated with higher father role salience and social support (Castillo & Sarver, 2012; Fox et al., 2015). In a study of fathers of children birth to 5 years old, researchers found that father role salience and the desire to provide direct care to their children were associated with lower parenting stress (Knoester & Petts, 2017). Lower levels of father involvement have been found to be associated with higher depressive symptoms, stress, and anxiety (Baker, 2014; Paulson et al., 2009). Cultural factors also have been found to be associated with levels of father involvement, including psychological acculturation and familismo (Glass & Owen, 2010; Smith-Morris et al., 2013).

Grounded in this literature, correlations of related constructs (e.g., father role salience, mental health symptoms, psychological acculturation, familismo, and support) were expected to be associated with father involvement in a nuanced manner with each of the five dimensions of paternal involvement with infants. For instance, father’s frustration was expected to be correlated with mental health symptoms though frustration was not expected to be related to every dimension of father involvement, such as indirect care. Previous research on Latino fathers’ involvement suggests that dimensions of father involvement were expected to be associated with fathering role salience and cultural factors such as assimilation and familismo.

**Methods**

**Participants and Procedures**

A sample of 203 Latino fathers was recruited online using the Qualtrics Panels service. Qualtrics Panels identified potential participants from a large database that was developed using multiple sampling techniques, including in-person recruitment, telephone sampling, online recruitment, and recruitment in mobile phone applications. Participants matching researcher demographic specifications are contacted by Qualtrics with an invitation to participate in the study and a link to the study survey.

Benefits of using Qualtrics Panels included finding a hard to reach population and high-quality controls. More specifically, participant responses were not included in the dataset if they failed any of the four attention checks (e.g., “Answer somewhat agree for this item”, “Answer somewhat disagree for this item”). Qualtrics also analyzes data to ensure that participants are not randomly responding or answering too quickly. Finally, participant demographics are a part of participant accounts, reducing the likelihood that participants will complete studies without meeting inclusion criteria. Inclusion criteria included identifying as a Latino father of an infant who is currently living with their coparent.

Participants identified as a Latino father of an infant 12 months of age or younger ($M = 5.8$ months, $SD = 3.4$). Participants’ age was reported as in the mid 20’s ($M = 28.3$, $SD = 5.9$) and this was often their first child ($n = 127$, 62.6%). All participants lived with their child and the mother of their child. Most fathers reported being married ($n = 114$, 56.2%) or partnered ($n = 75$, 36.9%), while some reported being single ($n = 12$, 5.9%), divorced and living with mother of infant ($n = 1$, 0.5%), or having some other relationship status ($n = 1$, 0.5%). Participants were generally employed full-time ($n = 159$, 78.3%) with a median household income of $57,143. For comparison, the median income of Latinx households in the United States is $51,404 (U.S. Census Bureau, 2019a). The remaining participants reported working part-time ($n = 23$, 11.3%), being unemployed ($n = 12$, 5.9%), being a stay
at home dad ($n = 6, 3.0\%$), or holding some other employment status ($n = 3, 1.5\%$). With regards to highest educational attainment, a high-school diploma or equivalent degree ($n = 97, 47.8\%$) was the most common. The remaining participants reported having completed junior high school ($n = 9, 4.3\%$), a bachelor’s degree ($n = 70, 33.3\%$), a graduate degree ($n = 34, 16.2\%$), an associate’s degree ($n = 26, 12.4\%$), or trade/vocational training ($n = 11, 5.2\%$). For comparison, the 2019 U.S. Current Population Survey’s Annual Social Economic (U.S. ASEC) supplement ($N = 65,341$) found that 26% of married Latino men had a high school degree, 9.6% had an associate degree, 24% had a bachelor’s degree, and 15% had a graduate degree (U.S. Census Bureau, 2019b). In comparison, the current sample had significantly more high school graduates, fewer participants with bachelor’s degrees, and similar levels of graduate and associate degrees. It is noteworthy that the U.S. ASEC does not report trade or vocational training. Most participants identified as heterosexual ($n = 165, 81.3\%$) while the remaining identified as bi-sexual ($n = 6, 3.0\%$), queer ($n = 2, 1.0\%$), questioning ($n = 2, 1.0\%$), or some other sexuality ($n = 28, 13.8\%$).

**Measures**

**The Paternal Involvement with Infants Scale.** The Paternal Involvement with Infants Scale (PIWIS; Singley et al., 2018) is a self-report scale designed to measure father involvement as a multifaceted construct to reflect five dimensions of paternal involvement with infants up to 12 months old. Involvement is measured using a 7-point Likert scale (1 = not at all to 7 = more than once a day). The PIWIS consists of five factors: positive engagement (e.g., “changing your baby’s diaper”), indirect care (e.g., “taking your baby to medical appointments”), frustration (e.g., “feeling frustrated when caring for your baby”), warmth and attunement (e.g., “hugging your baby”), and control and process responsibility (e.g., “Making decisions regarding your baby’s well-being”). Previous research has shown that the PIWIS subscales correlate to variables such as social support, parental alliance, and depression. Standardized factor loadings of the five-factor CFA oblique model ranged from .42 to .91, internal consistency estimates ranged from $\alpha = .77$ to $\alpha = .92$, and factor intercorrelations ranged from $- .57$ to $ .81$ (Singley et al., 2018). In the current study, internal consistency estimates ranged from $\alpha = .78$ to $\alpha = .96$. See Table 1 for means and standard deviations for the PIWIS subscales and all other variables included in the present study.

**Depression and Stress Scales.** The Depression and Stress Scales (DASS-21; Norton, 2007) is a 21-item self-report instrument containing subscales that assess depression, anxiety, and stress. Participants rate the frequency and severity of experiencing negative emotions (e.g., “I couldn’t seem to experience any positive feeling at all”) over the week using a 3-point Likert scale (0 = did not apply to me at all, 3 = applied to me very much, or most of the time), with higher scores reflecting more distress. Research has shown support for the factor structure of the DASS-21 in both clinical and non-clinical samples (Brown et al., 1997; Lovibond & Lovibond, 1995). Internal consistency of the DASS-21 was excellent $\alpha = .96$.

**Multidimensional Scale of Perceived Social Support.** The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) is a 16-item self-report scale that assesses respondents’ perceived availability of social support from friends, family, military peers, and intimate partners (e.g., “There is a special person who is around when I am in need”). MSPSS items are rated on a 7-point Likert scale (1 = very strongly disagree to 7 = very strongly agree). The MSPSS full-scale score has shown adequate internal consistency in previous studies with a hierarchical coefficient of .87 (Zimet et al., 1988). The military peers subscale was not used in this study, resulting in 12 items including three subscales. In the current study, internal consistency estimates ranged from $\alpha = .87$ to $\alpha = .89$.

**The Attitudinal Familism Scale.** The Attitudinal Familism Scale (AFS; Steidel & Contreras, 2003) is an 18-item self-report instrument measuring overall familism, as well as four factors: Familial Support, Familial Interconnectedness, Familial Honor, and Subjugation of Self for Family. Items (e.g., “A person should live near his or her parents and spend time with them on a regular basis”) are rated on a 10-point Likert scale (1 = strongly disagree to 10 = strongly agree), with an overall score obtained by averaging the item responses.
Higher scores indicate higher familism. The original study (Steidel & Contreras, 2003) with 124 Latino adults reported a coefficient alpha of .83, demonstrating good internal consistency. In the current study, internal consistency estimates ranged from \( \alpha = .55 \) to \( \alpha = .82 \).

The Psychological Acculturation Scale. The Psychological Acculturation Scale (PAS; Tropp et al., 1999) is a 10-item self-report instrument with items rated on a 9-point Likert scale assessing the culture(s) the participant feels more connected with for that particular item (e.g., “With which group(s) of people do you feel you share most of your beliefs and values?”; \( 1 = \text{only with Hispanics/Latinos} \) to \( 9 = \text{only with Anglos/Americans} \), with responses at the midpoint indicating bicultural connection). Higher scores indicate higher levels of psychological acculturation. In a study with 113 Puerto Rican adults living in Central Florida (Capielo et al., 2015), the reliability of the Spanish and English versions of the PAS was \( \alpha = .90 \) and \( \alpha = .88 \), respectively. In the current study, internal consistency estimate was \( \alpha = .96 \).

**Father Role Salience.** The Father Role Salience scale (FRS; Bruce & Fox, 1999) is a 10-item self-report survey that assesses how central a father’s role identity is to him (e.g., “I like being known as a father”). The FRS uses a 3-point Likert scale (\( 1 = \text{not true} \), \( 2 = \text{somewhat true} \), and \( 3 = \text{true} \)), yielding a total scale score with higher scores reflecting more positive attitudes toward the father identity role. This scale was shown to have an internal consistency of \( \alpha = .64 \). In the current study, the internal consistency estimate was \( \alpha = .64 \).

**Data Analysis**

**Analysis Plan.** First, confirmatory factor analyses (CFA) were conducted using Mplus 8.0 (Muthén & Muthén, 2012) to test the fit of three structural models. The sample utilized within this study exceed recommended sample size requirements for conducting such analyses (e.g., over 200 cases/5 to 10 cases per parameter estimated; Brown, 2015). Consistent with the PIWIS’ initial validation (Singley et al., 2018), a single factor, oblique five-factor, second-order, and bi-factor model was examined. The single factor model included all items of the PIWIS.
loading on one latent construct. The oblique factor examined the five domain scores all intercorrelated. The second-order model examined the five domain scores as well as a higher-order factor. Bi-factor analysis evaluated a primary, total scale score, as well as secondary domain traits that function as residuals of the primary score (DeMars, 2013). While the second-order model examines the utility of multiple domain scores, the second order and bi-factor models explore if a total score is appropriate and if the total score provides interpretable value beyond the individual interpretation of the domain scores, respectively. To assist in interpretation, the confirmatory structures described above are also depicted for the PIWIS in Figure 1 (see Supporting Information supplemental material below).

It was hypothesized that the five-factor oblique structure would provide the best evidence of fit and that most item loadings would exceed .70, consistent with that which was observed by Singley et al. (2018). CFA analyses utilized a categorical approach to the items and a Weighted Least Squares Mean and Variance Adjusted (WLSMV). A categorical approach to the data was selected because the response options used on the PIWIS may be understood best as categorically given their non-normality and finite distributional assumptions. WLSMV is well suited for data fitting this description (Brown, 2015). Likewise, categorical approaches are often equal to, or preferred, in structural equation modeling (e.g., Bandolos, 2014; Rhemtulla et al., 2012). Such an approach was also utilized during the PIWIS validation. Because of recruitment through the Qualtrics Panels service, no data points were missing. Next, to obtain concurrent validity evidence, correlations between the PIWIS and theoretically related variables of parenting and relationship characteristics were calculated. Bootstrapping was utilized to estimate instrument confidence intervals.

Model Evaluation. Fit was determined by examining the $\chi^2$, the Comparative Fit Index (CFI), the Tucker Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). A non-significant $\chi^2$ value is desirable for good fit and indicates the proposed model does not differ from the observed model structure; however, because $\chi^2$ tests are sensitive to sample size and frequently significant, other fit indices are utilized and often preferred. To indicate excellent fit, Hu and Bentler (1999) recommended an RMSEA of close to .06 or below as well as a CFI or TLI of .95 or greater. Acceptable model fit is frequently described as around .08 for RMSEA and a CFI/TLI of .90 or above (Little, 2013). In the case that multiple models achieved equally acceptable levels of fit, chi square difference tests were planned to examine differences between model fit after accounting for the number of estimated parameters.

Results

We begin by describing the validity evidence supporting the PIWIS factor structure in Latino fathers. CFA analyses examined the goodness of fit for the PIWIS within Latino fathers. Results indicate an excellently fitted five-factor oblique model, $\chi^2$ (550) = 1,115.702, p < .001, CFI = .95, TLI = .94, RMSEA = .07 (.07 – .08), an acceptably fitted bi-factor model, $\chi^2$ (525) = 1,470.692, p < .001, CFI = .92, TLI = .91, RMSEA = .09 (.08 – .09), an acceptably fitted second-order model $\chi^2$ (555) = 1,342.831, p < .001, CFI = .92, TLI = .91, RMSEA = .09 (.09 – .10), and a poorly fitted single latent model, $\chi^2$ (560) = 2,665.564, p < .001, CFI = .60, TLI = .57, RMSEA = .14 (.13 – .14).

Chi square difference testing revealed that of the models with interpretable fit, the five-factor model was better fitted to the data than the bi-factor model, $\chi^2$ diff (25) = 354.99, p < .001, and the second order model, $\chi^2$ diff (25) = 227.129, p < .001. Factor loadings for the single, oblique, and bi-factor models are presented in Table 2. Overall, CFA analyses indicated a consistent preference for the correlated oblique structure consistent with the initial validation of the PIWIS (Singley et al., 2018). All item loadings were significant for the oblique five-factor model and factor loadings were consistently above .70, with three exceptions (i.e., Item 19 on Control and Process Responsibility [.61], and Items 28 and 31 on Positive Engagement [.63 and .68, respectively]) and these items were still approaching that value.

Next, concurrent validity evidence was calculated using domain scores of the PIWIS, consistent with the best-fitted five-factor oblique structure. Correlations among the subscales, as well as extra-test descriptive statistics, are provided in Table 1. All five PIWIS subscales evidenced Cronbach’s alpha scores of .78 or
Table 2. Factor Loadings for the One, Oblique, Second-order, and Bi-factor PIWIS models

<table>
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<tr>
<th>Item</th>
<th>One</th>
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<th>CPR</th>
<th>FR</th>
<th>IC</th>
<th>PE</th>
<th>S-O</th>
<th>Oblique</th>
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<th>Second-Order</th>
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<th>Bi-Factor</th>
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Domain Level Loadings

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<td>Positive Engagement (PE)</td>
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Note. G = General Factor, S-O = Second Order General Factor, WA = Warm and Attunement, CPR = Control and Process Responsibility, FR = Frustration, IC = Indirect Care, and PE = Positive Engagement. ns = non-significant. Standardized Item loadings are presented in the top half of the table and standardized covariances are provided for the oblique factor model and second-order models.
higher, reflecting good internal consistency. In general, these correlations demonstrate relationships between the PIWIS and related parenting constructs. Exemplifying this, all PIWIS domains were associated with father role salience, indicating that each PIWIS factor is related to how central being a father is to the participants’ identity. Likewise, Frustration domains scores were also most highly associated with anxiety, depression, and stress on the DASS-21 and were negatively related to social support from the father's significant other. Interconnectedness is also associated with Warmth and Attunement as well as Control and Process Responsibility. These relationships are consistent with those observed on the MSPSS scales.

**Discussion**

This study examined the psychometric properties of the PIWIS, a multidimensional self-report measure of father involvement, in a sample of Latino fathers of infants. Previous research has shown the PIWIS to have good reliability and validity with a United States population representative sample (Singley et al., 2018) and results from the current study confirm that the PIWIS shows evidence of structural validity, construct validity, and internal consistency suggesting the PIWIS is a valid measurement of father involvement with Latino fathers. Consistent with the original validation of the PIWIS, this study confirmed a five-factor model for the PIWIS subscales in a Latino sample of fathers. This finding supports Pleck’s (2010) reconceptualization of fatherhood and suggests that Latino fathers engage with their infants in a multidimensional manner. Although the initial validation of the PIWIS utilized a sample mirroring the U.S. Census data for race and ethnicity, only 3.4% of men in the sample identified as Hispanic or Latino, limiting the exploration of cultural equivalence. Best practices in scale construction suggest that assessments must be equivalent or invariant between members of culturally different populations (CNPAAEMI, 2016). The current study demonstrates that the PIWIS has measurement equivalence when used with Latino fathers. Results suggest that interpretation of the PIWIS should utilize the domain scores separately, rather than through a global, total score. Indeed, the item-factor loadings observed within this study are generally equal to or higher than those observed during the initial validation, supporting the PIWIS as a valid measure of fathering in Latino men. This finding supports current theorizing emphasizing the need to measure father involvement with a multidimensional measure versus a unidimensional score (Schoppe-Sullivan et al., 2004).

Exploratory correlations revealed unique relationships between the PIWIS subscales and constructs known to be associated with father involvement. Our findings point to a clear need to factor in fathers’ experience of mental health, connection with family, and support from his partner as well as friends. Factoring in cultural constructs, such as assimilation and familismo, adds to further understandings of how culture may influence specific dimensions of father involvement for men who identify as Latino. Examination of these associations informs practice and further research into the utility of the PIWIS with Latino fathers as well as further investigation of the constructs related to father involvement with infants. These relationships between construct variables included in this study and the PIWIS subscales are explored to further the discussion of parenting of infants for Latino fathers.

**Warmth and Attunement**

Our results revealed that Latino fathers who reported participating in more Warmth and Attunement, play and caregiving behaviors, tended to have lower levels of mental health concerns. While neither Acculturation nor Familismo full-scale scores were related to Warmth and Attunement, the Interconnectedness subscale of the Familismo scale was highly correlated with Warmth and Attunement, suggesting that having an infant reinforces or increases fathers’ existing sense of importance for family members to spend time with each other. Warmth and Attunement scores were positively related to father’s perceived support from his significant other, family members, and friends, which is congruent with previous relational and co-parenting research (Taylor et al., 2015). Although familial support measured by the Familismo subscale was not significantly related to Warmth and Attunement, Warmth and Attunement was strongly correlated with family social support perceptions as measured by the MSPSS. An inspection of the items in these scales may reflect a difference...
in referent in that the items on the MSPSS specifically use a self-referential and behavioral frame (e.g., “My family really tries to help me”) whereas Familismo subscale items speak more generally in third-person regarding expectations and shoulds (e.g., “A person should rely on his or her family if the need arises”).

Control and Process Responsibility

Control and Process Responsibility subscale scores reflect a higher-order aspect of meta-involvement in which the father monitors and manages processes. Because mothers have historically been seen as the primary caretakers of infants and overseers of domestic tasks (Cherlin, 2010) in particular in the Latinx culture (Mirandé, 1977), there has been limited research regarding fathers’ participation in this aspect of their infants’ lives. Results indicate the greater the fathers’ experience of mental health concerns, the lower involvement in Control and Process Responsibility. Ostensibly, the avoidance associated with anxiety and depression may be implicated in this relationship (Swain et al., 2014). While acculturation was not related to CPR, the Interconnectedness subscale scores were related, suggesting a relationship between Latino fathers’ sense of needing to spend time with family and involvement with his infant. Previous research has shown that in some Latinx families, fathers and mothers share responsibility for major family decisions such as the higher-order Control and Process Responsibility (Coltrane et al., 2004). Taken in hand with the finding that Control and Process Responsibility was not significantly related to fathers’ sense of support from family, the implication is that even though fathers may have extended family support available, he still engages in more egalitarian parenting.

Frustration

The Frustration subscale of the PIWIS reflects fathers’ feelings of being overwhelmed or unable to care for his infant, as well as jealousy of his partner’s connection with his infant. The relationship between the Frustration subscale scores and scores on the DASS-21 reflective of mental health concerns is the strongest correlation among any of the variables included in this study, confirming previous research showing that psychological distress relates to higher levels of withdrawal or avoidant parenting behavior (Lovejoy et al., 2000). Frustration was found to be related to acculturation, suggesting that the more strongly Latino fathers identified with Anglo culture, the more likely they were to experience frustration caring for a young child. Familismo, in general, was also significantly related to father’s frustration, as was the Honor Familismo subscale, which reflects the sense that children must honor the family’s reputation, contribute to finances, and live at home until marriage. Interestingly, this association indicates a relationship in which the more strongly the father feels that children and other family members are bound to protect the family’s honor, the more vulnerable the father is to experiencing feeling overwhelmed, resentful, and jealous of his infant. Finally, Frustration was negatively related to the father’s sense of support from his significant other but was unrelated to support from family or friends. This finding points to a dynamic in which fathers who do not feel supported by their partners are more likely to experience frustration, underscoring the coparenting relationship’s centrality.

Indirect Care

Indirect Care indicates behaviors in which a father is providing for his child’s welfare indirectly. As with the Control and Process Responsibility subscale, fathers’ participation in this type of ancillary involvement has received scant attention in the literature (Cherlin, 2010), so it is surprising that we found a strong positive relationship between Indirect Care scores and father’s experience of stress, depression, and anxiety. One possible explanation may be that because mental health concerns are related to less Warmth and Attunement and Control and Process Responsibility, fathers feels more able to parent in an indirect modern version of protect and provide instead of traditional direct care or play opportunities. Indirect Care also was positively associated with acculturation, meaning that fathers who identified more strongly as Latino were less likely to engage in Indirect Care behaviors, whereas fathers who connect more with an Anglo identity engage in more Indirect Care. As with Frustration, Indirect Care was not related to overall familismo—but was significantly positively associated with the Honor subscale. Also, in line with findings
from the Frustration subscale, Indirect Care was significantly negatively correlated with significant others’ social support, but not with the father’s sense of being supported by friends or family. An implication of this finding is that even when he feels unsupported by his partner, fathers are still able to engage in this type of indirect involvement with their infants. In this way, it appears that fathers’ experience of frustration tends to parallel the tendency to provide more ancillary, indirect care of his infant even when experiencing mental health issues as well as low levels of support from his significant other.

**Positive Engagement**

Interestingly, our results showed no relationship between the father’s experience of mental health symptoms of anxiety, stress, and depression, and participation in Positive Engagement, the work of caring for an infant. This finding suggests that the “new” father who may experience mental health concerns does not change his behavior with respect to caring for his infant because, in spite of his difficulties, he is still expected or desires to meet his infant’s basic needs. This finding relates to previous research on father involvement when faced with challenges. Fathers of preterm infants in the NICU have reported a desire to be involved with their infants regardless of the challenges of the situation (Stefana et al., 2018) and have been found to participate in affectionate talk and touch with their infants in the NICU contributing to infant development (i.e., infant gaze) and father involvement (Stefana et al., 2020). This finding contrasts with the negative relationship found between Warmth and Attunement and experience of depression and anxiety. Mirrored with the rest of the variables under study, Positive Engagement was not shown to be correlated with acculturation or familismo, suggesting it is not the father’s cultural identity that relates to how much of the day-to-day care he engages in. Fathers’ experience of support from his partner and his friends were both positively related to Positive Engagement. Again, familial support was not related to Positive Engagement. Since PE had the fewest significant relationships with any of the other variables in this study, one interpretation is that fathers’ willingness or ability to do the work of caring for their infants is not as strongly impacted as are the other four aspects of father involvement. These findings suggest that this group of fathers is prepared to care for their infants’ basic needs, even when they may have difficulty being involved in other ways.

**Implications and Future Directions**

Advances in measurement of father involvement are vital to researchers and practitioners who work with fathers and families. Results of this study indicate that the PIWIS is a valid and reliable instrument to use with Latino fathers. The unique correlations with each subscale of the PIWIS can inform practitioners in understanding Latino fathers’ strengths and areas for growth. With respect to clinical utility, the PIWIS reflects a concrete way that practitioners can screen Latino fathers’ involvement behavior, beyond a given father’s subscale scores. The behaviorally anchored content of the items of the PIWIS reflects a jumping off point to explore fathers’ authentic experience and hopes for being a father. In keeping with previous research, our findings show that fathers’ experiences of having mental health symptoms and the experience of support from coparents are the two most consistent and pervasive factors related to all five aspects of fathers’ involvement with their infants measured by the PIWIS. Additionally, Latino fathers’ role salience emerged as one of the strongest factors relating to the different dimensions of paternal involvement, informing practice focused on identity role salience to enhance father involvement.

This psychometric evaluation of the PIWIS suggests that this multidimensional measure of father involvement can be utilized in future research examining the nuances of father involvement for Latino fathers. Researchers can use the PIWIS to inform future studies to look more deeply into the unique findings associated with each subscale. Particularly, qualitative research can explicate the nature of some of the relationships found between cultural factors of familismo and acculturation and dimensions of paternal involvement with infants. A key strength of this study is reflected in that the average household income of participants closely mirrored that of the median income of Latinx families in the United States (Fontenot et al., 2018). Additionally, we examined Latino fathers as a heterogeneous group. Future research may want to more deeply examine the possible differences within this group...
by examining other factors such as nationality, immigration status, or low-SES families. In the same way that this research employing a multidimensional measure of paternal involvement underscores important differing facets of fathers’ behavior, our finding that the different subscales of familismo related to these aspects of paternal involvement in varying ways suggests the need to also employ more multidimensional measures of Latino fathers’ cultural identification. Finally, future research should continue to examine the PIWIS with other populations and cultural groups.

**Limitations**

While this study is a contribution to the fathering literature, there are limitations. All self-report data were collected via an online survey, reflecting a monomethod bias that may account for the suggested correlations. Fathers self-selected to complete this survey in an online format, and only English-speaking fathers were included. Immigration status was not collected. Previous research has shown that immigration status may be related to different levels and types of involvement with their infants (D’Angelo et al., 2012), with immigrant Latino fathers being more accessible to their infants, while nonimmigrant fathers show higher levels of engagement and caretaking. This study aimed to examine the heterogeneous group of U.S. Latino fathers; therefore, country and territory of origin were not collected. Future research should examine Latino fathers in consideration of country of origin and immigration status. In addition, the PIWIS should be offered in a Spanish version to include Spanish speaking only participants. Future qualitative research should examine the cultural sensitivity of the PIWIS questions and elicit further data on the cultural perspective of Latino fathers of infants. The survey was limited to co-residing fathers, which are much more likely to have access to and involvement with their infants than nonresident fathers. Mothers were not assessed, and it is highly likely that the mother’s level of familismo and acculturation would be an important factor in how the father engages in the paternal involvement factors. Additionally, the relations between the PIWIS subscales and measures of constructs are correlational, and thus, we cannot infer causality. Lastly, it will be important that future investigations continue to examine various factors associated with parental involvement (e.g., employment variables).

**Conclusion**

The findings from this study suggest that the PIWIS reflects a valid instrument to examine father involvement with infants which deepens our understanding of the interrelationships among well-established aspects of fathers’ involvement, mental health, and experience of support. For example, fathers experiencing high frustration, low partner support, and high psychological distress were more likely to provide indirect care rather than direct positive engagement or warmth suggesting just one cluster of the dimensions of involvement and related constructs which further elucidate Latino fathers’ experience of fatherhood. Employing a multidimensional measurement of father involvement with Latino fathers highlights the unique ways in which father, child, and partner characteristics relate to different facets of fathers’ behavior. For instance, results of this study showed higher levels of acculturation are strongly correlated with providing more indirect care and lower levels of frustration. On the other hand, acculturation was largely unrelated to the commonly studied dimensions of fathers’ positive engagement and warmth and attunement with their infant. Though arguments can be made for a focus on gender-neutral parenthood, research shows that mothering and fathering constructs are socially constructed as is gender (Hughes et al., 2018; Kaplan & Knoll, 2019). Thus, using a father validated measure of parenting behaviors during the transitional developmental period of infancy can add to the current literature on assessment and measurement of fathering. Future research should continue to employ this multidimensional lens on the contours of fathers’ involvement for diverse groups of fathers.

**Author Note**

Portions of these findings were presented as part of a symposium at the 2019 American Psychological Association Convention, Chicago, Illinois, United States. We have no conflicts of interest to disclose.

**References**


de Montigny, F., Larivière-Bastien, D., Gervais, C., St-Arneault, K., Dubeau, D., & Devault, A. (2018). Fathers’ perspectives on their relationship with


**Supporting Information**

Additional supporting information may be found online in the Supporting Information section at the end of the article.

**Figure S1. Confirmatory Factor Analysis of the Paternal Involvement with Infants Scale (PIWIS)**