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CONFERENCE PROCEEDINGS

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The Adaptation Study of the Interpersonal Needs (INQ-15) into Turkish

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Abstract

Problem statement: For a long time, scholars have struggled to comprehend why people engage in suicidal behavior. The Interpersonal Theory of Suicide is one of the most well-known contemporary explanations for suicidal behavior. The Interpersonal Needs Questionnaire was created to assess people's suicidal risks in two dimensions: perceived burdensomeness and thwarted belongingness.

Purpose of the study: The current study aimed to examine the psychometric properties of the Turkish Interpersonal Needs Questionnaire (INQ-15) in a sample of 435 university students.

Method: Confirmatory factor analysis (CFA) was used to evaluate the structural validity of the Turkish INQ-15.

Findings and Results: The results of CFA showed that the Turkish INQ-15 has a two-factor structure, validating the original scale's dimensions' factor structure. Turkish INQ-15 has good internal consistency reliability, according to Cronbach alpha and McDonald's Omega coefficients. A multigroup CFA on gender validated the measurement invariance in four phases. Turkish INQ-15 produced a strong negative association with the Anxiety Scale, indicating that as our participants' perceived burdensomeness and thwarted belongingness levels increase, their anxiety levels increase.

Conclusion: According to our findings, the INQ-15 is a valid and reliable tool for assessing interpersonal needs concerning suicidal risks amongst Turkish university students.

Anahtar Kelimeler: *Perceived burdensomeness, Thwarted belongingness, Interpersonal needs, Suicidal risk, Confirmative factor analysis*

Introduction

The effort to understand why people are involved in suicidal behavior has been a longstanding challenge for researchers and theorists. One of the prominent current approaches to explaining suicidal acts is the Interpersonal Theory of Suicide (Joiner, 2005). Theory refers to two fundamental processes that play a crucial part in the emergence of suicidal behaviors, and gathers these two processes under the term of *interpersonal needs* (Joiner, 2005; Van Orden et al., 2010): The first is the perception that one has become a burden to others and is called *perceived burdensomeness (PB)*. The second process emerges with the loss of the sense of belonging, especially in close social relationships, and is defined as *thwarted belongingness*

(TB). The interpersonal theory argues that the difficulties experienced by the individuals in these two areas of need alone will not be sufficient for the involvement in suicidal behaviors. The main risk in the emergence of suicidal behavior occurs together with the *acquired capability* for suicide. Moreover, the theory also offers four hypotheses that specify how these concepts relate to one another. (Van Orden et al., 2010): (1) passive thoughts of suicide might be brought on by feelings as though one doesn't belong to others and feeling burdened. (2) the simultaneous existence of PB and TB is direct and sufficient to trigger active suicidal thoughts. (3) the circumstance in which suicidal thoughts change into suicidal purpose is the coexistence of suicidal desire and diminished anxiety of death. (4) Severe suicidal behavior is most likely to result from a lack of belonging to others (TB), feeling burdened (PB) and despairing about both, having less dread of suicide, and having a higher capacity for bodily suffering. The recent literature on Joiner's Theory indicated that both dimensions significantly explain variance in suicidal ideations, interpersonal trauma (Poindexter et al., 2022), social anxiety disorders (Chung et al., 2022), depression (Shim et al., 2022). Researchers examined the theory and Interpersonal Needs Questionnaire (INQ) in different cultures of German (Hallensleben et al., 2016), Spanish (Canal-Rivero, 2022), and Chinese (Zhang et al., 2013). With increasing attention of researchers to the theory, the INQ was developed (Van Orden et al., 2012) to evaluate individuals' suicidal risks two dimensionally: PB and TB. This study aims to adapt the INQ into Turkish and examine its psychometric properties. Although the INQ has available in a variety of item numbers, it is stated that the ten and 15-item versions have the most robust psychometric properties (Hill et al., 2015). The 10-item version of the INQ was previously adapted into Turkish (Eskin et al., 2020). However, the authors only investigated the scale's factor structure through exploratory factor analyses (EFA). It was revealed that internal consistency reliability coefficient was .90 for PB, while the coefficient was 0.79 for TB. This current study aims to examine the psychometric properties of the 15-item version of the INQ-15 (Van Orden et al., 2012) in Turkish via confirmatory factor analysis (CFA). There are also relatively few tools available for the Turkish community that researchers and practitioners may use to assess interpersonal needs and suicidal risks of individuals. We hypothesized that Turkish INQ-15 would assist in determining the suicidal risk by taking into account people's interpersonal needs. This study's goal is to translate the INQ-15 into Turkish and investigate its psychometric properties.

Method

Research Design

The study's objective was to analyze the Turkish INQ-15's psychometric properties among a group of undergraduate students. Although the current study was carried out as correlational (quantitative) research (Fraenkel et al., 2012), more sophisticated correlational approaches may be needed in further correlational studies, such as structural equation modeling (SEM). confirmatory factor analysis (CFA) is a statistical technique provides the “observed relationships among a group of indicators with a smaller set of latent variables structures” (Brown & Moore, 2012, p.2), as a part of SEM. To better reflect the study's overall concept, which aims to support the INQ's original factor structure in a Turkish sample, CFA was used.

Research Sampling

The study sample consisted of 435 university students (304 females, 69.89%; 130 males, 29.89%, one unspecified, 0.22%) studying at Ordu University. The participants' average age was 21.37 (SD=3.01), and their age range was between 18 and 40 years. While 146 participants (33.56%) lived in the same city with their families, 287 participants (65.98%; two unspecified, 0.46%) stated that they lived in different cities with their families. Two hundred seventy-four participants (62.99%) live with their roommates in the dormitory or residences. One hundred twenty-five participants (28.74%) live with their families. Twenty-one participants (4.83%) live alone. Nine participants (2.07%) live with their spouses/partners, and four participants (0.92%; two unspecified 0.46%) stated that they live with their relatives.

Instruments

Interpersonal Needs Questionnaire (INQ-15; Van Orden et al., 2012)

The scale measures interpersonal needs with two dimensions of PB and TB with fifteen items involving 7-point Likert type scale. The INQ-15 was driven from the original version of INQ-25 (Van Orden et al., 2008), which the original version produced .89 Cronbach Alpha coefficient for PB and .85 Cronbach Alpha coefficient for TB. In INQ-15, the subscale of PB consists of 6 items. The subscale of TB consists of 9 items. Scores range from six to forty-two for PB, and from nine to sixty-three for TB. Greater PB and TB are reflected by higher scores.

Anxiety Subscale of Brief Symptom Inventory (Derogatis, 1992).

The 53 items of the Brief Symptom Inventory, which measures psychological symptoms, are answered on a five-point Likert-type scale. The scale is composed of five factors was translated

into Turkish by Şahin and Durak (1994). For the anxiety subscale, the Cronbach's Alpha value was .87 in the original study. The anxiety subscale consists of 13 items, with values ranging from 0 to 52; higher scores reflect greater anxiety. In the current investigation, the scale's Cronbach's Alpha coefficient was .90.

Demographic Form

A study-focused information form was created by researchers that included questioning the participants' demographics (e.g., living with families in the same city or not).

Procedure

The Institutional Review Board of Ordu University's Social and Human Sciences Ethics Committee granted us permission to conduct our research ethically (approval number: 2021-200). The *INQ-15* (Van Orden et al., 2012), *Anxiety Subscale* of Brief Symptom Inventory (Şahin & Durak, 1994), and the *Demographic Form* were utilized to obtain the study's data set. We have chosen the convenience sampling method to create the study's sample. We exclusively used Google Forms to collect data. It was expected that our participants' experiences, feelings, or ideas regarding their interpersonal requirements would be more accurately conveyed by answering the questions anonymously. Participants would feel more at ease answering questions using the online data collection method. We provided details about the study's objectives, including the coordinator, its scope, and the typical response time, on the cover page of the internet survey. The participants were then asked for their approval of a consent form. The data was collected in several classroom settings, after researchers announced information about the study. After obtaining consent to translate the INQ (to Turkish) from the correspondence author, two researchers with doctorates in counseling and guidance translated the scale items from English to Turkish. The final scale items in Turkish were created by the researchers. The standard of being above .90 in S-CVI/Ave (the average of the I-CVI scores recorded for each scale item) was considered when establishing the content validity (Polit & Beck, 2006). In our investigation, we discovered that, as judged by thirteen experts, the S-CVI/Ave values for PB and TB were 0.97 and 0.94, respectively.

Data Analysis

Using SPSS 22 (IBM Corp. Released, 2013) and JASP Team (2019), we analyzed preliminary analysis (e.g., data screening, descriptive statistics, assumptions), reliability evidence, bivariate

correlations (for the convergent validity), and a multigroup CFA (for measurement invariance) prior to the CFA. We preferred the Maximum likelihood estimate (MLE) in CFA to verify the factor structure of Turkish INQ in AMOS 24. (Arbuckle, 2016).

Results

Data Screening and Assumptions

Since responding to every item on the online survey form was mandatory, the data included no missing information. The sample size ($n=435$) complied with Kline's (2011) recommendation that there should be 200 cases for the CFA to have sufficient power. The items with the highest skewness and kurtosis values were item 5 (2.81 and 8.21), item 4 (2.25 and 4.83), and item 6 (1.93 and 3.08). The remaining items had highest skewness and kurtosis values of 1.81 and 2.61, respectively, as shown in Table 1. We took Kline's (2011) recommendation that values under three be regarded as normal as the standard for univariate normality. Due to the content of items 4 (These days, I think my death would be a relief to the people in my life), 5 (These days, I think the people in my life wish they could be rid of me) and 6 (These days, I think I make things worse for the people in my life), which looks at an uncommon scenario for most participants, we assumed that items were open to outliers and had a value that exceeded suggested kurtosis. These items seem to be the most salient statements regarding participants' opinions on PB that their death will be a better option for significant others. The data did not conform to the multivariate normal distribution, as shown by Mardia's (1985) coefficient (386.68, $p<0.001$; multivariate kurtosis). As a result, we used Bootstrapping (Byrne, 2010) as a better method to deal with multivariate non-normality. When assessing Mahalanobis distances, there were only three cases of multivariate outliers in the data. In light of Tabachnick and Fidell's (2013) recommendations, "Mahalanobis distance can either mask a real outlier or swamp a normal case" (*p.* 108), we chose to keep these cases. The assumptions of multicollinearity and linearity were also satisfied.

Table 1*Descriptive Statistic for Individual Items of Turkish INQ-15*

	N	Min.	Max.	M	SD	Skewness	Kurtosis	SMC
Item1	435	1	7	2.01	1.42	1.51	1.63	.65
Item2	435	1	7	2.15	1.53	1.46	1.47	.62
Item3	435	1	7	1.95	1.55	1.81	2.61	.55
Item4	435	1	7	1.70	1.31	2.24	4.83	.83
Item5	435	1	7	1.50	1.12	2.81	8.21	.74
Item6	435	1	7	1.87	1.48	1.93	3.08	.61
Item7	435	1	7	3.34	1.84	0.53	-0.67	.27
Item8	435	1	7	3.02	1.77	0.74	-0.31	.49
Item9	435	1	7	3.10	1.88	0.64	-0.66	.13
Item10	435	1	7	2.42	1.65	1.04	0.14	.50
Item11	435	1	7	3.28	1.95	0.56	-0.85	.29
Item12	435	1	7	3.24	1.95	0.53	-0.89	.24
Item13	435	1	7	2.69	1.79	0.90	-0.28	.62
Item14	435	1	7	3.43	1.81	0.33	-0.87	.58
Item15	435	1	7	3.10	1.89	0.51	-0.88	.57

Note. M=Mean, SD=Standard Deviation, Min=Minimum,
Max=Maximum, SMC=Squared Multiple Correlation in CFA

Confirmatory Factor Analyses (CFA)

Two-factors Turkish INQ-15 indicated a mediocre model fit (see Table 2). Chi-Square fit statistic was significant $\chi^2 (86, N = 435) = 320.89, p = .000$. The normed chi-square value (χ^2/df ratio = 3.73) was lower than the suggested (Schumacker & Lomax, 2004) value of 5. CFI = .94 was higher than recommended value of $CFI \geq .93$ (Byrne, 2010). TLI = .92 was higher than the recommended value of $TLI \geq .90$ (Bentler & Bonett, 1980). SRMR = .08 produced an acceptable fit within the $.05 \leq SRMR \leq .10$ (Brown & Cudeck, 1993). RMSEA = .079 (90% CI = .070-.089) produced acceptable fit value of $.05 \leq RMSEA \leq .08$ (Brown & Cudeck, 1993). Factor loadings of the Turkish INQ-15's items ranged between 0.36 and 0.91 in the second model (See Figure 1). This model had three residual covariances between item1 and item2 (PB), item7 and item8, item11 and item12 (TB), following the suggestions of modification indices.

Table 2

Model Fit Indices of Confirmatory Factor Analyses

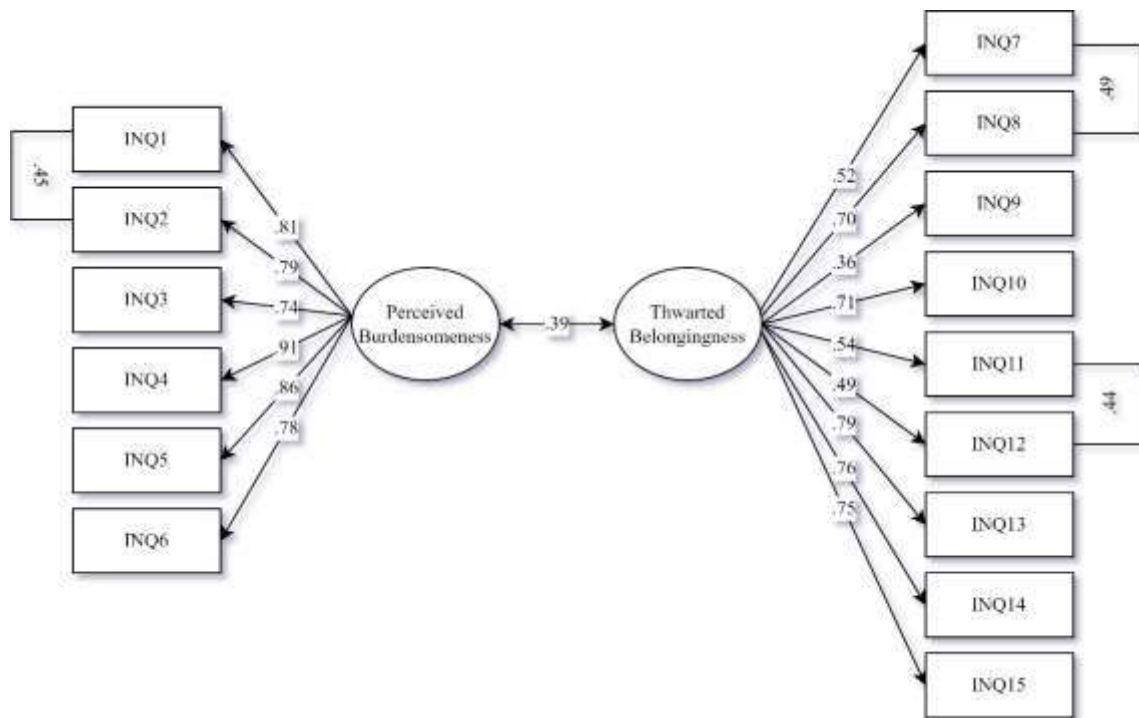
	χ^2/df	CFI	TLI	SRMR	RMSEA
CFA	3.73	.93	.92	.08	0.079 (90% CI = 0.070-0.089)

Measurement Invariance

Using four stages—configurable, metric, scalar, and strict—we examined Turkish INQ-15's measurement invariance on gender (Milfont & Fischer, 2010) using multigroup CFA in JASP Team (2019). We investigated the Turkish INQ-15's invariance with Root Mean Square Error of Approximation (RMSEA) and Comparative Fit Indexes (CFI). We concluded that the measurement invariance for the Turkish INQ-15 was satisfied because variances between groups (women/men) were not more than -0.01 and 0.01 (Cheung & Rensvold, 2002).

Figure 1

CFA Analysis of Turkish Interpersonal Needs Questionnaire (INQ-15)



Reliability

Cronbach's alpha and McDonald's Omega coefficients were .92 for PB and .86 for TB revealing a strong internal consistency for Turkish INQ-15.

Convergent Validity

We had a significant positive association between anxiety and PB ($r = .39, p < .001$) and TB ($r = .39, p < .001$). In other words, as participants' PB and TB levels increase, their anxiety levels also increase.

Table 3

Measurement Invariance (Gender)

	Δ CFI	Δ RMSEA
Configural	.93	.08
Metric	.93	.08
Scalar	.92	.08
Strict	.92	.08

Discussion

Due to the scarcity of research on suicide in Turkey, our study sought the psychometric characteristics of the Turkish INQ-15, which was created to assess the interpersonal needs of individuals. Since the INQ-15 was initially created in the US, we primarily purposed to validate the scale for Turkish-speaking university students. The current investigation results demonstrated that the dimensional factor structure of the Turkish INQ-15 is consistent with the use of the original scale. The Turkish INQ-15's convergent validity studies revealed a substantial negative connection between anxiety, PB, and TB, pointing to the predicted direction of correlation between these scales. According to the current findings, the Turkish INQ-15's subdimensions have a high internal consistency measured by the Cronbach Alpha and McDonald's Omega coefficients. The results also showed that the Turkish INQ-15 provided measurement invariance in groups related to the gender variable involving four levels (i.e., configural, metric, scalar, and strict). In our assessment, Turkish INQ-15 demonstrated measurement invariance. We conclude that these results indicate the Turkish INQ-15 provides a valid assessment of university students' views on interpersonal needs, which are connected to their suicidal behaviors. The structural validity and reliability of the INQ-15 among Turkish university students are well supported by these findings. These results also contribute to the literature by suggesting that the psychometric properties of the Turkish INQ-15 for Turkish culture may increase the number of future studies that seek to understand the cross-cultural factors that influence university students' interpersonal needs and suicidal risks. Mental health

practitioners may also use Turkish INQ-15 to assess university students' interpersonal needs and suicidal tendencies to develop therapeutic interventions.

Conclusion

Our study showed that the Turkish INQ-15 is a highly valid and reliable instrument for determining the intensity of interpersonal needs in two dimensions of PB and TB, which researchers and mental health practitioners may use with confidence in their practice.

Limitations and Recommendations

We noticed limitations with the current investigation. The Turkish INQ-15's psychometric characteristics, including structural validity and internal consistency reliability, were the only focus of our research. We advise future research to keep the assurance of incremental validity and test-retest reliability. Self-report measures were used to gather the data for this investigation, although they have a number of limitations. Future research should use a variety of qualitative (like phenomenological) and quantitative (like dyadic CFA) data gathering methodologies. Our design was cross-sectional; however, we offer experimental and longitudinal techniques to draw conclusions on causality, including the Turkish INQ-15. Other limitations of the present study were the non-probabilistic convenience sampling and the sample's predominately female gender composition. We encourage using a more probabilistic and gender-balanced sample in future studies.

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