

Psychometric Properties of A Turkish Version of the Inventory of Functional Status-Fathers

Babaların Fonksiyonel Durum Envanterinin Türkiye Versiyonunun Psikometrik Uygunluğu

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ABSTRACT Objective: The fathers' functional status is defined as a concept that includes continuation or increase in household activities, social and community activities, infant care, personal care, occupational and educational activities and assuming responsibility for infant's care. The aim of the study was to investigate the psychometric properties of a Turkish language version of the Inventory of Functional Status-Fathers (IFS-F), to measure the functional status of expectant fathers in the last trimester of their wives' pregnancies and in the postpartum period. **Material and Methods:** The research sample was composed of 155 expectant fathers whose wives were in the 28th week or more of a risk-free pregnancy and 93 fathers whose wives delivered a single infant in the 38th-42nd week of pregnancy and had a healthy child in the 6th-8th week postpartum. **Results:** Cronbach's alpha internal consistency reliability coefficients ranged from 0.80 for Household Activities, 0.65 for Social and Community Activities, 0.80 for Infant Care Responsibilities, 0.88 for Child Care Activities, 0.74 for Personal Care Activities, 0.61 for Occupational Activities, 0.78 for Educational Activities, and 0.82 for total IFS-F. Internal construct reliability using average correlations for the subscale item to subscale total scores ranged from 0.63 to 0.95. Subscale to total IFS-F score correlations ranged from 0.34 to 0.49. Test-retest reliability coefficients ranged from 0.76 to 0.99 and the total IFS-F score was 0.98. Construct validity was accomplished by examination of subscale correlations, which ranged from -0.04 to 0.60. **Conclusion:** Based on the results, the Turkish version of the IFS-F has been determined to be valid and reliable. All health professionals may use the IFS-F to assess the functional status of men.

Key Words: Social behavior; fathers; validity and reliability

ÖZET Amaç: Babaların fonksiyonel durumu; erkeklerin eşlerinin gebelik ve doğum sonrası dönemlerinde ev işlerini, sosyal ve toplumsal, çocuk bakımı, bireysel bakım, mesleki ve eğitim faaliyetlerini devam ettirme ya da artırma ve bebeğin bakım sorumluluğunu üstlenmelerini içine alan bir kavram olarak tanımlanmaktadır. Bu araştırma, eşleri gebeliğin son üç aylık döneminde veya doğum sonraki dönemde olan babaların fonksiyonel durumunu ölçmek için geliştirilmiş olan "Babaların Fonksiyonel Durum Envanteri"nin, Türk toplumuna uyarlanması ve psikometrik uygunluğunu test etmek amacıyla yapılmıştır. **Gereç ve Yöntemler:** Araştırmanın örneklemini, eşlerinin gebelikleri risksiz ve 28 hafta ve üzeri olan 155 baba adayları ile eşleri 38-42 haftalar arasında tek doğum yapmış, sağlıklı bir çocuğa sahip, doğum sonrası 6-8. haftalarda olan 93 baba oluşturmuştur. **Bulgular:** Cronbach's Alpha iç tutarlılık güvenilirliği ev içi faaliyetlerde 0.80, sosyal ve toplumsal faaliyetlerde 0.65, bebek bakım sorumluluklarında 0.80, çocuk bakım faaliyetlerinde 0.88, öz bakım faaliyetlerinde 0.74, mesleki faaliyetlerde 0.61, eğitim faaliyetlerinde 0.78, toplam ölçek katsayısı ise 0.82 olarak bulunmuştur. Yapı geçerliliğinde madde- alt ölçek arasındaki ortalama korelasyon 0.63-0.95 arasında iken, alt ölçek- toplam ölçek puanları arasındaki korelasyon 0.34-0.49 olarak bulunmuştur. Test-tekrar test güvenilirliği toplam ölçek puanı 0.98, alt ölçekler için 0.76 ile 0.99 arasında belirlenmiştir. Ölçekler arası korelasyon oranlarının ise -0.04 ile 0.60 arasında değiştiği saptanmıştır. **Sonuç:** Yapılan istatistiksel değerlendirmeler sonucunda babaların fonksiyonel durum envanteri Türkiye'de geçerli ve güvenilir bulunmuştur. Tüm sağlık profesyonelleri tarafından baba ve baba adaylarının fonksiyonel durumunu tanımlamakta kullanılabilir.

Anahtar Kelimeler: Sosyal davranışlar; babalar; geçerlilik ve güvenilirlik

The transition to fatherhood is a major social change for both fathers and mothers.¹ Although there have been many studies that have supported the family centered care philosophy and the participation of the man during the period of pregnancy, those who provide prenatal care continue to focus on the woman and fetus. One reason why direct care is not offered to the men could be the lack of tools for evaluation that would allow the special needs of fathers to be defined during the pregnancy and postpartum periods. The Inventory of Functional Status-Fathers (IFS-F) was developed by Tulman, Fawcett and Weiss to measure the functional status of fathers in the last trimester of pregnancy and in the postpartum period. It defines the fathers' functional status during the last trimester of their wives' pregnancy and in the postpartum period as a concept that includes continuation or increase in household activities, social and community activities, infant care, personal care, occupational and educational activities and assuming responsibility for infant's care.²

The Inventory of Functional Status - Fathers (IFS-F) is in contrast to The Inventory of Functional Status - Antepartum Period (IFSAP), developed by Tulman et al. to measure the mother's functional status in pregnancy, and The Inventory of Functional Status after Childbirth (IFSAC), developed by Fawcett et al. to determine the mother's postpartum functional status.² These inventories were based on Roy's adaptation model's role function model.³ Each of these inventories offer researchers, physicians and nurses/midwives the ability to determine the functional status of a couple expecting a baby throughout the pregnancy and during the postpartum period and to provide a family centered care.

Men's acquisition of the fatherhood role is different from the mothering instinct that women have from birth. It has been determined that the role of fatherhood begins the moment pregnancy is determined and develops within the months of birth and following birth. It has been determined that the participation in infant care and child rearing activities by fathers is affected by many factors, such as family structure, marital relationship, sup-

port by others, mother's work status and the gender of the child. In particular in recent years the return of mothers to work, diversification of societal and family roles of women has increased the participation of fathers in housework and infant care, whether they like it or not.⁴⁻⁷ However society would have difficulty grasping the concept of participatory parenthood by fathers as long as it sees fathers as helpers and women as caregivers.

It is a known fact that health care workers in mother and child health services generally focus on care of the mother and infant.⁸⁻¹⁰ Women will be able to facilitate the fathers' adaptation to their new and developing roles when nurses, who plan, implement, and evaluate prenatal, natal and postnatal care, ensure that the women come to every control visit with their husbands.¹¹

Currently, there is no such questionnaire available in the field of nursing in Turkey. Except from American and Australian studies.^{2,12} There is no research the validity and reliability of the IFS-F in the different culture. Determining the validity and reliability of IFS-F in Turkey will have a significant part in eliminating this family centered care knowledge deficit. For this reason in this study the aim was to study the validity and reliability of the Turkish version of the IFS-F.

MATERIAL AND METHODS

SAMPLE

The research population was the spouses of the pregnant and postpartum women registered at 9 public health clinics of Aydın Province Health Ministry.

The research population comprised 3750 men whose pregnant (expectant fathers) or postnatal wives (new fathers) were registered at the nine primary health care clinics in the province centre. The sample number was determined to be at least three times the number of items in the inventory.^{2,13,14} The research sample comprised 275 husbands of women who were registered at these clinics, and who were in at least their 28th week of a normal (not at-risk) pregnancy with a single foetus, or who were in the early postnatal period (6-8 weeks postna-

tal) following birth of a single baby between the 38th and 42nd week without complications. The men whose wives met the research inclusion criteria were invited to the primary health care clinic where their wives were registered between 7 and 18th February, 2005. Due to fathers who did not wish to participate in the study or who could not participate because of busy work schedules, the research was completed with 155 fathers-to-be and 93 fathers; in total, 90% of the target sample was reached.

ETHICAL PROCEDURE

Permission to conduct the research was received in writing from the Aydın Province Ministry of Health and Ege University School of Nursing's Scientific Ethics Committee. Fathers/fathers-to-be who volunteered to participate in the study and gave their verbal consent were included in the sample.

DATA COLLECTION METHOD

Data were collected for this research using a questionnaire that determined the mothers' sociodemographic characteristics and other variables and IFS-F.

INSTRUMENTS

IFS-F, was designed to assess the social aspects of functional status in new fathers. This 51 item inventory takes approximately 20 minutes to complete and contains seven subscales which measure functional ability in the following categories: household, social and community, child care, infant care, personal care, occupational and educational activities. Household activities (12 items), social and community activities (5 items), child care activities (11 items; for men with children other than the neonate), infant care activities (6 items; for postpartum only), personal care activities (7 items), occupational activities (5 items) and educational activities (5 items; for men who are attending school).^{2,12}

Household, Social and Community and Child Care subscales ask the man to indicate the extent to which he has continued activities carried out prior to his partner's pregnancy along a 4-point scale of "not at all", "partially", "same as before", and "more than before". The Infant Care subscales asks the man to indicate the extent to which he is per-

forming infant care responsibilities and is rated on a 4-point scale of "not at all", "just beginning", "partially", and "fully". The personal care, occupational and educational subscales ask the man to indicate the extent to which each activity has been performed during the past week or two, using a 4-point scale of "never", "sometimes", "same as before", and "more than before". A "not applicable" code, which is excluded from score calculations, is used for items not engaged in by the man. In as much as each man has an individual repertoire of role activities, not all items of the IFS-F may be applicable to his situation. Therefore a mean score is calculated for each subscale and the total IFS-F for each man. For example, a man who is not attending would not have a score for the educational activities subscale. Similarly, a man who did not participate in community service organizations would not respond to that particular item on the social and community activities subscale items that are relevant for his situation.² Selected items from the IFS-F are displayed in appendix A.

This inventory was developed from the Roy adaptation model's role function model. The Roy adaptation model is about the implementation of roles determined to be social.^{3,15} The IFS-F is the only tool designed to measure functional state in new fathers and that allows for the evaluation of first (primary roles), second (secondary roles) and third (tertiary roles) degree roles in the postpartum period, in particular. Roles that are measured with this tool are based on age, developmental stage, and sex and primarily stated from a cultural viewpoint.³

Items are rated on a 4 point likert-type scale, and mean scores are calculated with 1 being the lowest and 4 being the highest score possible. The higher the mean score, the greater is the functional status. The IFS-F does not measure feelings about roles, but only whether the respondent has begun or resumed the activities.^{2,12}

LANGUAGE VALIDITY

In the research first work was conducted on language validity. First the tool was translated from English to Turkish by three independent experts

APPENDIX A: Sample IFS-F items.				
SECTION 1: Household Activities Subscale				
Prior to my wife's pregnancy, my usual activities included:				
		I have continued this activity:		
	Not at all	Partially	Same as before	More than before
1- Cleaning the house	1	2	3	4
11- Heavy housework, maintenance work (seasonal cleaning, painting, etc.)	1	2	3	4
SECTION 2: Social and Community Activities Subscale				
Prior to my wife's pregnancy, my usual activities included:				
		I have continued this activity:		
	Not at all	Partially	Same as before	More than before
13- Participating in community services organizations (e.g. volunteer fire company, political activities)	1	2	3	4
15- Socializing with friends	1	2	3	4
SECTION 3: Infant Care Responsibilities Subscale				
Please circle the number that indicates to what extent you have assumed your desired part of the following aspects of the baby's care:				
	Not at all	Just beginning	Partially	Fully
18- Daytime feelings	1	2	3	4
20- Bathing the baby	1	2	3	4
SECTION 4: Child Care Activities Subscale				
Prior to my wife's pregnancy, my usual activities included:				
		I have continued this activity:		
	Not at all	Partially	Same as before	More than before
24- Feeding the child(ren)	1	2	3	4
29- Playing with the child(ren)	1	2	3	4
31- Helping with schoolwork/reading to the child(ren)	1	2	3	4
SECTION 5: Personal Care Activities Subscales				
Prior to my wife's pregnancy, my usual activities included				
		I have continued this activity:		
	Not at all	Partially	Same as before	More than before
35- Exercising	1	2	3	4
39- Grooming(e.g. care of hair, shaving)	1	2	3	4
SECTION 6: Occupational Activities Subscales				
Please respond to the following phrases based on how your life at work has been during the past week or two compared to before your wife became pregnant.				
	Never	Sometimes	Same as before	More than before
42- Accomplished usual amount of work at my job	1	2	3	4
43- Achieved work goals	1	2	3	4
SECTION 7: Educational Activities Subscales				
Please respond to the following phrases based on how your life at school has been during the past week or two compared to before your wife became pregnant.				
	Never	Sometimes	Same as before	More than before
48- Completing assignment on time	1	2	3	4
50- Participating in extracurricular activities	1	2	3	4

with a good level of English. Another individual (researcher) independent of these three then combined the three Turkish translations to create a Turkish text. Then to determine the appropriateness of the Turkish language and meaning of this new text and, at the same time, to evaluate the equivalency of the concepts (to be able to explain the same meaning with culturally appropriate, different words and sentences) the opinions of five experts were obtained.^{8,16,17} The opinion of the tool's author was obtained to better understand some of the items. Changes that were necessary based on their recommendations were made and the final Turkish text was prepared.²

After this phase the final Turkish version of the tool was translated back into English by three different individuals with good Turkish and English who had not seen the original English text. Then a fourth independent individual created a combined English text.^{14,16,18} Comparing the English statements in the combined English text that had been translated from Turkish with the tool's original statements, necessary changes were made.^{14,18}

After the tool was in its final form it was sent to the author of the tool and permission was obtained to use it.

DATA ANALYSIS

The analyses for this study were conducted using the Statistical Package for the Social Sciences version 11 software.

INTERNAL CONSISTENCY RELIABILITY

A “not applicable” code, which is excluded from score calculations, was used for activities not engaged in by a participant before diagnosis. Since not all IFS-F items are engaged in by all men, a mean is calculated for each subscale score and for the total score based on the number of relevant items. Cronbach's alpha method, a commonly used measurement tool in reliability analysis. Cronbach's alpha could not be used to calculate reliability because each men did not respond to every item. Therefore, reliability was calculated using Fisher's z transformation to obtain the average item to subscale score

correlations though the reliability coefficients of this test are lower than Cronbach's alpha. Internal consistency reliability was re-evaluated by connecting every subscale score with the total IFS-F score. The “not applicable” code was again excluded in the analysis.^{3,7,19}

Internal consistency reliability was determined by correlating each subscale item with its respective subscale item with its respective subscale total score. This analysis excluded the “not applicable” code. The mean correlation for every subcategory is calculated using Fisher's z-transformation. Internal consistency reliability was re-evaluated connecting every subscale score with the total IFS-F score. In the analysis the “not applicable” code was again excluded.^{2,13,16}

All of the items in the household activities subscale were answered by 242 individuals, all of the items in the social and community activities subscale were answered by 225 individuals, infant care responsibilities by 90 individuals, child care responsibilities by 118 individuals, personal care activities by 222 individuals, occupational activities by 187 individuals, and educational subscale by 10 individuals.

TEST-RETEST RELIABILITY

The test-retest reliability was calculated for a 20-individual subsample from the total (n= 248). In the test-retest data analysis Spearman Moments Product was used.^{13,19}

CONSTRUCT VALIDITY

The construct validity was re-evaluated with an examination of the subscale constructs of the IFS-F. This shows that the functional status of fathers' concept includes seven dimensions. The theoretical multidimensionality of the tool was retested experimentally by calculating correlation between the subscales.^{16,19}

FINDINGS

RELIABILITY

Sample

The sample for internal consistency reliability testing was made up of 155 expectant fathers and 93

new fathers (n= 248). The mean age ranged from 17 to 52 years (mean, 30.4 years; SD= 5.7). Approximately half (52.8%) of the fathers had eight or less years of formal education, and 47.2% had high school or higher education. In the examination of the fathers' occupational status it was determined that 45.1% had their own business, 21.4% were civil servants, 24.6% laborers, and 8.9% were unemployed. The mean length of marriage was 5.19 years (SD= 4.12).

INTERNAL CONSISTENCY RELIABILITY

Cronbach's alpha internal consistency reliability coefficients were 0.80 for Household Activities, 0.65 for Social and Community Activities, 0.80 for Infant Care Responsibilities, 0.88 for Child Care

Activities, 0.74 for Personal-Care Activities, 0.61 for Occupational Activities, 0.78 for Educational Activities, and 0.82 for total IFS-F.

Internal consistency reliability was determined by correlating each subscale item with its respective subscale item with its respective subscale total score. This analysis excluded the "not applicable" code. The results presented in Table 1 represent the final computations using Fisher's z transformation.¹³ As shown in Table 1, the average correlation ranged from 0.63 for the household activities subscale to 0.95 for the educational activities subscale.

Internal consistency reliability also was assessed by correlating each subscale with the total IFS-F score. The correlations ranged from 0.34 for the

TABLE 1: Internal consistency reliability coefficients for the inventory of functional status-fathers (IFS-F).

	Cronbach's alpha	Item- subscale*	Subscale-total	Test-retest
Household responsibilities	0.80	0.63	0.39	0.94
Social and community activities	0.65	0.76	0.34	0.83
Infant care responsibilities	0.80	0.90	0.36	0.76
Child care activities	0.88	0.74	0.39	0.97
Personal care activities	0.74	0.73	0.42	0.95
Occupational activities	0.61	0.77	0.40	0.99
Educational activities	0.78	0.95	0.49	0.99
Total IFS-FA	0.82			0.98

* Calculated using Fisher's z transformation.

TABLE 2: Subscale correlations for the inventory of functional status-fathers (IFS-F).

	Household Responsibilities	Social and community activities	Infant care responsibilities	Child care activities	Personal care activities	Educational activities
Social and community activities	r = 0.17 n = 223					
Infant care responsibilities	r = 0.41 n = 90	r = - 0.04 n = 87				
Child care activities	r = 0.16 n = 116	r = 0.10 n = 108	r = 0.51 n = 49			
Personal care activities	r = 0.24 n = 219	r = 0.38 n = 213	r = 0.07 n = 86	r = 0.19 n = 111		
Occupational activities	r = 0.19 n = 185	r = 0.13 n = 181	r = 0.06 n = 74	r = 0.32 n = 95	r = 0.33 n = 182	
Educational activities	r = 0.24 n = 10	r = 0.29 n = 10	r = -0.02 n = 7	r = 0.48 n = 7	r = 0.29 n = 10	r = 0.60 n = 10

social and community activities subscale to 0.49 for the educational activities subscale.

Test-retest reliability coefficients ranged from 0.76 to 0.99 and the total IFS-F score was 0.98.

Construct validity of the IFS-F was undertaken by examining the subscale structure. Table 2 displays the correlations, most of which were low with a range of -0.04 for infant care responsibilities with social and community activities to 0.48 for educational activities with child care activities. However, the correlation between child care activities and infant care activities ($r= 0.51$), educational activities and occupational activities ($r= 0.60$) was relatively high indicating a lack of independence between these subscales.

DISCUSSION

As a result of the statistical analysis of the tool's validity and reliability IFS-F was found to be valid and reliable in Turkey.

In the examination of the internal consistency reliability research results, according to the Cronbach's alpha coefficients, it was determined that the items showed that there was good correlation of the items with each other, that they were consistent with each other and that they were examining the same characteristic (Table 1). In a reliability study conducted with Australian women the Cronbach's alpha level were all greater than 0.70 with the exception of the personal care and social and community activity scales.¹² In Turkish society having a child is till an important event. Although there are cultural and social differences, the similarity between the study results in Turkey and Australia shows that this tool can be used for the same purpose in both societies.

The mean correlation between item and subscales was determined to be 0.63 for household activities and 0.95 for educational activities (Table 1). As the item total correlation number (r) increased the statement's level of influence increased.²⁰ In the evaluation of the tool it was observed to be effective. Examination of the item to subscale correlation coefficients revealed an acceptable level of reliability. In the study by Fawcett et al the correlation

scores for item-tool were determined to be between 0.54 and 0.75.²

The correlation between subscale-total IFS-F scores were found to be 0.34 for social and community activities and 0.49 for occupational activities (Table 1). In the study by Tulman et al. the tool-total IFS-F correlation coefficients were found to be 0.31 in the social and community activities subscale and 0.61 in the child care activities. In both studies the correlation coefficients were found to be low. Tulman et al. observed that the low correlation coefficients were in subscales with a low number of items and recommended that increasing the number of items would improve reliability.² In the examination of our findings however the number of items in the subscales were not observed to have an effect on the correlation means.

The test-retest reliability for the total IFS-F score was determined to be 0.98 (Table 1). This result shows that the questions were correctly perceived by the women.

When the construct validity was tested it was determined that the subscale correlations ranged between -0.04 and 0.60. In the findings of the study by Tulman et al. as well the construct validity was low (-0.02 to 0.69), as expected, because the subscales are theoretically independent.^{2,12} The similarity of the questions between the child care activities and the infant care responsibilities and the items in the educational activities supporting the items in the occupational activities scale may be the reason why the correlation means were high.

CONCLUSION

The determination of fathers' functional status together with the mothers in the prenatal and postpartum periods will facilitate the fathers' adaptation with their new and developing roles and will make it possible to provide family centered care. The adaptation of the tool in different societies will also show how influential cultural differences are on functional status.

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