

## Inventory of Father Involvement and Fathers' Perceptions of Family Life

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### Abstract

Cross-cultural comparisons of father involvement and related issues are still scarce, as are consolidated measures for its assessment. We examined relationships among father involvement and family-related variables, in Brazil, and then compared these results with findings from other countries. In total, 200 fathers with children aged 5 to 10 completed the Brazilian version of the Inventory of Father Involvement (IFI-BR), and measures of stress, marital satisfaction, parent-child relationship, children's social skills and their behavior problems. Correlations among these variables were between .32 and .58, providing new evidence of validity for the IFI-BR. When comparing Brazilian results with correlations observed in other countries, the majority did not differ in magnitude, indicating that father involvement systematically influences the fathers' well-being, family relationships, and their children's socioemotional development, in different countries. In addition to the psychometric evidence for the IFI-BR, these results also indicate the potential for using the IFI in different cultures.

*Keywords:* paternal involvement; culture; father-child relationship; family health; social skills.

### Inventário de Envolvimento Paterno e Percepções dos Pais sobre a Vida Familiar

#### Resumo

Comparações transculturais do envolvimento paterno e questões relacionadas ainda são escassas, como são medidas consolidadas para sua avaliação. Examinou-se relações entre o envolvimento paterno e variáveis relacionadas à família, no Brasil, e comparou-se esses resultados com os de outros países. No total, 200 pais com filhos de 5 a 10 anos completaram a versão brasileira do *Inventory of Father Involvement* (IFI-BR), medidas de estresse, satisfação conjugal, relacionamento pai-filho, habilidades sociais das crianças e seus problemas de comportamento. Correlações entre essas variáveis variaram de 0,32 a 0,58, fornecendo novas evidências de validade para o IFI-BR. Comparando os resultados brasileiros com correlações de outros países, a maioria não diferiu em magnitude, indicando que o envolvimento paterno influencia sistematicamente o bem-estar paterno, as relações familiares e o desenvolvimento socioemocional infantil, em diferentes países. Além das evidências psicométricas para o IFI-BR, esses resultados também indicam o potencial de uso do IFI em diferentes culturas.

*Palavras-chave:* envolvimento paterno; cultura; relação pai-filho; saúde da família; habilidades sociais.

### Inventario de Participación Paterna y Percepciones de los Padres sobre la Vida Familiar

#### Resumen

Las comparaciones transculturales de la participación del padre y temas relacionados aún son escasas, al igual que las medidas consolidadas para su evaluación. Examinamos las relaciones entre la participación del padre y las variables relacionadas con la familia en Brasil y comparamos estos resultados con los de otros países. En total, 200 padres de niños de 5 a 10 años completaron la versión brasileña del *Inventory of Father Involvement* (IFI-BR), medidas de estrés, satisfacción conjugal, relación padre-hijo, habilidades sociales de los niños y problemas de comportamiento infantil. Las correlaciones entre estas variables oscilaron entre .32 y .58, proporcionando nueva evidencia de validez para el IFI-BR. Al comparar los resultados brasileños con las correlaciones de otros países, la mayoría no difería en magnitud, lo que indica que la participación paterna influye sistemáticamente en el bienestar paterno, las relaciones familiares y el desarrollo socioemocional infantil en diferentes países. Además de la evidencia psicométrica del IFI-BR, estos resultados también indican el potencial de usar el IFI en diferentes culturas.

*Palabras clave:* participación paterna; cultura; relación padre-hijo; salud familiar; habilidades sociales.

## Introduction

Around the world, fathering has gained considerable attention among researchers (Chuang & Tamis-LeMonda, 2013; Lamb, 2010). However, many parents have little or no knowledge of factors that

affect paternal involvement, or of how fathering can affect child development and the quality of family relationships, as a unified scientific interpretation of the concepts related to fatherhood has not yet emerged (Rollè, et al., 2019). The role of fathers has been significantly affected by sociocultural changes such as the

increase in divorce rates, the strengthening of movements for gender equality, and the greater presence of women in the labor force (Carrillo et al., 2016).

International comparisons offer a way to explore effects of the cultural context on how fathers participate in their children's lives (Chuang & Costigan, 2018). Another important question, however, is whether there are any significant differences in how father involvement affects the fathers themselves, as well as examining the impacts on their relationships with their partners and their children, in different countries. This is important for testing the cross-cultural validity of theoretical models of fathering. However, until recently, the possibility of making such comparisons has been limited by the absence of measures that are well articulated with contemporary theoretical models of father involvement (Schoppe-Sullivan & Fagan, 2020), and that can meaningfully capture the quality of father involvement in different cultural contexts.

The present study addresses these issues by first presenting an overview of the theoretical models of father involvement and of some of the key relationships that have been reported between father involvement and other constructs, such as the fathers' well-being, family relationships, and their children's socioemotional development. The need for a theoretically sound instrument to strengthen Brazilian research on father involvement is also presented. Finally, we raise the possibility of using the Inventory of Father Involvement as a means of testing whether father involvement is related to other aspects of family life, across different cultures.

### *Theoretical Models of Father Involvement*

In 1987, Lamb et al. proposed a model of father involvement, based on studies conducted in Western societies, that continues to provide a useful framework for this area of study (Chuang & Zhu, 2018). This model is based on three aspects of father involvement: (a) engagement (face-to-face interactions between fathers and their children), (b) accessibility (fathers being available to their children, when needed), and (c) responsibility (when fathers engage in activities for the care and wellbeing of their children) (Green et al., 2019).

Concepts about father involvement have evolved in tandem with studies on important outcomes that are associated with fathering behaviors. Specifically, researchers have investigated the relationships among paternal involvement and a range of cognitive and

socioemotional outcomes for their children (e.g., Liu, 2019; Santis, & Barham, 2017). For example, different dimensions of father involvement (like secure attachment and direct involvement) can positively impact children's social development (Ferreira et al., 2016).

In addition to studies on how father involvement affects child development, researchers have also identified factors related to the fathers' socioemotional health and family relationships, that may affect the quality of his involvement. For example, higher levels of depression, anxiety, and stress among fathers have been linked to lower levels of father involvement (Fisher, 2017; Rienks et al., 2011), and prolonged periods of high parental stress may lead to parental burnout (Roskam et al., 2017). Father involvement is also associated with the father's relationships with the child's mother, including satisfaction with the marital relationship (Grzybowski & Wagner, 2010; Varga et al., 2017).

However, we do not yet know whether there are cross-cultural differences in the psychological importance of fathering, as reflected in the relationships between father involvement and these other constructs. That is, are associations between father involvement and measures of fathers' socioemotional health, marital satisfaction, and child development observed in only a few studies, or in most countries where these relationships have been examined?

### *Research on Father Involvement in Brazil*

A significant part of the psychological research on families has been conducted with European and American families. This is restrictive, as these findings are based on only five percent of the world's population (Arnett, 2008). An increase in attention to other parts of the world is enabling researchers to gain greater insights into the sociocultural contexts of fathering and their families (Chuang & Costigan, 2018). Specifically, a greater focus on research on fathering conducted in developing countries (Soares et al., 2016) creates opportunities to compare findings in a variety of cultural contexts, which can lead to a more comprehensive understanding of father involvement and of how father involvement contributes to child development and other aspects of family well-being.

To date, compared with other countries, there is limited knowledge about the patterns of fathering in Brazil. Given the size and diversity of the Brazilian population, some authors claim that it is difficult to think of a general pattern of fathering, in Brazil (Carvalho et al., 2015). The ways that fathers are involved

in raising their children seem to vary, depending on the region of the country where they live and their social class (Shwalb & Shwalb, 2014). At least three models of fathering seem to coexist: *traditional* (economic providers), *modern* (economic providers and socially interactive), and *polyvalent* (providers, socially interactive, and hands-on caregivers) (Cia et al., 2005). Although they recognize differences in fathering, other researchers point to a generalized change that is occurring in father involvement (Carvalho et al., 2015). A significant difficulty exists, however, as each study has been conducted using a different instrument to evaluate father involvement and there is little, if any, evidence concerning the validity of these measures (Gomes et al., 2014). Thus, to better understand father involvement in Brazil, a first task is to examine information that is obtained using a theoretically and psychometrically sound measure of father involvement that has been adapted for use in Brazil, and that is also in use in other countries.

#### *The Inventory of Father Involvement*

In 2002, Hawkins et al. published the Inventory of Father Involvement (IFI). The IFI is a comprehensive and user-friendly measure that reflects a contemporary theoretical understanding of the father-child relationship. The IFI was initially validated with responses from 723 American fathers with children who were mostly between 5 and 10 years of age. Based on an exploratory, principal components analysis, the researchers suggested that father involvement was comprised of nine dimensions, including: (a) Discipline and Teaching Responsibility, (b) School Encouragement, (c) Mother Support, (d) Providing, (e) Time and Talking Together, (f) Praise and Affection, (g) Reading and Homework Support, (h) Attentiveness, and (i) Developing Talents and Future Concerns. This factor structure is coherent with theoretical discussions about the multidimensional nature of father involvement.

The use of a common measure of father involvement (the IFI) would increase the facility with which information from different cultural contexts can be compared. However, this is only possible once a measure has been adapted for use in different socio-cultural contexts (International Test Commission [ITC], 2017). Typically, this process involves translation, back-translation, the evaluation of semantic, conceptual, cultural, and idiomatic equivalence, and the assessment of operational and measurement equivalence. In Brazil, these initial tasks have already

been completed for the IFI, and, in addition, Santis et al. (2017) have reported information concerning the internal structure of the Brazilian version of the IFI (IFI-BR). Furthermore, the IFI has been adapted for use with fathers in China (Fong & Lam, 2007; Kwok et al., 2012), England (Flouri, 2007), and Portugal (Barrocas et al., 2016).

#### *The Present Study*

As part of the process of accumulating evidence about a measure that researchers and practitioners can use in Brazil, further information about the IFI-BR is needed. To address this issue, we will first examine new evidence of the validity of the IFI-BR, based on the strength and direction of associations with related constructs. Thus, our first objective is to explore whether higher quality of father involvement is related to: (a) lower levels of fathers' perceived stress, (b) higher levels of the fathers' marital satisfaction, (c) greater closeness of the father-child relationship, (d) fewer difficulties in the father-child relationship, (e) more positive evaluations of the child's social skills, and (f) lower levels of child behavior problems.

The second objective of the study is to determine whether higher quality father involvement is related to more positive perceptions of family life, across cultures. More specifically, are the Brazilian findings the same or different, when compared with results reported in the research literature in studies on the relationships among father involvement (assessed using culturally adapted versions of the IFI), father well-being, family relationships, and child development outcomes?

## **Methods**

### *Evidence of validity for the IFI-BR, based on associations with related constructs*

#### *Participants*

A total of 208 fathers with children between the ages of 5 to 10 participated in the study on Brazilian fathers (using the same sample described by Santis, et al., 2017). To reach the largest number and most diverse group of fathers possible, participants did not have to live with the mother of their child, but the father and child needed to have contact at least once a week. Data were excluded for five fathers who did not understand how to use the scoring scales and for two fathers whose wives were present and assisted in the fathers' responses. In addition, one participant with an

outlier value for the total score on the IFI-BR was also excluded. Therefore, the final sample included data from 200 fathers. Of these, 80.5% were recruited in 14 schools, located in a city with approximately 220,000 inhabitants, and 19.5% in two schools located in a city with approximately 40,000 inhabitants. Most fathers (91.0%) reported being married or in a stable relationship. Participants were between 22 and 70 years of age,  $M = 39.5$ ;  $SD = 7.42$ , and each father had between one and six children,  $M = 1.9$ ;  $SD = 0.84$ . When the fathers had more than one child, they were asked to focus on their oldest child, between 5 and 10 years of age, when completing the instruments. The average age of the target children was 7.3 years,  $SD = 1.80$ . The average monthly family income was 7,535.18 Brazilian reais,  $SD = 8521.08$  (which is about \$2,050 USD), varying from 200.00 to 70,000.00 Brazilian reais. Thus, most fathers were in a middle-class income bracket, in the Brazilian context.

#### *Instruments*

**Brazilian version of the Inventory of Father Involvement (IFI-BR).** The original, American version of the Father Involvement Inventory (IFI) included 26 items that focused on the quality of the ways that fathers can promote the development and well-being of their children (Hawkins et al., 2002). The IFI was translated and adapted for use in Brazil (IFI-BR) and evidence of the construct validity of the Brazilian version of this instrument has been established (Santis et al., 2017). Based on a confirmatory factor analyses (using the Maximum Likelihood estimation method), Santis et al. (2017) verified that an eight-dimensional factor structure (comprising 23 items) best fit the Brazilian data. These factors were the same as those of the original IFI, excluding “Developing Talents and Future Concerns”. The authors’ hypothesis is that, due to cultural differences in the way father involvement is expressed in Brazil (for example, efforts to pay for their child to attend a private school), the items that comprise this factor would need to be modified, in future studies, to measure this construct in the Brazilian context (Santis et al., 2017).

The assessment of each item was based on a seven-point Likert scale, ranging from 0 (*very poor*) to 6 (*excellent*), or “does not apply”. Given that the IFI is a self-report measure, it is important to note that the correlations between ratings of father involvement and scores on a measure of social desirability are reasonably low (ranging between .16 and .28), as observed

for a second sample of Brazilian fathers (Santis, 2020). For the sample of Brazilian fathers who participated in the current study, the precision of each of the factors yielded adequate internal consistency values, with Cronbach’s alpha values ranging between .65 and .82; overall internal consistency was .90.

**Social Skills Rating System-BR (SSRS-BR) – parental form.** The parental form of the Social Skills Rating System has evidence of validity for use in Brazil (Bandeira et al., 2009), and is used to obtain parents’ perceptions of their children with respect to two behavioral domains: social skills and behavior problems. First, the parents rated 38 social skills items, indicating the frequency with which they believed their children used each skill (e.g., how often does “your child speak in an appropriate tone of voice at home?”) ( $\alpha = .86$ ) (Bandeira et al., 2009). Next, they evaluate their perception of the frequency of their children’s negative behaviors, based on 17 externalizing and internalizing behavior problems (e.g., how often does “your child fight with others?”) ( $\alpha = .83$ ) (Bandeira et al., 2009). The parental form of this instrument was developed for parents of children in first to fifth grades (for children who are 6 to 10 years of age, in Brazil). Thus, in the current study, fathers with children who were five years of age (26% of the participants) did not complete this measure. The internal consistency for the social skills and the behavior problems scales were .81 and .84, respectively, in the present study.

**Marital Satisfaction Scale (MSS).** Dela Coleta (1989) developed 24 items to capture spouses’ perceptions of how their partners’ behaviors affect the quality of the marital relationship (e.g., how satisfied are you with “the time your spouse dedicates to your marriage?”). This measure was completed by 172 fathers (who had a spouse). Based on Vanalli’s (2012) recommendation, a 10-point rating scale was used (1, *not at all satisfied*, to 10, *highly satisfied*). In the current study, the internal consistency of this scale was .95.

**Perceived Stress Scale (PSS).** Participants evaluated 11 items on a five-point scale (ranging from *never* to *always*), a Brazilian adaptation (Corradi, 1999) of Hewitt et al.’s (1992) version of the Perceived Stress Scale, to indicate the frequency of negative and positive feelings in everyday life. For example, fathers were asked how often, in the last month, they “felt everything was under control.” The internal consistency of this scale in the present study was .82.

**Parent-Child Relationship.** Using Vanalli’s (2012) Brazilian version of this questionnaire, we assessed: (a)

the strengths of the father-child relationship, and (b) difficulties in this relationship. Cronbach's alphas were .66 and .77, respectively, for the current study.

### *Procedures*

#### *Ethical Considerations*

All ethical guidelines for research with human subjects were followed, and the research proposal was approved by the Human Ethics Research Committee (protocol number: 699.911).

#### *Data Collection*

**Evidence of the Validity of the IFI-BR.** Initially, we contacted the director of the Municipal Department of Education in each city, and the board of directors of several private schools located in the same two cities, to obtain authorization to contact the students' fathers. The directors of seven public schools and seven private schools in the larger city and one public school and one private school in the smaller city agreed to assist with the study. Next, an invitation for the fathers was sent home with all the students in the targeted age range, inviting fathers to a meeting at their child's school for data collection. Participation rates varied from 8 to 21%. The researcher was always present during the data collection process, so she could give support to fathers who required assistance. Immediately after participating in the study, the fathers received an information pamphlet about the importance of father involvement, father-child relationships, and the impact of this involvement on their own and their children's lives. After the study was concluded, fathers who were interested were sent a summary of the main results, written in non-technical language. The participating schools also received a printed copy of the research report.

**Comparisons of correlations, across countries, using the IFI to assess father involvement.** Next, we searched the academic literature for articles in which the researchers had used the IFI, in any country, to examine the relationships among father involvement, and any of the following constructs: paternal stress, quality of the marital relationships, closeness of the father-child relationship, their children's positive social behaviors, and their children's behavior problems. Searches were conducted using many different keywords and in different databases, to find the largest possible number of articles that met these criteria.

#### *Data Analysis Strategy*

**Evidence of validity for the IFI-BR, based on associations with related constructs.** The normality of the distribution of observed values for each measure was evaluated using the Shapiro Wilk test. The percentage of missing data was small ( $\leq 5\%$ ), so these omissions were corrected using the multiple imputation method (Enders, 2017). No problems were found with respect to the sensitivity of the items. Scores on the following variables did not meet the criteria for a normal distribution: (a) quality of father involvement, (b) closeness of the father-child relationship, (c) marital satisfaction, and (d) child's behavior problems. Therefore, Spearman correlation tests were used to verify the relationships among father involvement and other variables. According to Nunes and Primi (2010), to attest evidence of validity of a measure (based on associations with related constructs), the correlation between the central construct (in this case, father involvement) and a separate, but related construct is expected to be of moderate strength, with an absolute value between .20 and .50.

**Comparisons of correlations, across countries, using the IFI to assess father involvement.** Results reported in different studies on father involvement, and obtained using the IFI, were compared with the Brazilian results, to examine the importance of father involvement for the fathers' well-being, relationship with the mother and his child, and his child's socioemotional development, across different countries. To statistically compare the magnitude of the correlations, Fisher's  $r$ -to- $z$  transformation test was used, with significant differences being those with  $p < 0.05$  (Lenhard & Lenhard, 2014).

## **Results**

#### *Evidence of validity for the IFI-BR, based on associations with related constructs*

As expected, scores indicating the quality of father involvement (IFI-BR) were significantly correlated with the other five constructs we evaluated, including fathers' perceptions of: (a) paternal stress (PSS) ( $\rho = -.37, p < .001$ ), (b) marital satisfaction (MSS) ( $\rho = .37, p < .001$ ); (c) closeness of the father-child relationship ( $\rho = .58, p < .001$ ), (d) conflicts in the father-child relationship ( $\rho = -.46, p < .001$ ), and (e) their children's social skills (SSRS-BR) ( $\rho = .46, p < .001$ ), and (f) behavior problems (SSRS-BR) ( $\rho = -.32, p < .001$ ). Thus, fathers who rated their parental involvement more positively were

more likely to feel less stressed, reported having closer relationships with their children, felt more satisfied with their marriage, indicated that their children used positive social skills more frequently, and reported that their children had fewer behavior problems. The strength of these correlations was within the expected range to show evidence of validity for the IFI-BR (absolute values between .20 – .50), except for the closeness of the father-child relationship, which was slightly stronger than expected ( $\rho = .55$ ).

*Comparisons of correlations, across countries, using the IFI to assess father involvement*

In Table 1, we present the results for the current Brazilian study, results reported in studies conducted in other countries, and results of the statistical comparison of these correlations. Although the IFI was always used to evaluate the quality of father involvement, the measures used to evaluate other constructs varied.

In the four studies that explored the relationship between father involvement and various indicators of the fathers' mental health problems, significant inversely proportional relations between these constructs were found. The magnitude of the Brazilian correlation ( $\rho = -.37; p < .001$ ) differed statistically only from the correlation reported by Rienkes et al. (2011) ( $r = -.19; p < .05$ ) ( $z = 1.75; p = 0.04$ ).

In nine studies that explored the relationship between father involvement and the fathers' relationship with the mothers, positive correlations were always reported. Only Kwok et al., (2015) reported a relationship ( $r = .66; p < .001$ ) that was in the same direction, but significantly stronger than the Brazilian result ( $\rho = .37; p < .001$ ) ( $z = -4.91; p \leq 0.001$ ).

In the two studies that verified the association between scores on the IFI and positive aspects of the father-child relationship, one value was moderate ( $\rho = .57; p < .001$ , in the present study) and the other was strong ( $r = .85; p < .001$ ; Karre, 2015). The difference in the magnitude of these two correlations was statistically significant ( $z = -5.31; p \leq 0.001$ ). The relationship between scores on the IFI and negative aspects of the father-child relationship was investigated only in the Brazilian study.

A positive relationship between father involvement and indicators of the children's positive socioemotional development was found in the present study ( $\rho = .46; p < .001$ ) and in Flouri's study (2007) ( $\beta = 0.24; p < .001$ ). In addition, Flouri (2004, 2007) examined the relationship between father involvement

and the children's socioemotional problems. Although all the relationships were negative, not all were significant. However, we could not statistically compare regression coefficients ( $\beta$ ) with correlation coefficients ( $\rho$ ). When comparing the magnitude of the relationship found by Flouri, in 2004, using a correlation test ( $r = .33; p < .001$ ) the difference was not significant ( $z = 1.43; p = 0.076$ ).

## Discussion

In the current study, we found new evidence for the validity of the Brazilian version of the Inventory of Father Involvement (IFI-BR, or *Inventário de Envolvimento Paterno*), based on relationships among this measure and related constructs, for a sample of Brazilian fathers whose children were between 5 and 10 years of age. Specifically, the relationships observed indicate that, in Brazil, when fathers reported that their involvement was of better quality, they also reported feeling less stressed, that they had higher quality relationships with their spouse and their children, and that their children's socioemotional development was more positive. These results were as expected, and are coherent with theoretical models of father involvement, providing further evidence for the relevance of this instrument for use in the Brazilian context.

To address the objective of making cross-country comparisons, we examined studies conducted in five cultural contexts, including developed and developing countries. In these studies, we investigated whether different social structures and cultural histories, characteristic of each of these different countries, influence the extent to which father involvement is associated with the fathers' mental health, the quality of the fathers' relationships with his partner and children, and with their children's socioemotional behaviors. The IFI had been adapted for use in each country and had some variations in content (for example, only eight of the nine subscales of the IFI were included in the IF-BR). Furthermore, the remaining variables were evaluated using a variety of different measures, across studies. However, the use a common measure of father involvement (that had the same theoretical basis and that was comprised of a slightly smaller or larger set of the same items), and the similarity of the underlying constructs used to evaluate the related variables, allowed us to make meaningful comparisons among the studies. Thus, we were able to test theoretical predictions about father involvement, and build on previous

Table 1.

*Relationships Between Father Involvement and Related Constructs, in Studies that Used the IFI, and Comparison of these Correlations with Brazilian Results (Fisher's test)*

Area of evaluation Country: Reference	Construct	Relationship	Sample size	Fisher's test ( $\chi^2$ ) <sup>a</sup>
<b>Fathers' mental health</b>				
Brazil	Stress	$\rho = -.37^{***}$	199	
Portugal: Barrocas et al. (2011)	Parenting stress	$r = -.30^{***}$	380	.90
USA: Rienks et al. (2011)	Stressor events	$r = -.26^{***}$	137	1.1
	Anxiety	$r = -.19^*$	137	1.75*
	Depressed mood	$r = -.25^{***}$	137	1.19
England: Flouri (2004) <sup>b</sup>	Fathers' mental health	$r = -.25^{***}$	225	1.36
<b>Father-mother relationship</b>				
Brazil	Marital satisfaction	$\rho = .37^{***}$	172	
China: Fong & Lam (2007) <sup>c</sup>	Marital satisfaction	$r = .30^{***}$	125	.66
	Dyadic adjustment	$r = .35^{***}$	125	.19
China: Kwok et al. (2012)	Marital satisfaction	$r = .41^{***}$	2029	-.59
China: Kwok, et al. (2015) <sup>d</sup>	Marital satisfaction	$r = .66^{***}$	1170	-4.91 <sup>***</sup>
USA: Park (2010) <sup>e</sup>	Marital satisfaction	$.23 \leq r \leq .37^{***}$	372	-
USA: Rienks et al. (2011)	Relationship adjustment	$r = .41^{***}$	137	-.41
	Relationship satisfaction	$r = .31^{***}$	137	.59
England: Flouri (2004)	Inter-parental conflict	$r = -.33^{***}$	225	.45
<b>Father-child relationship</b>				
Brazil	Conflicts	$\rho = -.46^{***}$	199	
	Closeness	$\rho = .57^{***}$	198	
USA: Karre (2015) <sup>f</sup>	Paternal warmth	$r = .85^{***}$	128	-5.31 <sup>***g</sup>
<b>Children's socioemotional development</b>				
Brazil	Child's social skills	$\rho = .46^{***}$	144	
England: Flouri (2007)	Prosocial behaviors	$\beta = 0.24^{***}$	307	NA
Brazil	Behavior problems	$\rho = -.36^{***}$	141	
England: Flouri (2004)	Emotional and behavior problems	$r = -.33^{***}$	225	1.43
England: Flouri (2007)	Hyperactivity	$\beta = -0.25^{***}$	312	-
	Conduct problems	$\beta = -0.11$	311	-
	Peer relationships	$\beta = -0.06$	307	-

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

<sup>a</sup>The test was only used to compare relations evaluated throughout correlation tests (Pearson or Spearman);

<sup>b</sup>Only fathers' responses reported; <sup>c</sup>Fathers were drug addicts. Two IFI items were excluded; <sup>d</sup>Mother informants; <sup>e</sup>Korean fathers who immigrated to the United States after the age of 18. Correlations were reported separately for each of the IFI subscales; <sup>f</sup>Child informants. One IFI item deleted; <sup>g</sup>the magnitude of Karre's correlation was compared with the Brazilian correlation between father involvement and Closeness.

work involving comparisons of the internal structure of the measure (and, thus, of the way fathers understand father involvement and its components) for new versions of the IFI and the original one (for example, Barrocas et al., 2016; Santis et al., 2017).

The strength and direction of the relationship between father involvement and fathers' stress, for Brazilian fathers, was similar to the relationships observed in other studies, conducted in Portugal, the USA, and England and considering various indicators of the fathers' mental health (Barrocas et al., 2016; Flouri, 2004; Rienks et al., 2011). In all the studies, the quality of father involvement was associated with lower levels of mental health problems. The only correlation that differed statistically from the Brazilian value was that reported by Rienkes et al. (2011), who were the only researchers to use a measure of anxiety as an indicator of the father's mental health problems. In Brazil, fathers' mental health was assessed using a measure of stress. Thus, this difference may have arisen due to differences in how fathers report stress, as compared to anxiety.

The relationship between father involvement and the quality of the marital relationship (or similar constructs) has also been evaluated in many studies. Only Kwok et al. (2015) found a statistically stronger relationship between these two constructs, when compared with the Brazilian result. However, the participants in Kwok et al.'s study were mothers, not fathers. They evaluated the involvement of their partner using the IFI and rated their own marital satisfaction. This is interesting, as the mothers' perception of the quality of father involvement was more strongly related to their perceptions of the quality of the marital relationship than it was when fathers were the participants. This demonstrates that father involvement affects both the fathers' and the mothers' perceptions of the couple relationship.

In the present study, the correlation between the quality of father involvement and the closeness of the father-child relationship was slightly higher than expected, based on parameters (minimum of .20, maximum of .50) established by Nunes and Primi (2010). However, considering that only correlations greater than .70 characterize convergent relationships between two constructs (Kim & Abraham, 2017), we suggest that correlations with absolute values between .50 and .70 can also be considered as evidence of validity, based on the relation between the construct of interest and tests evaluating related constructs. Karre (2015) also

found a very strong correlation between scores on the IFI and parental warmth, which differed statistically from the Brazilian correlation. Parental warmth is a construct similar to closeness of the father-child relationship, but this difference may reflect the fact that Karre's study was conducted using children's evaluations of father involvement.

In the Brazilian study, we also found a negative and moderate relationship between scores on the IFI and conflicts in the father-child relationship (greater involvement was associated with fewer conflicts). This finding was in the direction and of the magnitude we expected, adding to evidence of the validity of the Brazilian version of the IFI, and complementing the literature on constructs related to father involvement.

It is also important to examine the relationship between father involvement and how the fathers perceive positive and negative components of their child's social behavior. The strength of the relationship between fathers' involvement and indicators of their children's prosocial behavior is an important finding to take into consideration when designing intervention studies, as many programs focus on helping fathers to increase their control of negative emotions (Santis et al., 2020). Although this issue is also important, the strength of the relationship between father involvement and their children's prosocial behavior may indicate that promoting positive father-child interactions could be a particularly effective strategy to help families. Complementing these findings, Flouri (2004, 2007) noted that lower scores on the IFI were related to higher levels of emotional and behavioral problems among the children, and higher levels of hyperactivity, although these relationships were weaker and father involvement was not significantly related to their children's conduct problems or problems with peers. Thus, the current results concerning the relationship between father involvement and child behavior are as expected and indicate that the quality of father involvement may be particularly important for children's prosocial behavior.

The issue that was most investigated was the relationship between father involvement and the quality of the marital relationship. Historically, concerns about fathering were focussed almost exclusively on how paternal involvement affects child development (Santis & Barham, 2017), but as can be seen in the present findings, researchers are now considering how father involvement affects all family members and relationships, including the conjugal relationship

and the well-being of each of the parents. Given the evidence of these multiple associations between father involvement and other indicators of family life, it will be important to pay greater attention to how fathers' and mothers' interpersonal abilities impact father involvement, as these skills can be improved through psychosocial interventions.

Considering the overall pattern of findings, the strength of the associations among father involvement and indicators of their relationships with other family members and with their child's socioemotional development were always in the same direction (positive or negative) and most of the relationships were of a similar strength, across cultural contexts. These results are congruent with theoretical models, supporting the prediction that father involvement is related to important indicators of children's and parents' psychosocial well-being, even though the specific activities the fathers undertake may vary from one country to the next. Thus, the IFI may be a useful tool to facilitate exchanges among researchers and professionals in different countries, as these similarities may reflect that the inventory is culturally relevant and meaningful in different countries where the measure has been used.

### Final Considerations

To further advance the process of verifying psychometric evidence for the IFI-BR, additional studies are needed to: (a) verify the relationship between scores on the IFI-BR and observational data on father involvement, (b) gather evidence for types of validity that have not yet been verified, such as convergent and discriminant validity, and (c) establish norms for the interpretation of father involvement scores.

We also suggest that, to improve the evaluation of early intervention programs for fathers, it would be helpful to determine whether the IFI can be used to monitor changes in fathers' participation with their younger, preschool-aged children. Researchers have repeatedly demonstrated the strong effects of interactions that occur during the first five years of a child's life on later developmental outcomes (Ferreira et al., 2016). Thus, the feasibility of using the IFI-BR (or a modified version), with fathers of younger children should be examined, as it could be useful in evaluating early intervention programs with fathers.

Although the results for the IFI-BR were consistent with theoretical models of fathering, and the

comparisons made with studies conducted in other countries indicate that father involvement is just as important to families in Brazil as it is in other countries, some limitations of the present study must be considered. First, not all fathers have a primarily constructive relationship with their children, and it may be important to examine how factors such as amount of contact and the nature of the father's relationship with the child's mother may moderate the influence of father involvement. In addition, some of the fathers may have evaluated a conjugal relationship with someone who was not their child's mother, as we did not verify this information. Although, marital satisfaction can affect father involvement, even if the father is in a relationship with someone who is not his child's mother, this impact could be stronger when the father lives with the child's mother. Thus, the lack of more detailed information about the fathers' marital status with respect to their child's mother is a limitation of the present study, as this factor would help to examine father involvement among remarried fathers.

In addition, only fathers participated in the Brazilian study. Therefore, the assessment of father involvement and the other variables was made from a single perspective. It is important to consider father involvement and other aspects of family life from multiple perspectives (such as the mother and the child, for example). Finally, longitudinal studies could help to understand how these variables are related, over time. For example, it would be important to verify whether fathers' feelings of stress, anxiety, or depression, when faced with difficult work situations, lead them to modify their involvement with their children, and to what extent interacting positively with their children helps fathers experience fewer tensions.

Although further information is needed, we conclude by noting that the results presented in this study contribute new evidence in favor of existing theories of father involvement, at an international level. Furthermore, the consistency of the results also strengthens existing evidence concerning the feasibility of using the IFI to measure the quality of father involvement in different countries. A psychometrically sound instrument such as the IFI will continue to help researchers and practitioners to gain good quality information on father involvement. Both single-country and cross-cultural studies conducted using this instrument can facilitate efforts to find effective ways to strengthen the involvement of fathers and to foster good quality relationships between fathers and their children.

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