

INTERPERSONAL INFLUENCE IN FAMILIES: DEVELOPMENT AND PSYCHOMETRIC EVALUATION OF THE INFLUENCE IN FAMILIES QUESTIONNAIRE

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The objective of this article was to develop and psychometrically evaluate a self-report instrument that would assess interpersonal influence in families. The Influence in Families Questionnaire (IFQ) was developed as a 16-item scale which assesses both positive and negative influence. The IFQ and its subscales, when administered to a sample of 581 adolescents and young adults, showed high internal consistency and exhibited a promising pattern of convergent, divergent and criterion validity in relation to relevant criteria such as impact messages, family and attachment relationships and interpersonal sense of control. Overall, these results suggest that the IFQ is a useful instrument for measuring interpersonal influence within families.

Family relations, which form the main focus of family studies, have been studied under many forms and operationalizations. Recently, it has been argued that the focus of most family studies can be categorized according to two constructs, namely influence/control and affectivity/affiliation (Cook, 2005; Eichelsheim, Dekovic, Buist, & Cook, 2009; Jacob & Windle, 1999). The current study focuses on the influence dimension of family relations in line with one of the core notions in systemic family therapy, namely that processes of interpersonal influence form the essence of close relationships (Huston, 2002). Interpersonal influence has been defined as “instances in which events in one partner’s chain are causally connected to events in the other’s chain” (Huston, 2002, p. 170). In other words, it is the process by which relationship partners affect and change each other’s thoughts, behavior and emotions (Huston, 2002). It has been argued that the processes of interpersonal influence which occur in close relationships affect the personal and psychological development of the relationship partners (Bandura, 1997; Bateson,

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1979; Huston, 2002; Seligman, 1975) and the formation and functioning of relationships and family systems (Cook, 2001; De Mol & Buysse, 2008a; Street, 1994). Furthermore, interpersonal influence has acquired a central place within family therapy because of its constructive power in family systems (Rober, 1998) and its usefulness for systemic family assessment (Cook, 2005; De Mol, Buysse, & Cook, 2010). Due to its centrality and importance for families, the concept of interpersonal influence seems to be a well-studied domain, which has been addressed through concepts such as power (Huston, 2002), persuasion (Hsiung & Bagozzi, 2003), self-efficacy (Bandura, 1997) and control (Cook, 1993, 2001). However, according to Huston (2002), the concept of interpersonal influence is broader than that which is usually studied, as interpersonal influence can be intentional as well as unintentional. A purposeful effort to attain a particular outcome would then be considered as intentional influence, whereas when the influence reflects an incidental consequence in the absence of any direct request, it would be considered to be unintentional (Huston, 2002; Levy, Collins, & Nail, 1998). Previous conceptualizations such as power, persuasion, self-efficacy and control are parallel concepts of intentional influence. Such a parallel concept for unintentional influence does not exist in the social sciences (Huston, 2002). Consequently, the unintentional aspect of interpersonal influence seems to be somewhat neglected within the context of family research. Nonetheless, some recent studies have found that this unintentional aspect of influence is existential and essential for children's personal development and for their relationship with their parents (De Mol & Buysse, 2008a, 2008b). Taking into account the existence of unintentional influence, where people affect one another without goal-directed intentions, we have to be aware of the discordance between intention and consequences in human interactions. Regardless of our intentions, we depend on the interpretations of others as regards our effects. As a result the influence that a person feels he or she exerts on his or her partner seems especially hard to pinpoint; this is a well-known phenomenon within clinical practice. As the estimation of one's influence on a partner requires an interpretation of the effect one has on the partner's inner feelings based on his or her behavior, this estimation is always prone to flaws. Bearing this in mind, the focus for interpersonal influence shifts from the intention of the influencer to the consequences for the person who is being influenced. This disengagement from the focus on intention can be understood as ensuing logically from Watzlawick's first axiom of interpersonal communication: "one cannot not communicate" (Watzlawick, Beavin, & Jackson, 1967, p. 44), meaning that one always has an effect on another person, irrespective of one's intention (Baxter & Montgomery, 1996). In this way, interpersonal influence, and especially the sense of interpersonal influence, can be better understood as a sense of consequences. This sense of consequences or interpersonal influ-

ence, irrespective of the dimensions of (un)intentionality, has since long been an important concept within family therapy and sociology (Giddens, 1984; Seikkula, Arnkil, & Eriksson, 2003). However, the concept seems to be relatively understudied within the context of families. Very few studies focus on interpersonal influence in this broad sense or its relationship with other important concepts in family studies, such as attachment. This could in part be explained by the inherent difficulty of finding words with which to talk about influence (De Mol & Buyse, 2008a) and consequently the lack of proper instruments. Previous research (De Mol & Buyse, 2008a, 2008b) used qualitative methods to examine interpersonal influence in families. One of the main findings was that interpersonal influence is mainly implicit in nature. People recognized the importance and centrality of interpersonal influence but had difficulty talking about interpersonal influence in concrete terms. Therefore, a qualitative instrument for measuring interpersonal influence using concrete examples is needed, which is grounded in extensive investigation, is reasonably efficient and has undergone psychometric evaluation (Hoffman, Marquis, Poston, Summers, & Turnbull, 2006). In order to meet this need for a specific instrument for measuring interpersonal influence, the decision was made to create and psychometrically evaluate the Influence in Families Questionnaire (IFQ). The overall goal of this study was to create an instrument that measures interpersonal influence that is psychometrically sound for use in research, but that is also practical to use in an assessment setting.

In the remainder of this article, we: (a) outline the construction of the IFQ and its subscales; and (b) describe a study which offers support for the psychometric properties of the IFQ.

Part 1: Explorative Study

Method

Participants

The participants of the explorative sample were recruited amongst psychology and educational sciences students. The sample consisted of 348 participants (37 men and 311 women) with a mean age of 20.9 years old ($SD = 2.1$).

Procedure

The participants in the explorative sample were recruited through a collective test moment which was embedded in their lessons. During the break, a research assistant distributed copies of the IFQ to the students and asked them to complete the questionnaire.

Scale Formation

The questionnaire design and development was based on a logical, systematic and structured approach (Rattray & Jones, 2005). First, we looked for concrete examples of influence. Due to the aforementioned implicit nature of interpersonal influence (De Mol & Buysse, 2008a, 2008b), there is very little relevant language available and only a few clear and recognizable examples of influence can be found in the literature. An extensive literature review revealed, however, that studies in the domain of families with a child with a disability are a good starting point, as these families are often questioned about the interpersonal consequences of having a child with a disability. An Internet search using the keywords 'disability', 'families' and 'impact or effect' mainly revealed examples of the potential negative interpersonal influence of the disability within those families (e.g., Baker, Blacher, & Olsson, 2005; Blacher & McIntyre, 2006; Donenberg & Baker, 1993; Hunfeld et al., 2001; Kazak & Marvin, 1984; Maes, Broekman, Dosen, & Nauts, 2003; Rodrigue, Morgan, & Geffken, 1990; Seligman & Darling, 2007). In order to gain a more balanced and extensive list of possible forms of influence, we performed an additional search focusing on positive interpersonal influence in families. This led us mainly to interviews and case studies (e.g., Benson & Gross, 1989; Blacher & Hatton, 2001; Hastings & Taunt, 2002; Heiman, 2002; Stainton & Besser, 1998). The results of the studies in the domain of families with a child with a disability were analyzed using a thematic analysis procedure (Braun & Clarke, 2006). The six phases (familiarizing yourself with your data; generating initial codes; searching for themes; reviewing themes; defining and naming themes; producing the report) described by Braun and Clarke (2006) guided us through the analysis of the literature and resulted in the categorization of possible forms of interpersonal influence into four themes: effect on feelings; effect on self-worth; effect on the person and effect on life in general. This thematic categorization was made by the first author and triangulated by the co-authors.

Item generation for the pilot version of the IFQ was then based upon the 4 category x 2 valence structure, resulting in 40 items (five items per cell) that could be answered on a five-point Likert-type self-report scale ranging from *strongly disagree* (1) to *strongly agree* (5). As clinical practice indicates that it is really hard for people to accurately sense the influence they have on others, the choice was made to generate only items which describe how a family member feels he or she is being influenced by another family member. The participants completed separate questionnaires for each of three family relationships (i.e., participant-mother, participant-father and participant-sibling). The IFQ thus follows a 4 (categories: effect on feelings; effect on self-worth; effect on the person and effect on life in general) x 2 (valence: positive versus

negative) X 3 (relationship: participant-mother; participant-father and participant-sibling) structure.

Analysis

For each of the relationships, an exploratory principal component analysis was performed on the collected data in order to assess the underlying factor structure and to create subscales. The parallel analysis (PA) criterion (Horn, 1965) was used to determine the number of factors to be extracted. PA criteria are viewed as the most accurate for recovering the correct number of factors, much more so than the commonly used criteria of eigenvalues-greater-than-1.00 or Catell's (Cattell, 1966) scree test (Hayton, Allen, & Scarpello, 2004; Lance, Butts, & Michels, 2006). Using a varimax rotation, the principal axes were orthogonally rotated to create subscales with as little shared variance as possible.

Results

Exploratory Principal Component Analyses

Participants with missing data for a specific relationship on an IFQ subscale (both item missings or missings due to the absence of the target family member) were excluded from the analysis on that relationship. This left 325 responses for the participant-mother relationship, 310 for the participant-father relationship and 286 for the participant-sibling relationship. Various indicators of factorability proved to be good (Kaiser-Meyer-Olkin (KMO) = .96-.97; Bartlett's test was significant at the .01 alpha level). Both the PA criterion and the psychological interpretability suggested a two-factor solution across the different relationships, while the residuals indicate that the presented solution is a good one. Between 43.71% and 48.78% of the variance is accounted for by the first factor, which collects items which identify feelings of being positively influenced by a family member. The second factor (8.35%-9.81% variance explained) assembles all of the items which identify feelings of being negatively influenced by a family member. Therefore, these two factors appear to represent the valence component of interpersonal influence and were named "*Positive influence*" and "*Negative influence*".

Item Selection

Considerations relating to internal consistency, factor loadings and conceptual redundancy guided the item selection process, with the aim of finding the smallest possible number of subscale items in order to increase user-friendliness while retaining sufficient items to maintain a high level of reliability and

cover the entire concept. The final version of the IFQ included eight items on the positive influence subscale and eight negative influence items. The 16-item IFQ follows the same 2 (valence: positive versus negative) x 4 (categories: effect on feelings; effect on self-worth; effect on the person and effect on life in general) structure as the pilot version, which was administered with regard to three relationships (participant-mother; participant-father and participant-sibling). Table 1 presents the items and their average factor loadings for the final principal component analysis based on the independent results from the participants' ratings of these three relationships.

Table 1
Influence in Families Questionnaire Scale Items and Factor Loadings

Factor and questionnaire item	Average factor loading	
	I	II
Factor I: Positive influence		
2. _____ makes me happy. ^F	.78	-.34
3. _____ makes me feel better about myself. ^S	.74	-.30
4. _____ gives meaning to my life. ^L	.79	-.17
7. _____ makes me grow as a person. ^P	.82	-.14
10. I value my life more because of _____. ^L	.79	-.24
12. _____ makes me laugh. ^F	.68	-.28
13. _____ makes me feel happy with myself. ^S	.78	-.32
14. Because of _____ I feel a worthwhile person. ^P	.83	-.28
Factor II: Negative influence		
1. _____ makes my life more difficult. ^L	-.31	.76
5. _____ makes me insecure. ^S	-.30	.63
6. _____ gives me stress. ^P	-.34	.72
8. _____ makes me cry. ^F	-.21	.76
9. _____ makes me feel frustrated. ^S	-.36	.76
11. _____ makes me mad. ^F	-.34	.77
15. Because of _____ I feel like a worthless person. ^P	-.40	.53
16. _____ claims a lot of my time and energy. ^L	.07	.63

Note. Presented factor loadings are the average of three factor loadings based on the participant's reports for the three family relationships.

F = influence on feelings; S = influence on self-worth; P = Influence on person; L = influence on life.

An average factor loading was computed for each of the items on the basis of separate analyses of the participant-mother, participant-father and participant-sibling relationships. The averaged loadings were adequate, ranging from .68 to .83 for the first component and from .53 to .77 for the second component. Some items showed cross-loadings on the other component.

Part 2: Validation Study

As a measurement is only as strong as its psychometric properties, the purpose of this second study is to evaluate the IFQ and to examine the underlying structure, reliability and validity of the instrument. Based on the analyses in the explorative sample, we expected the IFQ to reveal a two-factor structure.

Both convergent and discriminant validity were checked in order to establish the construct validity of the IFQ. As the absence of a specific instrument for interpersonal influence formed the basis of this study, we cannot explicitly test the construct validity of the IFQ by comparing it with other measures of interpersonal influence or simply by replicating known correlations. Therefore, other self-report indices which are intuitively related to interpersonal influence were administered in conjunction with the IFQ. As we conceptualized interpersonal influence as a relational phenomenon, we expected to find a significant correlation with other relational constructs. The Impact Message Inventory Circumplex (IMI-C) is such a construct; it assesses an individual's interpersonal style through the feelings and thoughts that he/she evokes about himself in the respondent (Hafkenscheid & Rouckhout, 2009). In view of this, it seems likely that the affiliation dimension subscales of the IMI-C will be related to the subscales of the IFQ. Concerning the convergent validity, we predicted positive relationships between the positive influence subscale of the IFQ and the friendliness subscale of the IMI-C, and between the negative influence subscale and the hostility subscale of the IMI-C. As regards the discriminant validity, on the other hand, we expected a low correlation between the positive influence score and the hostile impact messages and a similarly low correlation between the negative influence subscale and the friendly impact messages. Furthermore, we expected a positive but relatively low correlation between the IFQ and the acquiescence subscale of Cook's (1993) interpersonal sense of control measure (ISOC), as control is a subclass of interpersonal influence (Cook, 1993, 2001; Delsing, Oud, De Bruyn, & van Aken, 2003), while the IFQ intends to measure interpersonal influence, irrespective of the intentionality.

We assessed the concurrent validity of the IFQ in relation to the Family Climate Scale (GKS-II) and the Modified Inventory of Parent and Peer Attachment (IPPA). As the ability to influence one another has been found to be a crucial element in the formation and functioning of interpersonal relationships and family systems (Cook, 2001; De Mol & Buysse, 2008a; Street, 1994), we expected the IFQ to be able to differentiate between respondents with strong family and attachment relationships and those with poor family and attachment relationships.

Method

Participants

The total validation sample consisted of 581 adolescents and young adults. This sample can be broken down into two diverse groups of respondents. The first group, henceforth referred to as the university students, consisted of 295 college students aged between 18 and 25 ($M = 20.7$; $SD = 2.5$). The sample was made up of 291 girls and 34 boys.

In order to improve the variance of the variables in question and to broaden the range of applications of the IFQ, the sample was supplemented with a second group of 286 adolescents and young adults. As the IFQ was designed in the context of a larger research project, which aimed to study interpersonal influence in families with a child with a disability, this second group was recruited from special education schools.^[1] This group, henceforth referred to as the special education students, contained 195 boys and 91 girls ranging in age from 11 to 24 ($M = 15.1$; $SD = 1.8$). The adolescents and young adults within this subsample had a physical disability, behavioral disorder or mild intellectual disability.

Procedure

UNIVERSITY STUDENTS

The participants in the university group were solicited using two methods. A first part of the sample was recruited using an appeal to participate in this study placed on the electronic learning environment of the university. Second, a snowball sampling method was used to obtain more participants. For this purpose, a research assistant recruited university students from her personal social network using an e-mail that advertised the study and asked them to fill in a set of questionnaires via an online survey. In a second step, these participants were asked to forward this advertisement e-mail to other university students in their social network. The respondents completed all the questionnaires through an Internet-based query.

SPECIAL EDUCATION STUDENTS

The participants in the special education group were recruited through special education schools. The school directors received a letter explaining the study and asking for their help in the recruitment process. When the schools' direc-

1. The choice for adolescents and young adults from special education schools is consistent with the literature findings that influence in families is often studied in families with a child with a disability (see above).

tors consented, letters providing information and consent forms were distributed to the parents. Later, all of the students who had a signed consent form completed the questionnaires during collective test sessions in their classrooms. The special education students were given a shortened questionnaire bundle, which did not contain the modified Inventory of Parent and Peer Attachment (IPPA) or the Family Climate Scale (GKS-II), in order to keep the workload as low as possible.

Measures

INFLUENCE IN FAMILIES QUESTIONNAIRE (IFQ)

The IFQ, as developed in the first part of this study (see above), assesses the amount of positive and negative influence between family members.

INTERPERSONAL SENSE OF CONTROL SCALE (ISOC)

This scale was developed by Cook (1993) to assess a person's sense of interpersonal control. The ISOC contains three subscales: effectance, acquiescence and fate. The acquiescence subscale, which measures the extent to which people believe that they are controlled by each of their family members (e.g., "It is harder for me to say "No" to ____ than to other members of my family"; "What happens in my life is controlled more by ____ than other family members"), was used in this study to ascertain the convergent validity of the IFQ. The Cronbach's alpha values in this study ranged from .71 to .76, depending on the reported relationship.

IMPACT MESSAGE INVENTORY-CIRCUMPLEX (IMI-C)

The IMI-C (Kiesler, 1983) focuses on interpersonal transactions in a dyad. The 28-item version assesses a person's interpersonal style of interacting on four subscales: dominance; hostility; submissiveness and friendliness (Schmidt, Wagner, & Kiesler, 1999). Hostile (e.g., "When I am with this person, he/she makes me feel distant from him/her") and friendly (e.g., "When I am with this person, he/she makes me feel appreciated by him/her") impact messages were used to examine the construct validity of the two subscales of the IFQ. The Cronbach's alpha's in this study ranged from .77-.80 for friendly and .79-.81 for hostile impact messages.

MODIFIED INVENTORY OF PARENT AND PEER ATTACHMENT (IPPA)

The modified IPPA (Buist, Dekovic, Meeus, & van Aken, 2004), based on the original IPPA (Armsden & Greenberg, 1987), determines the quality of affectional bonds between family members (e.g., "My ____ respects my feelings";

“My ____ accepts me as I am”; “Talking over my problems with my ____ makes me feel ashamed or foolish”). The 10-item scale contains three subscales: a communication scale; a trust scale and an alienation scale. The overall attachment score, computed by adding together the means of the three subscales, was used to assess the criterion validity of the IFQ subscales. The Cronbach’s alpha values in this study ranged from .86 to .90.

FAMILY CLIMATE SCALE (GKS-II)

The GKS-II is based on the Family Environment Scale (FES) (Jansma & de Coole, 1996; Moos & Moos, 1986). It appraises how the family climate is experienced in terms of cohesion, expressiveness, conflict, organization, control, norms and social orientation. An index of family relationships is formed by the subscales of cohesion (e.g., “In our family, we support each other no matter what”), conflict (e.g., “We fight a lot in our family”) and expressiveness (e.g., “Family members often keep their feelings to themselves”). These subscales were used to assess the criterion validity of the IFQ subscales. The internal consistency of the subscales proved to be satisfactory in the present sample, with Cronbach’s alpha coefficients of .75 for cohesion, .79 for conflict and .73 for expressiveness.

Results

Prior to further analyses, z-scores and histograms were used to detect outliers. No outliers were found for any of the variables. Therefore, all of the respondents were included in the analyses. Respondents were recruited from two ‘extreme’ populations in order to increase the variance and the representativeness of the results. Within these groups, we were confronted with a sizable gender imbalance. Preliminary analyses were conducted in order to determine whether gender or population differences would influence our results. In order to assess the impact of gender and population differences, we used a multivariate analysis of variance (MANOVA) with gender and population as the fixed factors. The analysis revealed no significant main effect for gender (Wilks’ lambda = 0.98, $F(6, 485) = 1.34$, $p = .24$) nor interaction effect (Wilks’ lambda = 0.99, $F(6, 485) = 1.19$, $p = .98$), but revealed a significant main effect for population (Wilks’ lambda = 0.97, $F(6, 485) = 2.85$, $p = .01$). However, further inquiry into the results revealed that the effect of population was significant for only one of the subscales in question, namely the negative influence of a sibling ($F = 10.1$; $p = .002$), with special education students scoring slightly higher than the university students.

Each subsequent analysis which was carried out in this study on the total population was also performed for the two subsamples separately. This did

not generate significantly different results. Due to the similar results and the small gender and population differences, we chose to only present the results for the total sample, so as to increase the readability of the manuscript.

Confirming Factor Structure of the IFQ

Given the similarity between the covariance matrices of the two subsamples (Participant-Mother: $\chi^2 = 291.09, p < .01, \chi^2/df = 2.43$, Comparative Fit Index (CFI) = 0.97, Root Mean Square Error of Approximation (RMSEA) = 0.07; Participant-Father: $\chi^2 = 302.73, p < .01, \chi^2/df = 2.52$, CFI = 0.97, RMSEA = 0.07; Participant-Sibling: $\chi^2 = 266.06, p < .01, \chi^2/df = 2.22$, CFI = 0.96, RMSEA = 0.07) and the small differences in the mean scores, confirmatory factor analysis was conducted on the entire sample. In order to confirm the two-factor structure of the IFQ which was found in the explorative sample, we used EQS (Bentler, 1983). The overall goodness-of fit was assessed based on several fit indices (Hu & Bentler, 1999). As presented in Table 2, the chi-square was significant for all of the relationships, indicating an imperfect fit. However, with a large sample size, as is the case in the present study, the χ^2 will almost always be significant, even when the model has a good fit (Gerbing & Anderson, 1992). Therefore, we chose to report other fit indices which were less dependent on sample size (Marsh & Balla, 1994). The χ^2/df ratios were reasonable and ranged from 3.09 to 3.76, depending on the reported relationship (Garson, 2011; Kline, 1998). Both the CFI (.93-.94) and the standardized root-mean-square residual (SRMR)(.05-.06) indicated a relatively good fit (Garson, 2011; Hu & Bentler, 1999; Kline, 1998). The RMSEA (.07) indicated a reasonable fit (Browne & Cudeck, 1993; Garson, 2011; Schumacker & Lomax, 2004).

Table 2
Summary of Fit Statistics of the Two-factor Model

	χ^2	χ^2/df	CFI	RMSEA	SRMR
Participant-Mother	357.40**	3.47	.94	.07	.05
Participant-Father	386.77**	3.76	.93	.07	.05
Participant-Sibling	318.64**	3.09	.93	.07	.06

** χ^2 significant at $p < .01$.

Reliability

Cronbach’s alpha coefficients were calculated for the scores of each of the two IFQ subscales and the IFQ total score. As presented in Table 3, the results indicate that both subscales and the total score have very satisfactory internal consistency over the different relationships.

Table 3
Descriptive Statistics and Internal Reliability Estimates for the IFQ

	n^a	M	SD	α
<i>Participant-Mother</i>				
IFQ-total	551	3.14	0.41	.90
IFQ-positive	563	4.05	0.77	.90
IFQ-negative	558	2.23	0.87	.86
<i>Participant-Father</i>				
IFQ-total	518	3.08	0.40	.92
IFQ-positive	533	3.87	0.89	.92
IFQ-negative	529	2.29	0.89	.86
<i>Participant-Sibling</i>				
IFQ-total	500	3.06	0.44	.89
IFQ-positive	514	3.85	0.81	.90
IFQ-negative	511	2.28	0.82	.83

a. As in the exploratory sample participants with item-missings or relationship-missings were excluded from the analysis on that relationship. Leaving us with varying sample sizes for the specific relationships.

Construct Validity

The correlations between the IFQ total and subscale scores and the other self-report measures are shown in Table 4. The correlations reported here are averages based on identical analyses for the three relationships. As expected, strong positive correlations were found between the IFQ positive influence subscale and the IMI-C friendly impact messages ($r = .68, p < .01$) and between the IFQ negative influence subscale and the IMI-C hostile impact messages ($r = .53, p < .01$). The correlation between the IFQ total score and the ISOC acquiescence subscale was, as predicted, low ($r = .30, p < .01$). Finally, moderately low correlations were found between the IFQ positive influence score and the IMI-C hostile impact messages ($r = -.26, p < .01$) and between the IFQ negative influence score and the IMI-C friendly impact mes-

Table 4
Construct Validity Correlations

External measures	Total	PI	NI
ISOC			
Acquiescence	.30**		
IMI-C			
Friendly		.68**	-.38**
Hostile		-.26**	.53**

Note. Presented correlations are average Pearson correlations based on the participant's reports for the three family relationships.

** All correlations significant at $p < .01$.

Criterion Validity

It was hypothesized that the scores on the IFQ would be able to differentiate between persons with better family and attachment relationships and those with worse family and attachment relationships. Better family relationships were conceptualized as portraying higher levels of cohesion and expression and lower levels of conflict. Table 5 contains the correlations of the IFQ subscales with the measures of family relationships and attachment.

Table 5
Criterion Validity Correlations

	IFQ subscales	
	PI	NI
Family relationships		
Cohesion	.49**	-.45**
Expression	.51**	-.37**
Conflict	-.34**	.45**
Attachment	.76**	-.68**

Note. Presented correlations are average Pearson correlations based on the participant's reports for the three family relationships.
**All correlations significant at $p < .01$.

As expected, respondents who reported good family relationships and good attachment relationships reported significantly higher levels of positive influence and significantly lower levels of negative influence than those with poor family and attachment relationships.

General Discussion

The present article described the development and validation of the IFQ, an instrument for measuring interpersonal influence. In sum, our literature review revealed that family members experience influence from one another in both positive and negative ways and in different domains of their life. The IFQ, our self-constructed 16-item scale, reflects the variation in the valence (positive versus negative influence) and domain of influence (feelings, self-worth, person and life) in a 2 x 4 design (with two items per cell). As such, the IFQ appears to measure interpersonal influence in a reliable and valid way. That is, our results supported the psychometric adequacy of the IFQ, as: (1) both the exploratory principal component analyses (PCA) and confirmatory factor analysis (CFA) showed that the IFQ captured positive as well as negative influence. The cross loadings in the PCA and the correlations between the factors in the CFA suggest that positive and negative influence are not independent concepts; (2) the internal consistency was high for all of the explored relationships, for the overall scale and for the two subscales; (3)

the scale was associated with relevant criteria such as impact messages and family and attachment relationships; and (4) the influence scores differed adequately from interpersonal sense of control.

In conclusion, in the IFQ, we seem to have developed a short and easily applicable scale to assess interpersonal influence. The rather low correlation found between the IFQ and interpersonal sense of control suggests that the IFQ measures something more than intentional control alone. Watzlawick's first axiom of interpersonal communication, which states that "one cannot not communicate" (Watzlawick et al., 1967, p. 44), illustrates that interpersonal influence is an integral part of the family context. However, interpersonal influence has mostly been conceptualized from an intentional point of view, as is the case with control (Cook, 1993, 2001; Delsing et al., 2003), persuasion (Hsiung & Bagozzi, 2003), self-efficacy (Bandura, 1997) and power (Huston, 2002). However, the IFQ measures interpersonal influence, focusing on the effects on the relationship partner and not on the intentions of the influencer.

Furthermore, the IFQ takes into account the fact that interpersonal influence should be measured at the relationship level (Cook, 2005; Hsiung & Bagozzi, 2003). By using directed-relationship items such as "My mother makes me happy," the IFQ is a type of relationship-specific scale that allows for more fine-grained analyses (see also Cook, 2005). Due to the option of assessing each family relationship individually, the IFQ makes it possible to deconstruct influence into multiple parts, e.g., factors on a personal level and elements that are relationship-based. Such an assessment may further the clinical understanding of the family system and give possible guidelines for clinical interventions (De Mol et al., 2010). Interpersonal influence is said to be an essential part of close relationships, affecting both the psychological development of the relationship partners (Huston, 2002) and the formation and functioning of the relationship itself (Cook, 2001; Street, 1994). Therefore, a measure which assesses interpersonal influence on a directed-relationship level, such as the IFQ, may be promising.

In sum, this study partly answers some of the intriguing questions regarding influence. First, we know from our results that people experience influence from their family members and that they are aware of and able to report on this interpersonal influence. Second, our respondents experience both positive and negative influence and are able to distinguish between both forms of interpersonal influence. Third, interpersonal influence seems to be present in all its complexity within the whole population. With both male and female respondents experiencing the same amount of positive and negative influence from their family members. And university students experiencing influence no differently than special education students with a disability. Both types of respondents experience the same amount of positive and negative influence

from their family members. With the exception of negative influence experienced from a sibling, with special education students scoring slightly higher than the university students. Moreover, the experience of positive and negative interpersonal influence is related to important indicators of family relationships such as cohesion, expression, conflict and attachment. With persons who indicate feeling more positively influenced reporting better family and attachment relationships and respondents who report more negative influence indicating worse family and attachment relationships. However, more specific research on the topic of interpersonal influence in family systems is needed and would no doubt further benefit the field of family studies and therapy. We hope that the development of the IFQ as a valid and reliable instrument for measuring interpersonal influence may be a first step in this interesting endeavor.

Our findings, however, should be interpreted in the context of certain limitations. First, the respondents were selected from the community via convenience and snowball sampling, which are sub-optimal sampling methods. We did, however, include a sample of special needs adolescents and young adults in order to increase the variability of our variables under study. The replication of these results with clinical samples is nevertheless advisable, especially when considering the IFQ for clinical use as an assessment tool. Second, the need to study the psychometric properties of the IFQ from a parent's perspective emerges when considering the use of the IFQ for more fine-grained analyses. Third, our three samples showed a sizable gender imbalance, especially in the explorative sample, in which the difference was not counterbalanced by a second sample. Although we did not find any indications of gender differences, this matter should be taken into account in further research. Finally, the correlations we found between the IFQ subscales and some of the scales used for validation were fairly large. For attachment, we found an explained variance of over 50%, suggesting a substantial overlap between the two concepts that should be examined further. However, theoretically, this strong association is not surprising, as interpersonal influence can be seen as the process that, over time, shapes the internal working models which constitute the affective-cognitive dimension of attachment (Armsden & Greenberg, 1987; Colin, 1996; Hazan & Shaver, 1994). Furthermore, this high correlation might reflect an underlying connection in the other direction, as it is intuitively logical that individuals in secure relationships would experience more positive influence from one another. A strong association was also found between positive influence and friendly impact messages and, to a lesser extent, between negative influence and hostile impact messages. The impact messages reflect a person's interpersonal style of interacting (Hafkenscheid, 2003; Kiesler & Auerbach, 2004). Conceptually, it is not illogical that a person with a friendly interpersonal style would evoke a great deal of positive

influence while a person with a hostile interpersonal style would elicit more negative influence from a relationship partner. However, previous research states that family relation variables, such as interpersonal influence, are not determined solely by the characteristics of the person who is influencing but also by the characteristics of the person who is being influenced, of the specific relationship and of the family (Buist et al., 2004; Cook, 2001; Delsing et al., 2003; Eichelsheim et al., 2009). Therefore, impact messages, the characteristics of the person who influences, would determine only part of the interpersonal influence, as is reflected in the degree of explained variance (28%-46%). A final explanation for both strong associations could be that although these concepts are theoretically clearly distinguishable, the respondents may not have been able to differentiate between them because they may appear to be quite similar (Jacob & Windle, 1999).

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