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SHORT REPORT

Validity and reliability of a Turkish version of the Friendship Activity Scale

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The purpose of this study was to develop a valid and reliable Turkish version of the Friendship Activity Scale (FAS). Both the English and Turkish versions of the FAS were administered to 36 students to check for language equivalence. The Turkish version of the FAS was then administered to 226 students to ensure internal consistency, and to 61 students to test re-test reliability. The FAS and Adjective Check List (ACL) were administered to 49 students to check concurrent validity. There was a significant relationship between the English and Turkish versions of the FAS (r = .78), and there were no significant differences between the two measurements (p < .05). Cronbach Alpha Reliability of the FAS for the Turkish sample was .86. The Intraclass Correlation Coefficient of the repeated measurements of the FAS appeared to be sufficiently high (.89), and there were no significant differences between the mean values of two interval measurements (p < .05). The FAS significantly correlated with the ACL (r = 0.58). The total item correlations of the FAS were acceptable, ranging between 0.26 and 0.65. In conclusion, the FAS appears to be a valid and reliable instrument for measuring the behavioral intentions of Turkish elementary school children, and their commitment to initiating a friendship with a peer with a disability.

Keywords: friendship activity scale; attitudes; inclusion; children with disability validity; reliability

Integration applications were first mentioned in the Turkish Special Education Act as:

> Measures are taken in order to allow children in need of special education with relevant conditions and particularities, be educated in schools established for normal children, amongst their normal peers. (Official Journal of the Republic of Turkey 1983)

Nevertheless, the concept of 'integration' and the method of how these measures will be taken are not specified in the subject Act. The term of 'integration' was first roughly defined in the Decree About Special Education no. 573 in 1997, more

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specifically explained in the Regulation on Special Education Services published in 2000, under the headings of 'integration principles, application criteria, full time and part time applications, duties and responsibilities in integration applications' (Official Journal of the Republic of Turkey 2000).

In 2006 the Special Services Department of the Turkish Ministry of National Education announced a comprehensive description of integration guidelines, listing, among others, the support systems needed to accommodate these children that include trained school personnel, source rooms, help in class, and special education consultants. All of these elements must be put in place in order to allow the full integration of children with special needs (Official Journal of the Republic of Turkey 2006).

In parallel to the arrangements achieved in line with these regulations, more students with disabilities have been included in mainstream classes. While the ratio of students with special needs in integration classes represented 18.8% in 1990, this ratio reached 45.78% in 2000 and 66.31% in 2009 (Özer et al. 2009).

Over the last 20 years a greater number of students with a disability have been included in mainstream classes. There are fewer special classes in regular schools and also reduced enrollment in Turkish special schools (Özer et al. 2009). This changing environment has led to research studies concerning the process by which children with disabilities develop positive social relationships with schoolmates who do not have disability (Block and Obrusnikova 2007). Peer attitudes play an essential role in the successful inclusion of children with disability in general settings (Siperstein et al. 2007; Spencer-Cavaliere, and Watkinson 2010; Panagiotou et al. 2008).

Attitudes are thought to be multidimensional, composed of affective, behavioral, and cognitive components. The affective component addresses feelings and emotional reactions, the behavioral component relates to actual or intended behavior, and the cognitive component reflects beliefs and knowledge (Siperstein 1980). In general, the attitudes of children towards peers with disability are studied either by evaluating their attitudes towards the target peers in laboratory settings or by evaluating their sociometric preferences in the classroom setting (Siperstein, Bak, and O'Keefe 1988). In laboratory settings, behavioral intentions are typically examined by showing children video vignettes about a same-age and same-sex peer with a disability and then administering attitude scales.

Many studies on inclusion effects show that regular contact with children with disability can have a positive impact on the attitudes of peers toward children with disability (Baran et al. 2009; Bunch and Valeo 2004; Nabuzoka and Ronning 1997; Slininger, Sherrill, and Jankowski 2000; Panagiotou et al. 2008; Xafopoulos, Kudlacek, and Evaggelinou 2009).

There are few studies related to the attitude of peers towards children with disability and their social acceptance in Turkey (see, e.g., Aksütoğlu 1997; Civelek 1990; Çiftçi 1997; Tekin 1994). The limited number of Turkish scales for assessing peer acceptance is a significant barrier to designing such studies. Studies related to peer acceptance in integrated schools would contribute both to assessing the success of inclusion in Turkey and to taking relevant steps to counter negative attitudes.

Siperstein (1980) believed that measuring a child's intentions to play and interact with a peer with a disability would be a strong indicator of the child's actual behaviors. Since observing a child's actual play and interaction behavior is difficult (Horvat, Block, and Kelly 2006), Siperstein created the Friendship Activity Scale

(FAS; Bak and Siperstein 1986, 1987; Siperstein et al. 1988) to measure friendship intentions. The FAS is a common and well-established tool used to investigate the behavioral intentions of children toward peers with disability. It consists of 17 items describing activities a child typically engages in with classmates and friends. A recent review (Vignes et al. 2008) listed 17 methods for the measurement of children's attitudes toward peers with disability. Of these, FAS was described as a tool for the measurement of the behavioral components of attitudes. Another common method of measuring attitude is the Adjective Checklist (ACL), also developed by Siperstein (1980), who been described it as a means of measuring the cognitive components of attitudes. The concurrent validity of ACL was established by correlations with measurements of behavioral intentions. A Turkish version of the ACL has previously been validated (Çiftçi 1997). The purpose of the current study was to develop a valid and reliable Turkish version of the FAS, in order to provide a Turkish method to measure the behavioral component of attitude. Specifically, this study will: (a) establish the equivalence between the original English and the Turkish versions, (b) provide internal consistency reliability, (c) measure the test-retest reliability, and (d) examine the concurrent validity of the FAS with the ACL.

Method

Participants

To check the equivalence between the original and the Turkish versions of the FAS, we administered the scale to seventh grade students (n = 36) who were receiving English language instruction. In order to obtain the internal consistency reliability rates of the FAS, 226 sixth and seventh grade students (106 boys, 120 girls) participated in the study. A test/re-test study of the scale was carried out with 61 sixth and seventh grade students (24 boys, 37 girls) who were selected randomly from participants in the reliability study. To study concurrent validity, the FAS and the ACL were administered to 49 students (20 boys, 29 girls) who were randomly selected from participants in the reliability study (Table 1). The goal of the study was explained to the students and their parents, who read and completed consent forms to indicate their willingness to participate or to allow their children to do so.

Instruments

The Friendship Activity Scale (FAS)

Siperstein and his colleagues developed different types of the Activity Preference Scale, ACL, and FAS for the measurement of behavioral intentions of children in the US towards their peers with mental retardation. The FAS (Siperstein 1980) is an instrument designed to measure the behavioral intentions of children towards their

Table 1. Number of participants at different stages of the study.

	Equivalence of versions	Reliability and item analyses	Test-retest* reliability	Concurrent* validity
Male	21	106	24	20
Female	15	120	37	29
Total	36	226	61	49

Note: *Randomly selected from reliability study participants.

peers. It consists of 17 items that represent common activities that children engage in with their friends, both inside and outside of school, although the author has indicated that the number of items can be reduced to 10 without reducing reliability or validity (Siperstein 1980). Internal consistency reliability for the FAS ranges from .91 to .97 (Siperstein et al. 1988; Byrne and Hennessy 2009). The original questionnaire contains five conceptual groupings: (a) helping behaviors, (b) sharing behaviors, (c) physical proximity, (d) common activities, and (e) intimacy level.

A four-point scale is used. Participants indicate whether they would (4), probably would (3), probably would not (2), or would not (1) include the hypothetical child in the listed activity. The range of scores is 17 to 68. High scores reflect positive attitudes and low scores reflect negative attitudes.

Adjective Checklist (ACL)

The ACL (Siperstein 1980) is designed to assess children's judgment of the attributes of a new peer. The reliability of the ACL was assessed by a calculation of the Cronbach alpha coefficient of reliability (Alpha = .81) (Siperstein 1980). In concurrent validity, the ACL was significantly correlated to the behavioral intentions of the children, as measured by the Activity Preference Scale (r = .49). A Turkish version of the ACL was developed by Ciftci (1997), and was found to have an acceptable internal consistency reliability (Cronbach's Alpha) of .62, and a concurrent validity rate of .53.

The summary score of the ACL is made up of the total of positive adjectives minus the total of negative adjectives, plus a constant 20 (in order to avoid multiplying negative numbers in some statistical procedures). Thus, summary scores above 20 indicate relatively positive impressions, whereas summary scores below 20 indicate negative impressions.

Procedure

As in previous studies (Bak and Siperstein 1986, 1987; Castagno 2001; Cluniess-Ross and Thomas 1986; Manetti, Schneider, and Siperstein 2001; Siperstein, Bak, and O'Keefe 1988; Tripp, French, and Sherrill 1995), we used a hypothetical classmate with intellectual disability (ID). Before the FAS and ACL were handed out to the children, they observed a PowerPoint presentation that included photographs of athletes with ID (some of them with Down syndrome) and listened to a description of the athletes' attributes, according to the procedure described in detail by Siperstein and Chatillon (1982).

The FAS was translated into Turkish by three professional bilingual translators, and translated back into English (back translation) by three other bilingual translators. After review, the translation committee agreed on a version of the FAS which best reflected the linguistic and conceptual material of the original FAS.

Statistical analysis

In order to determine the equivalence of the original and Turkish versions of the FAS, a paired test and a Pearson Correlation Coefficient were used. The internal consistency of the FAS was determined by computing Cronbach's Coefficient Alpha. In order to determine test re-test reliability, the Intraclass Correlation

Coefficient (ICC) was computed. In addition, a paired t-test was used to compare the mean scores of the repeated measurements. Corrected item–total correlation analysis was used for item analyses. In order to obtain the concurrent validity of the FAS, the Pearson Correlation Coefficient between the FAS and the ACL was computed.

Results

The means and standard deviations of the ages of the participants at different stages of the study are presented in Table 2.

Equivalence of the original English and the Turkish versions of the FAS

A paired t-test was run to determine the differences between the two measurements; it indicated no significant differences between them (t [35] = 1.06, p = 0.30) (Table 3). In addition, a significant correlation between the original and the Turkish versions was found (r [36] = 0.78, $p < .001$).

Reliability results

The Turkish version of the FAS was administered to 226 elementary school students in order to compute internal consistency reliability (Table 4). Cronbach's Alpha reliability of the FAS for the Turkish sample was .86.

The results of the Intraclass Correlation (ICC) Analysis (Table 5) showed that the ICC of the FAS appeared to be sufficiently high (.89), and there was no significant difference between the means of two interval measurements (t [60] =

Table 2. Mean and SD of participants' ages.

	Equivalence of versions N = 36		Reliability and item analyses N = 226		Test-retest reliability N = 61		Concurrent validity N = 49	
	M	SD	M	SD	M	SD	M	SD
Age (years)	13.47	0.38	11.82	0.53	11.74	0.42	11.77	0.47

Notes: M: mean; SD: standard deviation.

Table 3. Results of paired t-test and correlation study of Turkish and original English versions total score (N = 36).

	FAS (Turkish version)	Paired t-test P	FAS (original English version)	Pearson correlation coefficient (r)
Total score	55.31 ± 9.33	$t(35) = 1.06$, p = 0.30	56.36 ± 8.58	0.78, $p < .001$

Note: FAS: Friendship Activity Scale.

Table 4. Results of Test-Retest Reliability Study (N = 61).

	FAS (Initial Test)	Paired t-test P	FAS (Final Test)	ICC *r*
Total score	57.33 ± 6.64	$t(60) = 1.55$, p = 0.13	56.66 ± 7.10	0.89, $p < .001$

Table 5. Results of concurrent validity (N = 49).

	FAS	ACL	Pearson correlation coefficient (*r*)
Total score	55.76 ± 7.05	23.69 ± 5.90	0.58, $p < .001$

Notes: FAS: Friendship Activity Scale; ACL: Adjective Checklist.

1.56, p = 0.13). The Cronbach Alpha Coefficient of the ACL was .61. The test/re-test reliability analysis of the ACL revealed an ICC of .97.

Validity

Table 5 presents the concurrent validity. It was found that the FAS was significantly correlated to the responses of children to the ACL (r [49] = 0.58; $p < .001$). Within the item analysis, a corrected item total correlation was computed between the total score and each of the item scores of the FAS, demonstrating acceptable values ranging from 0.26 and 0.65.

Discussion

In this study the validity and reliability of the FAS were examined in a sample of elementary school students. The high correlation ($r = 0.78$) found between the English and the Turkish forms of the FAS indicated that both forms were similarly understood by the participants, and that the FAS had been properly translated into the Turkish language.

In the reliability analyses, the Cronbach Alpha Coefficient of the FAS was .86, which indicates good internal consistency (Cortina 1993). In test/re-test reliability results, the ICC of the FAS (.89) was sufficiently high (Shaughnessy and Zechmeister 1997), and there was no significant difference between the repeated measurements. Our findings show that the FAS had a strong test/re-test reliability within a 12-day period. The reliability rate suggests the practicality of using the FAS for Turkish elementary school students.

In the present study, concurrent validity was supported by examining the Pearson Correlation Coefficient between the FAS and the ACL ($r = .58$). Moderate correlations of the FAS with the ACL support the concurrent validity of the FAS. In the original study, Siperstein (1980) found that there was a significant correlation between the Activity Preference Scale and the ACL ($r = .49$). As in the Siperstein study, Çiftçi (1997) also found a significant correlation between the Activity Preference Scale and the ACL ($r = .53$).

Item analysis results to determine the validity of the FAS indicate that corrected item-total correlation ranged from .26 to .65. All the obtained item-total correlation

values for the FAS in this study were found to be above the acceptable value of .20 (Ağargün, Kara, and Anlar 1996).

All of the research studies using the FAS were carried out in English-speaking countries. To the best of our knowledge, this is the first time the psychometric properties of FAS have been investigated in a country with a language other than English. In the previous, English-based studies, internal consistency reliability for the FAS has ranged from .91 to .97 (Byrne and Hennessy 2009; Castagno 2001; Crothers, Linden, and Kennedy 2007; Siperstein et al. 1988), and total correlations ranged from 0.46 to 0.96 (Byrne and Hennessy 2009). Although some of the previous studies showed superior psychometric properties, the findings in the present Turkish sample are within the acceptable range.

In Turkey, one of the reasons for the insufficient number of studies related to peer attitudes toward children with disability has been the limited number of appropriate scales. Our study adds a valid and reliable scale for measuring peer attitudes and intentions within the Turkish culture, and therefore enables a cross-cultural comparison of behavioral intentions to be carried out between the Turkish and the US cultures.

In conclusion, the FAS appears to be a valid and reliable instrument for the measurement of the behavioral intentions of children, as well as their commitment to befriending a new peer with disability, in Turkish elementary school children.

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