

Measurement and Evaluation in Counseling and Development

ISSN: 0748-1756 (Print) 1947-6302 (Online) Journal homepage: http://www.tandfonline.com/loi/uecd20

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To cite this article: Ramazan Akdoğan & A. Sibel Türküm (2018): Insight Scale for Nonclinical University Students: Validity and Reliability Analysis, Measurement and Evaluation in Counseling and Development, DOI: 10.1080/07481756.2017.1413941

To link to this article: https://doi.org/10.1080/07481756.2017.1413941

Published online: 26 Jan 2018.

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MEASUREMENT AND EVALUATION IN COUNSELING AND DEVELOPMENT
2018, VOL. 0, NO. 0, 1–13
https://doi.org/10.1080/07481756.2017.1413941

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Insight Scale for Nonclinical University Students: Validity and Reliability Analysis

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ABSTRACT

In this study, a scale was developed to determine the levels of insight held by nonclinical university students. During the development process, exploratory and confirmatory factor analyses and reliability analyses were conducted. The results of analyses show that the scale is suitable to identify the insight levels of nonclinical university students.

KEYWORDS

Confirmatory factor analysis; exploratory factor analysis; insight

Insight is a broad concept including cognitive, affective, and operational signs of therapeutic healing (Egan, 1990). It is regarded as a vital therapeutic goal in individual counseling (Eisenberg & Delaney, 1998; Kolk, 1998; Patterson & Welfel, 2000), group counseling (Corey, 2004; George & Dustin, 1988; Manaster, Cleland, & Brooks, 1974), and in many severe psychological disorders such as schizophrenia (Choudhury, Khess, Bhattacharyya, & Sanyal, 2009; Lam & Wong, 1997; Umut, Altun, Danismant, Kucukparlak, & Karamustafalioglu, 2012; Yu-Chen, Tzong-Shi, Chien-Wen, & Yia-Ping, 2011).

Within the literature, two major definitions of insight (clinical and cognitive) are noteworthy in clinical practice. *Clinical insight* generally refers to the level of awareness concerning one's own condition among patients with psychotic disorders (Aslan & Altinoz, 2010; Choudhury et al., 2009; Guclu, Karaca, Yildirim, Ozkose, & Erkiran, 2011; Lam & Wong, 1997; Uchida et al., 2009; Umut et al., 2012; Yu-Chen et al., 2011). In this regard, clinical insight can be viewed as one's capacity to understand the problems that one goes through (Aslan et al., 2005). Beck, Baruch, Balter, Steer, and Warman (2004) stated that there are some clinical indicators of insight. That one accepts his or her state related to his or her psychological disturbance, the symptoms are pathological, a treatment is necessary, and the source of the displayed symptoms are related with his or her disorder are some of those indicators. From this standpoint, clinical insight is an instrument to attain therapeutic goals in addition to being a goal on its own. The concept of clinical insight is mostly employed during diagnostic and treatment procedures (Beck et al., 2004). On the other hand, *cognitive insight* refers to misinterpretations, faulty beliefs, or cognitive distortions stemming from one's condition (Beck et al., 2004; Burton & Vella, 2011; Uchida et al., 2009). Thus, cognitive insight covers not only assessing faulty beliefs and misinterpretations, but also fixing them. This aspect of clinical insight makes it a sign of high-level metacognition for psychiatric patients (Beck et al., 2004). Therefore, cognitive insight can be not only a tool for therapeutic healing, but also as a therapeutic goal. As a result, both clinical and cognitive insight can be considered crucial indicators of one's functionality for psychotic or relatively more severe psychological patients.

Theoretical explanations concerning insight clearly depict that this concept is relevant not only for patients with severe psychological disorders, but also for nonclinical individuals displaying normal behavior. In this regard, insight is defined as a broader concept including both clinical and cognitive

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insight for normal individuals without any psychological disorders. As a matter of fact, insight is considered a paramount therapeutic goal in the classical psychoanalytic approach (Corey, 1996; Murdock, 2012; Westen, 1996), the Adlerian approach (Corey, 1996, 2004; Gazda, 1989; Mosak & LeFevre, 1976; Sonstegard, 1998; Sweeney, 1989), the Gestalt approach (Corey, 1996; Corsini, 1984), client-centered therapy (Corey, 1996), and rational emotive behavior therapy (Ellis, 1988).

In this respect, insight refers to one's discoveries about his or her problems, thoughts, and concerns; to obvious manifestation of his or her hypotheses, beliefs, motivations, and conflicts (Patterson & Welfel, 2000); to becoming conscious (Eisenberg & Delaney, 1998); and to self-understanding through self-interpretation (Kolk, 1998). Insight can be thought of as an internal process (Akdogan & Turkum, 2014). However, insight also bears some operational indicators. For instance, when an individual deals with his or her problems through a new point of view, makes new comments, adopts a more meticulous approach covering more components in his or her behaviors and attitudes, and expresses the meaning of his or her emotions, it is possible to conclude that the client has gained insight (Egan, 1990; Kolk, 1998). Thus, through understanding himself or herself and increasing his or her level of awareness, a client can take advantage of opportunities for improvement and cope with his or her problems (Egan, 1990). Therefore, insight bears behavioral signs in an individual's life, which can also be considered therapeutic goals. An overview of definitions concerning insight and its indicators reveals two common aspects. The first one entails active involvement of the client as an individual, and the second one requires a higher level of awareness related to his or her emotions, thoughts, and behaviors.

In light of these definitions and explanations, with insight being quite an abstract term and being intricately related to many other psychological structures, a theoretical explanation of insight can be considered vague (Akdogan & Turkum, 2014). Although it is thought not to be confined to only awareness (Markova & Berrios, 2011) by some scholars, it is considered to be the predictor of awareness by others (Silvia & Phillips, 2011), and it is further seen as only a part of awareness by some others (Creed & Funder, 1998). Furthermore, some other studies revealed that insight does not mean self-reflection, but it is a result following self-reflection (Lyke, 2009). Yet, a positive correlation was determined between self-reflection and insight in a study by Lyke (2009). In that study, the fact that individuals with high levels of life satisfaction and happiness also had higher levels of insight and self-reflection was taken as proof for this correlation. On the other hand, insight is claimed to be a strong predictor of well-being and unhappiness (Fleckhammer, 2004). Although there is an agreement that an individual's behaviors are the operational signs of insight (Carkhuff, 2000; Corey, 1996; Egan, 1990; Gazda, 1989) definitions regarding insight do not perfectly overlap. Moreover, the studies carried out are mainly conducted on individuals with psychiatric conditions rather than normally developing individuals (Aslan & Altinoz, 2010; Choudhury et al., 2009; Guclu et al., 2011; Lam & Wong, 1997; Umut et al., 2012; Yu-Chen et al., 2011). Consequently, it is obvious that there is a need for further research on the concept, especially with the assessment of normal individuals' insight.

One of the scales available in literature is the Beck Cognitive Insight Scale (BCIS; Beck et al., 2004). The BCIS aims to assess a patient's competence for self-reflection and if the patient can evaluate his or her faulty beliefs. The Self-Reflection and Insight Scale (SRIS; Grand, Franklin, & Langford, 2002) is another clinical tool employed to measure an individual's subjective consciousness level. The SRIS was developed to predict patients' prognosis and carry out clinical evaluations. In a nutshell, these two scales were developed to evaluate and assess patients with clinical features. Another scale within the literature is the one devised by Brown and Ryan (2003), the Mindful Attention Awareness Scale (MAAS). Although the MAAS was developed to assess nonclinical university students, it basically aims to evaluate students' general tendency to notice momentary experiences and to be careful about them rather than evaluating their insight thoroughly. Thus, one might conclude that the MAAS provides information regarding a specific aspect of insight. However, insight does not only mean to notice the momentary experiences in daily life; it also refers to discoveries regarding one's internal experiences (Patterson & Welfel, 2000), to related interpretations of these processes, and to transferring of awareness into one's life (Egan, 1990; Kolk, 1998). The aforementioned features of the scales restrict the assessment of normal individuals and conduct of empirical studies concerning this concept. Thus, this study aims to develop a scale to determine the structure of insight for nonclinical university students.

Turkey is a developing country and has a great number of young people, among whom 6% are university students (see Turkish Statistical Agency, 2015). Considering the leading function of university students in a developing country, their psychological well-being is of great importance. The insight scale devised within the scope of this research is expected to facilitate scientific studies to assess university students' level of self-awareness and to improve their insight skills. Another rationale this study is based on is that university students make up a large community group seeking psychological help, even though a majority of them do not suffer from severe psychological disorders (Akdogan, 2012). Furthermore, the fact that insight requires relatively high levels of cognitive reasoning skills (Beck et al., 2004) and the assumption that university students are more capable of these skills than any other segment of the community can be considered another drive for this study. Further motivation for this study is that university students are faced with more challenging developmental tasks due to the life phase they are moving through, and this could lead not to psychiatric but psychological troubles (Adams, Berzonsky, & Keating, 2006; Arkar, Sari, & Fidaner, 2004; Ceyhan, 2009; Heinrich & Gullone, 2006; Pritchard, Wilson, & Yamnitz, 2007; Turkum, 2001, 2005; Turkum, Kiziltas, & Sariyer, 2004).

Method

Participants and Procedure

Data were collected from seven different voluntary student groups studying at four different grades of faculty of letters, education, fine arts, and engineering.

The first group of participants (Sample 1) were students who applied to the university's counseling center and who had not been diagnosed with any psychiatric illness such as unrealistic perception, suicidal tendencies, obsession–compulsion, and psychosis. These participants, who were labeled the nonclinical group, have difficulties such as life satisfaction, search for meaning, identity development, loneliness, relationship problems with peers or those of the opposite sex, concern for the future, homesickness, and academic problems. This sample served the purpose of determining university students' experiences and self-perceptions related with insight and identifying how they express these feelings. This group consists of 9 students (5 female, 4 male). In the selection of this group, the students were informed briefly about the purpose of the research, then they were interviewed at an appointment. During the meeting, researchers used open-ended questions that they had prepared. These questions were derived from the theoretical and descriptive explanations related to the concept of insight.

Samples 2 through 7 were made up of university students who had not applied to counseling services. Each group consists of different students. In the selection of these participant groups, official permission was received and then classrooms were visited. In the classrooms, students were informed briefly about the research, then the data set was applied to the student volunteers.

Sample 2 is the pilot study group for the Insight Scale. This group consisted of 45 university students (28 female, 17 male). Mean age of the participants was 23.22 ($SD = 1.86$).

Factor analysis of the scale was carried out on Sample 3. All the analyses were conducted on 421 university students (261 female, 160 male). The average age of the participants in this group was 21.16 ($SD = 2.90$).

Concurrent validity of the Insight Scale was tested on Sample 4 through correlation with the MAAS (Ozyesil, Arslan, Kesici, & Deniz, 2011). Total number of participants in this group was 112 university students (82 female, 30 male). The mean age for this group was 20.46 (SD = 1.41).

Concurrent validity of the Insight Scale was tested on Sample 5 through a correlation check with the Self-Compassion Scale (SCS; Deniz, Kesici, & Sumer, 2008). This group consisted of 78 university students (62 female, 16 male). In this sample, the mean age was 20.23 ($SD = 1.35$).

Confirmatory factor analysis (CFA) of the scale was conducted on Sample 6. The total number of participants in this group was 272 university students (182 female, 90 male). The mean age of this sample was 20.55 ($SD = 1.72$).

Sample 7 was used for test–retest reliability of the scale. There were 53 students (37, female, 16 male) in this group. The mean age of this sample was 20.79 ($SD = 2.35$).

Instruments

In this research, a draft form of the Insight Scale for Nonclinical University Students (ISNUS) was employed to collect data, a demographic information form was used to record the age and gender of the participants, and the MAAS and SCS were used to determine the concurrent validity of the scale.

Mindful Attention Awareness Scale

The MAAS was originally developed by Brown and Ryan (2003) to measure the general tendency of university students to be aware of daily experiences and to pay attention to these. The scale was adapted into Turkish by Ozyesil et al. (2011) as the MAAS Turkish Form. The MAAS Turkish Form, displaying a single-factor structure, was identified to be parallel with the original one at the end of adaptation studies with university students, and the Cronbach's alpha coefficient was determined to be .80. Test–retest reliability calculated within a 3-week interval was .86. In addition, fit indexes were identified to be $\chi^2 = 187.811$ ($N = 90$, $p < .01$), and $\chi^2/N = 2.086$, root mean square error of approximation (RMSEA) = .06, standardized root mean square (RMS) = .06, Goodness-of-Fit Index (GFI) = .93, and adjusted Goodness-of-Fit Index (AGFI) = .91 during CFA conducted within the same study. Based on these results, the MAAS Turkish Form is considered to yield valid and reliable scores to assess students' tendencies about mindful attention awareness (Ozyesil et al., 2011). In reliability analyses that measured on Sample 4, the Cronbach's alpha value of MAAS was calculated as .88. The fit indexes were identified as $\chi^2 = 180.64$ ($N = 112$, $p < .01$), $\chi^2/SD = 2.03$, RMSEA = .09, GFI = .58, and AGFI = .76.

Self-Compassion Scale

A 5-point Likert-type scale containing 26 items, the SCS was originally devised by Neff (2003), and adapted for Turkish by Deniz et al. (2008). The original form of the scale has six subdimensions, but the adapted form includes only one dimension with 24 items because two of the items were excluded by the authors because their item–total correlation was lower than .30 (Deniz et al., 2008). Eleven items of the scale have a reverse scoring, meaning that high scores indicate high levels of self-compassion. Cronbach's alpha internal consistency coefficient and test–retest reliability coefficient of the scale were calculated to be .89 and .83, respectively. To determine the factor structure of the Turkish Form of the SCS, CFA was employed. Fit indexes of the scale were identified to be $\chi^2(299) = 1523.02$ $p < .01$, $\chi^2/N = 5.09$, RMSEA = 0.123, RMS = 0.128, standardized RMS = 0.255, GFI = 0.692, AGFI = 0.638. These results are considered to be valid and reliable to assess students' tendencies about self-compassion (Deniz et al., 2008). In reliability analyses performed on Sample 5, the Cronbach's alpha value of SCS was calculated as .90. The fit indexes were identified as $\chi^2 = 535.83$ ($N = 78$, $p < .01$), $\chi^2/SD = 2.12$, RMSEA = .12, GFI = .63, and AGFI = .66.

Development Process of ISNUS

Several steps were followed in the development procedure for ISNUS. For the first step, 80 items were formed based on the theoretical explanations and descriptive studies (Beck et al., 2004; Burton & Vella, 2011; Corey, 2004; Corsini, 1984; Ellis, 1988; Gazda, 1989; Murdock, 2012; Sweeney, 1989). For this purpose, the descriptions or definitions related to the concept of insight, cognitive, affective, and behavioral aspects of insight and the other explanations used for the insight were converted to the items.

In the second step, semistructured interviews were conducted with four male and five female university students (Sample 1) to determine how they perceive insight and related concepts such as self-perception and experiences and to identify the way they express all these phenomena. For this purpose, each participant was informed about the concept of insight briefly. Then the self-perceptions and experiences of participants about insight were obtained. The data obtained were analyzed through content analysis (Yildirim & Simsek, 2005). Results yielded three subthemes—self-acceptance, self-evaluation, building connections—and other expressions. The sentences of the students matching with the items based on the literature were identified and both groups of items were formulated as single items using students' wording. Thus the 80 items mentioned earlier were rewritten using students' expressions. The

items were grouped under the three subgroups labeled after the themes obtained from the analysis of the interviews. The students' other sentences that do not match with the literature are accepted as latent variables and added to the item list, with the whole list totaling 100 items. After a closer examination, implicit, vague, and inappropriate items were filtered one more time leaving 80 items. This 80-item list was given to the academicians working in the psychological counseling department and psychological counselors working in the psychological counseling center of the university. They were asked to analyze the items of the list according to the following criteria:

- Is the item clear?
- Does the item reflect the university students' wording?
- Can the item content be related to the concept of "insight"?
- Does the item match with the related university student's daily experiences?
- Is the item based on an appropriate background?
- Does each item consist of a single proposition?
- Is each item free of other concepts apart from insight?

Following the expert opinions, total number of the items was reduced to 59 for the draft form of the scale. The draft scale was piloted on Sample 2, and all 59 items were concluded to be appropriate.

Findings

Validity and reliability analyses were completed to determine the psychometric features of ISNUS. The exploratory factor analysis (EFA), validity and reliability analyses were made using IBM (2013) SPSS-22 software and CFA was applied with LISREL 8.71 (Jöreskog & Sorbom, 2004).

Validity Analysis

Validity of this scale was studied through EFA and CFA. The results are given next.

Exploratory Factor Analysis

To extract the factor structure of the ISNUS, EFA was carried out on the data obtained from Sample 3. The direct oblimin was employed as the rotation technique and the maximum likelihood was employed as the type of estimating technique. At the beginning of factor analysis, responses by Sample 3 were investigated to see if they were suitable for factor analysis or not. Results yielded that the relation between many of the item pairs was higher than .30, and Kaiser-Mayer-Olkin (KMO) value was .88, which is significantly higher than the desired value, almost perfect (Field, 2005). In addition, the results of Bartlett's test of sphericity were also meaningful, $\chi^2(190) = 2012.72, p < .001$. These findings indicate that factor analysis can be performed on the data.

To find the construct validity of ISNUS, Kaiser normalization was taken as the norm. Kaiser normalization requires the Eigenvalues of each item be at least 1.00, factor loading on each of the factors be positive and at least .32, and an item's value on the factor to which it is attached be at least .10 more than its values on other factors (Cokluk, Sekercioglu, & Buyukozturk, 2010). Analysis of total variance and common variance explained after factor analysis pointed to 16 factors with Eigenvalues higher than 1.00. The variance explained by these 16 factors is 58.54% in total. Furthermore, common factor variance of items ranges between .46 and .68. Yet, the percentages of variance explained by the first, second, and third emerging factors are 17.07, 5.97, and 5.02, respectively, which is 28.07% for all three factors. The other 13 factors, on the other hand, can explain between 3.31% and 1.79% of the variance, reaching up to 30% of the total variance. This shows that the first three factors can explain a significant portion of the 58.54% total variance. Likewise, the scree plot graph (Figure 1) pointed out that the scale could have three dimensions, and rotation was completed with three factors.

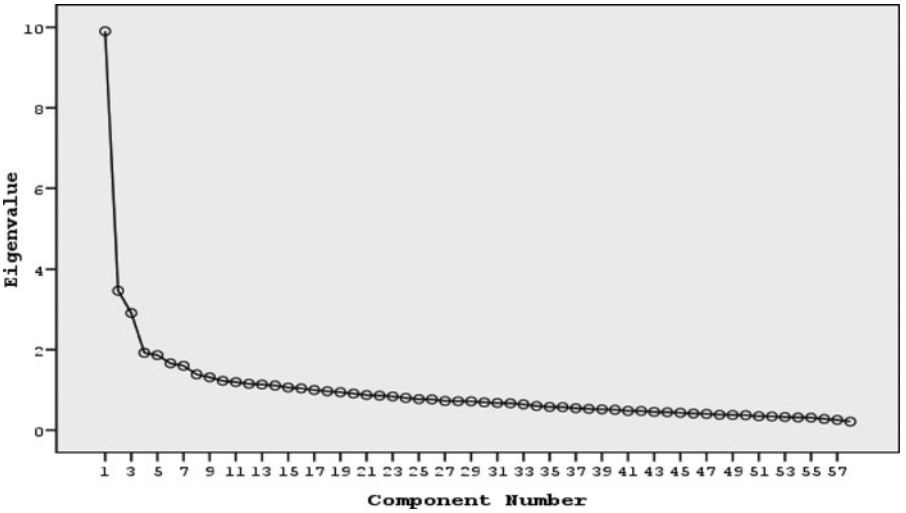

Figure 1. Scree plot of Insight Scale for Nonclinical University Students drawn with 59 items.

Following the rotation process with three factors, items with factor load values that are lower than .32 or those with factor load values that are similar under different factors were excluded, and the analysis was finalized with three factors. As a result, a 20-item and three-factor structure was revealed. Table 1 depicts the results of this analysis.

As seen in Table 1, all three factors could explain 45.24% of the total variance (first = 26.91%, second = 11.70%, and third = 6.63%) after the rotation. On the other hand, common variance explained for all the items by the three factors ranged between 33% and 63%. The factors established following the analysis were labeled holistic view, self-acceptance, and self-understanding based on the theoretical grounds and the contents of the items.

Table 1. Results Concerning Principal Components After Direct Oblimin Rotation of Insight Scale for Nonclinical University Students With 20 Items.

		Factor Load Values After Direct Oblimin Rotation		
Item	Common Factor Variance	F1	F2	F3
32	.53	.73	.16	.32
47	.51	.71	.10	.35
31	.45	.67	.16	.32
43	.48	.66	.00	.38
37	.44	.66	.18	.32
30	.47	.66	.17	.45
52	.37	.58	.26	.32
3	.51	.05	.69	.18
4	.44	.13	.66	.09
42	.45	.04	.61	.21
2	.35	.23	.57	.14
19	.33	.30	.53	.17
54	.35	.15	.52	.09
55	.39	.34	.52	.36
24	.63	.43	.08	.79
23	.58	.32	.08	.76
22	.50	.34	.00	.70
25	.41	.40	.03	.61
1	.45	.39	.35	.60
56	.42	.40	.32	.59

Note. Explained variance: total, 45.24%; first factor, 26.91%; second factor, 11.70%; third factor, 6.63%.

Table 2. The Results of the *t* Test Related to the Insight Levels of Participants According to Gender.

	Gender	N	M	SD	Significance
Total	Female	245	75.75	7.94	.33
	Male	141	74.82	9.84	.36
Holistic view	Female	253	26.20	3.96	.55
	Male	151	26.46	4.41	.56
Self-acceptance	Female	256	24.54	3.23	.02*
	Male	155	23.71	3.74	.02*
Self-understanding	Female	257	24.95	4.06	.51
	Male	152	24.68	4.08	.51

*$p < .05$.

The MAAS (Ozyesil et al., 2011) and SCS (Deniz et al., 2008) were employed with 112 university students to assess the concurrent validity of ISNUS. As expected, ISNUS was significantly and positively associated with the Turkish versions of the MAAS ($r = .64$, $p < .01$) and SCS ($r = .49$, $p < .05$).

It was also examined whether there is a difference of insight levels of participants according to gender. The results indicated that there was no difference between male and female insight levels for both the subdimensions and the entire scale. The relevant results are given in Table 2.

Confirmatory Factor Analysis

CFA was carried out to check if the three-factor structure emerging after EFA was confirmed or not. This analysis was administered to Sample 6. The KMO value obtained was .87, which means that the sample is large enough.

Initial analysis yielded values showing a perfect fit to the data, $\chi^2/df = 1.94$ as mentioned by Kline (2005), and a good one with RMSEA = .059 and standardized root mean residual (SRMR) = .064 as mentioned by Hu and Bentler (1995) and Yilmaz and Celik (2009). However, a weak fit to the data (comparative fit index 'CFI' = .88 and GFI = .89) was concluded (Westen & Gore, 2006). Initial analyses underlined a need to modify Items 9 and 13 because both items were identified to have high error variance (.93 for Item 9; .90 for Item 13). However, both items revealed meaningful *t* values of .001 as well. In addition, EFA produced high factor load values for these items (.64 for Item 9, and .62 for Item 13). As a result, both items were kept in the scale. Furthermore, when one or both items were excluded from

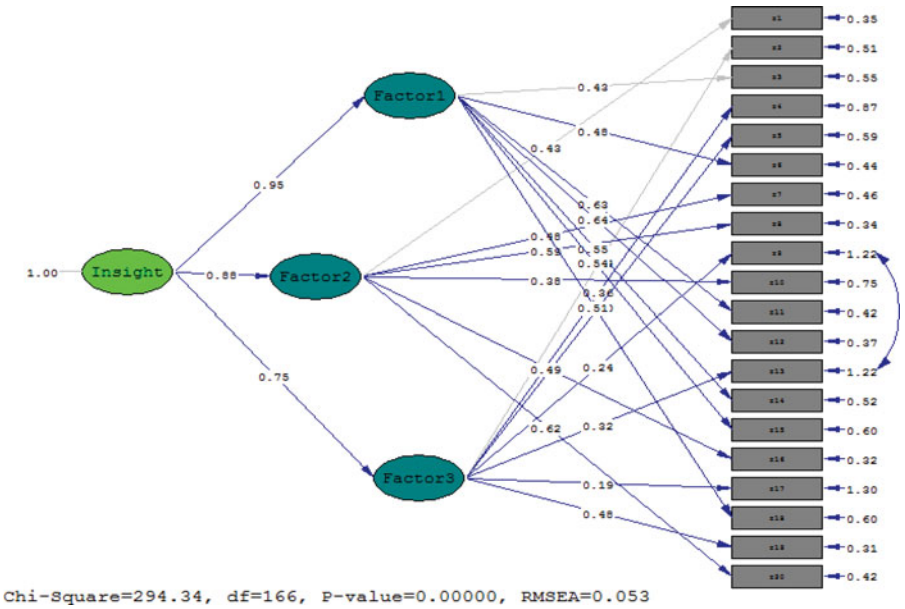

Figure 2. Results of confirmatory factor analysis. *Note*. RMSEA = root mean square error of approximation.

the scale, there was a deterioration in the structure of the scale. Figure 2 reports the results of CFA for the three-factor scale.

As Figure 2 shows, after the single modification, $\chi^2/\underline{df}$ ratio, RMSEA value, and SRMR value of the three-factor scale are 1.77, .053, and .059, respectively. In addition, CFI and GFI values were calculated as .90. After the modification, the fit indexes show that the scale's three-dimensional structure was confirmed.

Reliability Analysis

First, Cronbach's alpha coefficient was calculated for both the subdimensions and the entire scale; the coefficient for the entire scale is .84 and those for the subdimensions are .80, .69, and .78, respectively, for holistic view, self-acceptance, and self-understanding. Second, test–retest reliability of ISNUS was determined by applying the scale to 53 university students (Sample 7) twice within a 6-week interval. There are two main reasons for the adoption of a 6-week interval between the two applications. First, insight is a variable that shows change over a long period. The other reason is to test whether the scale makes stable measurement based on time (Buyukozturk, 2010). As expected, the result of this test pointed to a positive, meaningful, and high-level correlation ($r = .84$, $p < .01$) between the two applications.

Third, a data set obtained from 421 university students (Sample 3) was used to establish the distinctiveness of the items in the scale. For this purpose, first a highest and a lowest 27% group were formed based on the total scores on the scale; then, each item's points that these groups took were compared through *t* test. In this test a difference at the .05 or .01 level between the average scores of the two groups shows that the groups differ significantly from each other (Cokluk et al., 2010). As a result, the difference between the average scores of these groups was calculated to be meaningful at a level of .01. Fourth, the measuring strength of each item was identified by item analysis based on the correlations. This analysis indicated that Item 54 of the scale had a .15 item–total correlation, whereas all the other items' item–total correlations were either close to or higher than .30. Finally, a positive and meaningful correlation was concluded between the total score of the scale and its first, second, and third factors with values of .82, .65, and .76, respectively.

Discussion

Results of EFA show that the scale could explain 45% of the total variance. Considering the limits of 40% to 60% to be sufficient for the explained variance in multiple-factor designs (Buyukozturk, 2010), the ratio for this study is within acceptable limits. On the other hand, item–total correlations of the 19 items in the scale are either close to or higher than .30, and only the Item 54 item–total correlation is .15. Although having a low correlation, this item reads, "I conscientiously ignore my personality traits that other people find repulsive," which is strongly underlined during the semistructured interviews conducted about insight. At the same time, this item is included in the self-acceptance subdimension, and it has very similar content to the other items in this subdimension. Based on the fact that only items with an item–total correlation value of .30 or higher are distinctive and therefore should be included in a scale (Cokluk et al., 2010; Field, 2005), one can conclude that the ISNUS has a strong distinctive power, except for Item 54.

Internal consistency studies of the scale revealed that the scale has a positive meaningful relation with its first, second, and third subdimensions (.82, .76, and .65, respectively). These findings prove that the scale is meaningful as a whole and the subdimensions are also relatively independent (Hovardaoglu & Sezgin, 1998). In other words, each subdimension is independent from the others and they all serve for the entire scale. In addition, concurrent validity analysis revealed correlation coefficients pointing to a high external validity. In these analyses, the ISNUS was determined to have an expected positive correlation of .64 and .49 with the MAAS and SCS, respectively. All these correlation coefficients mean that the ISNUS represents a quality universe similar to those of earlier scales, and in the meantime, it is independent from the predecessor scales. As a matter of fact, these correlations indicate a level of relation within acceptable limits.

The results of a CFA conducted on 272 university students also yielded supportive findings for those of EFA. In these results, the values of CFI (.88) and GFI (.89) compatibility indexes were determined to be weak prior to modifications mentioned by Westen and Gore (2006). Following the modification between Items 9 and 13, χ^2/df rate for the three-factor scale model regressed to 1.77, and RMSEA (.053) and SRMR (.059) values improved. Moreover, CFI and GFI values of the model increased beyond .90 after the modification. According to some researchers, these indexes display good compatibility (Cokluk et al., 2010; Westen & Gore, 2006), although according to others, they do not provide information on the reasons why the model fit the data poorly (Brown, 2014). Furthermore, these scores were obtained after modification between Items 9 and 13. Item 9 ("I feel obliged to live with my problems") and Item 13 ("I panic when things go sideways") within the self-acceptance subdimension are different indicators of insight theoretically. Actually, self-acceptance, which is a sign of insight, requires that the individual accepts his or her problems and struggles with those problems (Egan, 1990). It has been stated that insight is related to well-being rather than anxiety or panic (Fleckhammer, 2004; Lyke, 2009). When the content of Items 9 and 13 is examined, it can be seen that the content of these two items might be related to other variables such as anxiety or hopelessness in addition to self-acceptance. Therefore, the participants might have given similar responses to the items. In fact, the results of modification show that there is a covariance between residuals. In addition, when one or both of the items are excluded from the scale, the fit indexes are worse and the structure of the scale deteriorates. As a result, it was decided that the model should remain as it was.

Data obtained after reliability analyses proved that the scale had a high internal consistency both as a whole scale and across all subdimensions. Generally, a value of .70 is considered enough for a reliability coefficient (Buyukozturk, 2010). Repeated analyses through exclusion of each item from the scale one by one did not yield a higher internal consistency coefficient, which meant that all items in the scale contributed to the total variance and that all should be kept in the scale. Furthermore, the ISNUS was concluded to conduct consistent and reliable assessments based on the correlation coefficient between two applications within a 6-week interval.

The ISNUS developed within the scope of this research bears some advantages over the instruments in the literature due to its relevant psychometric findings and content. First, the ISNUS makes it possible to work with nonclinical university students compared to those others in the literature (Beck et al., 2004; Grand et al., 2002). Another advantage is that the ISNUS has been developed within the culture to which it is directly related. For instance, adapted to Turkish by Ozyesil et al. (2011), the MAAS (Brown & Ryan, 2003) was developed for a culture with remarkable individualistic qualities, and then it was adapted to Turkish culture, which has both individualistic and collective qualities. One other advantage of the ISNUS regards its multiple-factor structure, which makes it more practical. For example, the MAAS (Brown & Ryan, 2003) reveals information about individuals' general tendency concerning their instantaneous conscientious awareness due to its single-dimension structure. Yet, the ISNUS collects information about the participants' present, past, and future experiences through items such as "I try to figure out the emotion that I feel," "I build connections between what I lived in the past and what I'm going through now," and "I first think about the possible consequences before I act." One last advantage of the scale is that a participant can receive one overall score and scores from the three subdimensions as well, which provides the opportunity to use each of the subdimensions as a scale on their own. On the other hand, there are important differences between insight and some related concepts as self-awareness, self-understanding, and self-esteem. Although insight is associated with these concepts (Creed & Funder, 1998; Fleckhammer, 2004; Markova & Berrios, 2011; Patterson & Welfel, 2000; Silvia & Phillips, 2011) none of them are comprehensive enough to cover insight. Just the opposite: It can be said that insight covers these concepts. Besides, each of the subdimensions of the scale is associated with the others and all subdimensions together represent the whole. Therefore, the information obtained from the ISNUS will give some information about all of these concepts. The ISNUS has been developed as a 5-point Likert type scale, on the basis that insight is a continuous variable and the 5-point ranking is frequently used in this type of scale. The scale is intended to measure the degree of insight, not to reveal the presence or absence of it.

Conclusion

In this study, the ISNUS that has been developed serves a significant function within both theoretical and practical grounds of psychological counseling and psychotherapy. It is possible to state that the study has revealed some crucial and empirical data concerning structural features of insight, which has a very abstract and interwoven structure with many psychological patterns (Akdogan & Turkum, 2012; Harrington & Loffredo, 2011; Lyke, 2009; Markova & Berrios, 2011). These conclusions are better interpreted through examination of three subdimensions of the scale. For instance, item contents of some items within the holistic view subdimension, such as "I think hard about different standpoints regarding the present situation I am in," and "I inspect the emerging processes of the things that happen to me," show that one aspect of insight is directly related with analyzing an individual's situation from all angles within its authentic context. A high level of insight as an indicator of well-being has to include cognitive, affective, and operational aspects of an individual's self-awareness (Carkhuff, 2000; Egan, 1990). Meanwhile, insight does not only cover awareness of an individual's life, but also the awareness of social context (Creed & Funder, 1998; Cuceloglu, 1991; Hamachek, 2000).

Similarly, the second subdimension of the scale, self-acceptance, can be considered a new finding about insight. Item contents such as "I conscientiously ignore my personality traits that other people find repulsive," and "I am open to all kinds of criticisms" mean that insight does not only require seeing and accepting one's positive aspects, but also the negative ones. Indeed, insight is a predictor for both well-being and unhappiness (Fleckhammer, 2004). Another noteworthy point about this subdimension is that insight has another aspect regarding social interaction as well. In fact, insight does not only entail developing awareness about one's internal experiences, but also about the relations one has with others (Creed & Funder, 1998; Hamachek, 2000). In conclusion, this research produced some empirical bases for some of the theoretical definitions of insight, such as looking at oneself and the circumstances from a broader angle, understanding oneself with a conscientious effort, and accepting oneself with both positive and negative traits as well as offering new data sets.

Finally, contents of the items included in the self-understanding subdimension of the scale such as "I build connections between what I lived in the past and what I'm going through now," and "I try to figure out the emotion that I feel" indicate that one aspect of insight regards an individual's efforts to understand oneself. This finding is also consistent with theoretical explanations (Carkhuff, 2000; Morin, 2011). In fact, definitions of insight underline the endeavor an individual exerts to make discoveries concerning one's experiences (Patterson & Welfel, 2000), to be conscious (Eisenberg & Delaney, 1998), and to make self-interpretations (Kolk, 1998). All these make it clear that insight is highly related with efforts of self-understanding.

Limitations

The ISNUS is not free from some limitations, although it is a suitable tool for the culture for which it has been developed to measure levels of insight that nonclinical university students have. One of these limitations is that the scale has been developed with only the participation of university students, so it is not appropriate to use with other segments of the population. Future studies can question the usability of the scale with adolescents and the young who are not university students. The fact that the scale has not been tested in terms of its prediction power for various psychological problems should be noted as another limitation.

In this study, a modification was conducted to improve the fit indexes between Item 9 and Item 13. That the last χ^2 value obtained after the modification was not significantly lower than the first χ^2 value is considered to mean that the modification has not affected the model (Sumer, 2000). In this study, the last χ^2 value (322.04) obtained after the modification was not lower than the first χ^2 value (294.34). Regarding this result, it can be said that the conducted modification has not affected the model dramatically. Although theoretically the content of Items 9 and 13 is important and necessary, in this study these items do not seem to be working properly. This could be attributable to the content of the two items possibly being related to other variables, such as anxiety or hopelessness, besides self-acceptance. The similarity

of item contents might have caused participants to give similar responses. Therefore, the study could be repeated with a change in the form of statement of those two items. On the other hand, the need for modification in this study might be related to the sample. In this sense, the model can be replicated with different samples.

Suggestions for Future Studies

Findings of this article indicate that the ISNUS can be employed as an assessment tool for university students without a specific psychopathological condition. In this sense, this scale can be used in survey studies designed to determine developmental needs of university students; to configure preventive and supportive counseling and therapeutic psychological help services; in empirical studies aiming to improve various personality traits; for the formation of psychoeducational group programs; and to measure university students' psychological experiences concerning insight. In addition, this scale can be employed to depict mediator and predictive functions of insight for other psychological structures. Also the scale can be translated to other languages and used in non-Turkish populations. In this study, the EFA techniques employed overestimated the number of latent factors. However, parallel analysis could include the recommended EFA variable selection in future research.

Notes on Contributors

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