ADAPTATION OF COMPOSITE CODEPENDENCY SCALE TO TURKISH: A VALIDITY AND RELIABILITY STUDY*

Yağmur ULUSOY**
S. Sonay GÜÇRAY***

Abstract
The purpose of this study is to adapt the Composite Codependency Scale developed by Marks, Blore, Hine ve Dear (2012) to Turkish and examine the validity and reliability of the scale. The study was conducted with four different sample groups of total of 871 university students (553 female, 318 male) between the ages of 21 and 58. As a result of explanatory factor analysis, the scale is composed of three factors, similarly to original form of the scale. The factors were loaded with factor loadings between .36 and .73. As a result of confirmatory factor analysis, factor loads were found to be between .32 and .86. All parameters except two parameters (AGFI ve NFI) were found to have acceptable values. Correlation values were calculated between BKBÖ and the applied scales within the context of criterion validity. BKBÖ was found to be related to this scales. Item-total correlations varied between .28 and .68; Cronbach Alpha Internal consistency coefficients varied between .61 and .76 and test-retest reliability coefficients varied between .60 and .66. These findings demonstrated that BKBÖ is a reliable and valid scale.

Keywords: Codependency, Validity and Reliability.

1. Introduction
The concept of codependency (Lindley, Giordano and Hammer, 1999: 59-64), which is used to describe nonfunctional relations and all dynamics of these relationships, was originally associated with alcoholism (Kresten and Bepko, 1990: 216-232) and used to define the nonfunctional relationship between alcoholic individuals and their partners (Lindley, Giordano and Hammer, 1999: 59-64). It was later observed that the concept included the individuals that the substance abuser has a relationship with (partner, lover or other significant ones) (Hughes-Hammer, Martsolf and Zeller, 1998a: 326-334, Friel and Friel, 2010: 155-166), and it was used to define several attitudes and behavior that could have a negative impact on the individual’s functional ability, interpersonal relationships and selfhood (Zelvin, 1999: 9-23). It has been demonstrated that although it was initially considered that codependence developed in families with alcoholism problem, it could also develop in any family system with unexpressed and difficult to understand expectations and rules (Holder, Farnsworth and Wells, 1994: 76-80). The positive relationship between codependence and family-oriented problems and nonfunctional family structure (substance abuse in the family, physical, sexual and emotional abuse, neglect) supports the abovementioned descriptions (Carson and Baker, 1994: 395-407, Cullen and Carr, 1999: 505-525, Reyome and Ward, 2007: 37-50, Ançel and Kabakçı, 2009: 441-453).

Codependency leads the individual to seek an identity and self-worth beyond the individual, leading to a relationship in which his own satisfaction depends on external sources (Zelvin, 1999: 9-23), the individual is dragged into destructive and unprogressive relationships and remain in these relationships (Beattie, 52). Codependent individuals believe that they will be able to control others’ behavior and emotions with their own will, and when their expectations are not fulfilled, they resort to tougher initiatives, living in despair, helplessness and inadequacy (Morgan, 1991: 720-729). Furthermore, codependent individuals continue to experience wither they are close to the other as well as they are apart (Hendricks and Hendricks, 2008: 16-57).

* The present paper was generated from the dissertation titled “The effect of interaction group application integrated with psychodrama techniques on codependence.” The dissertation was sponsored by Çukurova University SRP department. Project code: SDK-2014-2

**T.A. Dr. Yağmur ULUSOY, İnönü University, Faculty of Education, Psychological Counseling and Guidance Department, yagmur.ulusoy@inonu.edu.tr

*** Prof. Dr. S.Sonay GÜÇRAY, Çukurova University, Faculty of Education, Psychological Counseling and Guidance Department Department, songuc@cu.edu.tr

The present paper was generated from the dissertation titled “The effect of interaction group application integrated with psychodrama techniques on codependence.” The dissertation was sponsored by Çukurova University SRP department. Project code: SDK-2014-2

Codependency has been described in different forms such as disease, disorder, dysfunctional behavior and dysfunctional lifestyle (Schaef, 1986: 13-20; Wright and Wright, 1991: 435-454, Whitfield, 2006: 25-42, Friel and Friel, 2010: 155-166). Due to these different definitions, it is noteworthy that there is no common and clear definition of codependency in the literature (Cowan, Bommersbach and Curtis, 1995: 221-236; Dear and Roberts 2002: 159-165). Dear, Roberts and Lange (2004) concluded that the themes of external focus, self-sacrifice, self-control, and suppression of emotions were the determinant characteristics of codependency in a study where they conducted a content analysis on 11 definitions that explain the concept to reveal the main components of codependency (63-79).

Since 1950s, when the concept of codependency was defined, the scales developed in parallel with the change in the content of the concept changed as well (Ançel, 2012). In the literature, Marks, Blore, Hine and Dear (2012) developed the Composite Codependency Scale (CCS) to obtain a psychometrically standardized scale, since there was no single scale used for this purpose at the time (119-127). The main objective of the present study was the adaptation of the CCS (Marx, Blore, Hine and Dear, 2012: 119-127), which includes the common themes of the most widely used definitions of the concept of codependency and the items from the most common scales, to Turkish and to conduct validity and reliability studies on the scale. Although certain scales that were developed to determine codependency in the literature were adapted to Turkish (Ançel and Kabakçı, 2009: 441-453; Mukba, 2012: 119-127), it was considered that the adaptation, validity and reliability studies on CCS (Marks, Blore and Hine Dear, 1983), which is a contemporary measurement instrument, would contribute as an alternative measurement tool that would reduce the limitations which arise due to limitations of definition for researchers who would like to work on this issue.

2. Method

2.1. Study Group

The present study was conducted with students attending different programs in İnönü University Faculty of Education and pedagogical formation in 2014-2015 academic year. Within the scope of the scale validity and reliability studies, four different sample groups that included 553 female (63.4%) and 318 (36.6%) male, a total of 871 21 – 58 years old students were determined.

2.2. Data Collection Tools

2.2.1. Composite Codependency Scale (CCS)

The CCS scale was constructed with the items from the following four measurement tools: Holyoake Codependency Index developed by Marks, Blore, Hine and Dear (2012) (Dear and Roberts, 2000), Spann-Fisher Codependency Scale (Fischer, Spann and Crawford, 1991), Codependent Assessment Tool, (Hughes-Hammer, Martsof and Zeller, 1998b) and the Codependent Questionnaire (Roehling and Gaumond, 1996). As a result of the conducted explanatory factor analysis, a scale with 19 items was obtained. CCS is a Likert-type scale where the scoring is conducted between 1 (I completely disagree) and (I somewhat agree) and includes “Interpersonal Control (IC),” “Self-Sacrifice (SS),” and “Suppression of Emotions (SE)” sub-scales and with factor loads between .54 and .75. The values obtained with correlation and factor analysis that indicated positive correlations between codependence and depression, anxiety, stress and familial dysfunction and negative correlations between codependence and self-esteem, the emotional expression, and the narcissistic tendencies were considered as findings that supported validity and reliability (Marks, Blore, Hine and Dear, 2012: 119-127). High scores obtained from the scale indicate a high level of codependency.

2.2.2. Rosenberg Self-Esteem Scale (RSES)

The scale, developed by Rosenberg (1965) and adapted to Turkish by Çuhadaroğlu (1986), includes 12 subscales. A score of 0-1 in the self-esteem subscale indicates 'high' self-esteem, 2-4 points indicates 'moderate' self-esteem, and 5-6 points indicate 'low' self-esteem. The test retest reliability of the RSES subscales ranged between .46 and .89. Significant difference between self-esteem scores of the patient and the control groups was accepted as a sign of construct validity (Akt. Öner 2012: 739-741). Self-esteem subscale (SE) was used in the present study.

2.2.3. Depression Anxiety Stress Scale (DAS)
The scale developed by Lovibond and Lovibond (1995) to measure depression, stress and anxiety on a single scale was adapted to Turkish by Akın and Çetin (2007). In DAS, scored with the statements of “It does not apply to me” and “It applies to me completely,” high scores in each dimension indicates that the individual has the problem reflected in that dimension. Internal consistency coefficients for the average total and subscale scores for the scale consisting of three subscales; Depression (DE), Anxiety (AS) and Stress (ST), ranged between .89 and .92, while Sperman-Brown split-half reliability coefficients ranged between .95 and .98 (Akın and Çetin, 2007: 241-268).

2.2.4. Narcissistic Personality Inventory – Short Form (NPE-SF)

Adaptation of the inventory developed by Ames, Rose and Anderson (2006) to Turkish was conducted by Atay (2009). Each item in the Narcissistic Personality Inventory includes two statements, one narcissistic and another that does not contain narcissism. Responses with narcissism are scored with (1) and non-narcissistic responses with a (0). The internal consistency coefficient of NPE-SF with six subscales was calculated as .62. High scores obtained in NPE-SF reflect strong narcissistic tendencies (Atay, 2009: 181-196).

2.2.5. McMaster Family Assessment Device (MMFAD)

The scale developed in the United States Brown University and Buttlor Hospital Family Research Program was adapted to Turkish by Bulut (1990) (Cited by Bulut, 1993: 41-48). A high score in MMFAD, a Likert type scale that includes seven subscales and scored between "I disagree completely" and "I agree completely", suggests an increase in the problem area related to each subscale (Öner, 2012). The internal consistency of the subscales ranged between .38 and .86, while test retest reliability ranged between .62 and .90 (Bulut, 1993: 41-48). The MMFAD General Functionality (GF) subscale was used in this study.

2.2.6. Emotional Expression Scale (EES)

The scale developed by King and Emmons (1990) and adapted to Turkish by Kuzucu (2011) is a Likert type scale rated between 1 and 7 points. High scores in the scale indicate a high tendency to express emotions. The test retest reliability was calculated as 0.85 for the scale that includes three sub-dimensions of positive emotional expression (PEE), Negative Emotion Expression (NEE) and Intimacy (I), and the internal consistency coefficient for average total scores and subscale scores varied between .64 and .85 (Kuzucu, 2011: 779-792).

2.2.7. Codependency Determination Scale (CDS)

The scale developed by Hughes-Hammer, Martsof and Zeller (1998b) and adapted to Turkish by Ançel and Kabaçlı (2009) is the first scale used to measure codependence Turkey, which underwent validity and reliability scrutiny. The Likert-type scale included 25 items and 5 subscales and scored between 1 and 5 points. The internal consistency coefficients of average total score and subscale scores for the CDS varies between .62 and .78. High scores obtained in the scale indicate high level of codependency (Ançel and Kabaçlı, 2009: 441-453). The Self-Worth (SW) subscale was used in the current study.

2.3. Procedure

For adaptation of the scale to Turkish language, one of the developers of the scale, Dr. Anthony D.G. Marx was contacted and upon receipt of the approval, the scale was translated into Turkish by the authors using unidirectional translation. To assess the adequacy of the translated form to the original form of the scale, the views of four specialists in psychology that are fluent in both languages and cultures, and to determine whether the items translated into Turkish were comprehensible, the views of 22 senior students attending Inönü University Guidance and Psychological Counseling Program during 2013-2014 academic year were obtained. The required editing was conducted on the Turkish form based on the views of both experts and students. To test for item equivalency, the original form and then the Turkish form after 2 weeks were applied to 48 junior and senior students attending Inonu University, Faculty of Education English Teaching Program during the 2013-2014 academic year, and it was found that the correlation between the original form scores and that for the Turkish form varied between .33 and .88. After conducting the necessary editing on the Turkish expression of the item with a low correlation, the Turkish scale was finalized. Scale validity and reliability analyzes were performed using the data obtained with four different samples. Explanatory factor analysis, confirmatory factor analysis and criterion validity were used to test the validity of the scale translated into Turkish and scale reliability was assessed with item total score correlation, internal consistency and test retest methods. SPSS 15.0 and AMOS 21 statistical software were used in the statistical analysis conducted in the study.

3. Findings

3.1. Validity Studies

Explanatory factor analysis was conducted on the data obtained from the first sample that included 213 students (126 female and 87 male), who were between 21 and 34 years of age. According to Sharma
a Kaiser-Meyer-Olkin (KMO) value above .50 indicates that the data set is suitable for factor analysis (Cited by Kalaycı, 2006: 321-331). The exploratory factor analysis yielded a KMO value of .65 and Barlett test result was calculated as $x^2 = 682.50$ (df = 17, p <.000). These values indicated that the data were suitable for factor analysis. In the factor analysis, a three-factor structure was obtained and these factors explained 35.51% of the total variance. It was identified that one item (Item 6) did not load to any factor and three items (Item 7, Item 11 and Item 13) were loaded to other factors other than their own. Çokluk, Şekercioğlu and Büyüköztürk (2010) indicated that if the items translated into Turkish differ from the original form, the item statements could be changed (177-245). After the changes on the conceptual statements in these four items were conducted, the final version of the scale was applied to a second sample that included 346 students (196 female, 150 male) aged between 21 and 58 and explanatory factor analysis was performed on the obtained data. The calculated KMO value was .76, and the Barlett test result was calculated as $x^2 = 1309.54$ (df = 17, p <.000). As a result of the three-factor principle components analysis conducted with Varimax rotation method, it was determined that the three factors explained 39.99% of the total variance. It was observed that all items were loaded in the related factors except for two items (Items 13 and 18). The fact that the factor load for each item had a value of .32 and above (Tabachnick and Fidell, 2001: 582-652) indicated that when the item factor loads did not meet the acceptance level, these items should be removed, the difference between the factor loads of items loaded to two or more factors should be at least .10 (Şekercioğlu and Büyüköztürk, 2010: 177-245), and items with a sufficiently high factor load under any single factor measured similar structures (Erkuş, 2014: 89-133). It was decided that since item 18 is loaded with a high factor load of a factor other than its own, this item was transferred to the dimension where it was loaded with a high factor load, and items 13 and 7 were removed since the former had a low factor load in its own dimension and the latter was loaded to its own factor, but also loaded to another with one point difference. The third factor analysis yielded a Kaiser-Meyer-Olkin (KMO) value of .76 after two items were removed, the result of Barlett test was $x^2 = 1217.55$ (df = 13, p <.000), the three factors explained 43.76% of the total variance, and it was observed that all items were loaded with their own factors. The factor loads of the items in CCS subscales are shown in Table 1 below.

<table>
<thead>
<tr>
<th>Alt Ölçekler</th>
<th>Madde No</th>
<th>KF</th>
<th>DB</th>
<th>KK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madde 14</td>
<td>.73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 18</td>
<td>.73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 3</td>
<td>.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 2</td>
<td>.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 17</td>
<td>.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 9</td>
<td>.53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 11</td>
<td>.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 19</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 12</td>
<td>.71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 1</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 6</td>
<td>.67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 15</td>
<td>.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 4</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 16</td>
<td>.64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 10</td>
<td>.59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 5</td>
<td>.49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madde 8</td>
<td>.44</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 demonstrates that the adapted scale item factor loads ranged between .36 and .73. Confirmatory factor analysis was conducted to test whether there was a goodness of fit between the three-factor model obtained by exploratory factor analysis and the data. For confirmatory factor analysis, a third sample that included 194 students (137 female and 57 male), aged between 21 and 40 years old, was selected. As a result of the analysis conducted on the data obtained from the third sample, it was observed that the factor loads ranged between .32 and .86. The goodness of fit indices obtained with the CCS were calculated as $\chi^2 / sd = 1.39$, p = .00, RMSEA = .04, SRMR = .07, GFI = .91, AGFI = .88, NFI = .76 and CFI = .92. A $\chi^2 / sd$ ratio lower than 5, RMSEA and SRMR values lower than .08, GFI, AGFI, NFI and CFI values higher than .90 indicate that the model had acceptable goodness of fit values (Schumacker and Lomax, 2004: 80-115; Schermelleh-Engel, Moosbrugger and Müller, 2003: 23-74; Büyüköztürk, 2010: 177-245). Other parameters except the AGFI and NFI were found to meet the acceptable goodness of fit values.
Within the scope of the criterion-based validity study, the Turkish forms of the scales used in the development stage of CCS were used. The correlation analysis on the data obtained from the third sample in this study demonstrated that there was a significant positive correlation between CCS subscale IC and DAS subscale D at the level of .25 and subscale A at the level of .31 and subscale S at the level of .38; between CCS subscale IC and EES subscale PEE at the level of .23; between CCS subscale IC and CDS subscale SW at the level of .20; between CCS subscale IC and NPE-SF at the level of .23, and there was a significant negative correlation between CCS subscale IC and MMFAD subscale GF at the level of .15. There was a significant positive correlation between CCS subscale SS and DAS subscale A at the level of .19. There was a significant positive correlation between CCS subscale SE and DAS subscale D at the level of .22, between CCS subscale SE and DAS subscale S at the level of .25; and there was a significant negative correlation between CCS subscale SE and EES subscale PEE at the level of .23, subscale I at the level of .46, and between CCS subscale SE and EES total scores at the level of .39. There was a significant positive correlation between CCS total score and DAS subscale D at the level of .25, subscale A at the level of .34, and subscale S at the level of .37; between CCS total score and CDS subscale SW at the level of .21, and there was a significant negative correlation between CCS total score and RSES subscale SE at the level of .15 and between CCS total score and EES subscale I at the level of .17.

3.2. Reliability Studies

While the item total score correlation values and the internal consistency coefficients were calculated on the data obtained from the second sample, test-retest reliability was calculated on the data obtained from the fourth sample that included 118 students (94 female and 24 male), aged between 22 and 38 years. Internal consistency and test-retest reliability coefficients of the scale ranged between .60 and .80, indicating that the scale was reliable (Cooley, 2010: 99-127), it was stated that items with a total correlation value over .30 are good items and items with values between .20 and .30 could be included in the measurement tool if necessary (Büyüköztürk, 2007: 167-182). The conducted analyzes demonstrated that item total score correlation values were between .28 and .68. Cronbach Alpha internal consistency coefficients were .61 for CCS subscale IC, .76 for CCS subscale SS, .75 for CCS subscale SE and .75 for CCS total score; test retest correlation values were .64 for CCS subscale IC, .62 for CCS subscale of SS, .60 for CCS subscale SE, and .66 for CCS total score. The results of the reliability study demonstrated that the Turkish version of CCS was reliable.

4. Result, discussion and recommendations

The aim of the present study was to conduct validity and reliability studies for the Turkish version of CCS developed by Marks, Blore, Hine and Dear (2012). After the exploratory and confirmatory factor analyses conducted within the scope of the validity study for the adaptation of CCS to Turkish language, the criterion validity was examined. In the present study, two different samples were used for explanatory factor analysis and as a result of the explanatory factor analysis conducted on the data obtained from the first sample, it was observed that the CCS included three factors similar to the original form, however there were items that were not loaded with any factor and loaded on factors other than its own factor. After the item statements were reviewed, a final Turkish version of the scale was applied to a second sample and a factor analysis was conducted again on the data obtained from the second sample. The analysis results showed that two items were not loaded to any factors and one item was loaded to a factor other than it was related to with a higher factor load, and other items were loaded to related factors similar to the original version of the scale. After the item that was loaded to an unrelated factor was added to that factor and two factors that did not load to any factor were removed, a third factor analysis was conducted. The conducted analysis results showed that the items were loaded to related factors with values ranging between .36 and .81 similar to the original scale, it was concluded that the factor analysis provided construct validity for the scale (Tabachnick and Fidell 2001: 582-652, Çokluk, Şekercioğlu ve Büyüköztürk, 2010: 177-245 Erküş 2014: 89-133). It was stated that scale adaptation studies frequently demonstrate significant differences among cultures (Şahin, 1994). In the present study, the removal of the two items that existed in the original scale and did not exhibit a valid structure in the adapted scale can be explained by the differences between cultures.

Confirmatory factor analysis showed that the items were loaded to their related factors with factor loads that varied between .32 and .86 and the parameters with the exception of two (AGFI and NFI) were over the acceptable values. Although it is preferred to confirm the structure constructed with the explanatory factor analysis with confirmatory factor analysis, it was also noted that it would not be always possible to construct a perfect structure (Erkorkmaz, Etikan, Demir, Özdamar and Sanisoğlu, 2013: 210-223). The results obtained with confirmatory factor analysis were interpreted to support the structure explained
by the explanatory factor analysis. Correlation values obtained with the criterion-based validity study were found to be similar to those obtained by Marx, Blore, Hine and Dear (2012) who developed the scale.

Item total score correlations, internal consistency and test retest reliability coefficients were calculated within the reliability study in the process of the adaptation of CCS to Turkish. The fact that CCS item total correlation values were between .28 and .68 and subscale and total scores Cronbach Alpha internal consistency coefficients were between .61 and .76, and test retest correlations were between .60 and .66 was interpreted as the CCS Turkish form met the reliability criteria. (Büyüköztürk, 2007: 167-182, Coaley 2001: 99-127). In conclusion, the findings of the validity and reliability studies demonstrated that CCS is a valid and reliable measurement tool.

The study group of the present study is limited to college students and graduates and this fact should be considered when it is used for data collection purposes and for the generalization of the results. Thus, it may be advisable to conduct validity and reliability studies on samples in different age groups. The evaluation of the dynamics specific to different cultures can provide a better understanding on the structures related to the concept of codependency and which factors could be considered as indicators of the codependency concept in Turkish culture that has both individualist and collectivist properties, and how. Furthermore, it is considered that future cross-cultural comparative studies on codependency variable and the relationship between CCS and different variables could contribute to the literature.

REFERENCES