PSYCHOMETRIC PROPERTIES OF THE RESPONSIBILITY SCALE

SORUMLULUK ÖLÇEĞİ'NİN PSİKOMETRİK ÖZELLİKLERİNİN DEĞERLENDİRİLMESİ

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Abstract

This paper aims to develop a free-access reliable and valid scale measuring perceived personal responsibility and discuss its psychometric properties. In the literature responsibility has defined in different ways. Most of the research focus on its situation-dependency, but it is possible to find some limited research about personal responsibility. Within this context, two sets of data collected. The first data was for factor analysis and split half reliability. Second data was to study concurrent validity. Results revealed that the scale has three constructs, namely, emotional, cognitive, and behavioral factors. Both scale and the factors have good reliability and validity values.

Öz

Literatürde sorumluluk kavramı farklı şekillerde tanımlanmaktadır. Araştırmaların çoğu sorumluluğun duruma bağımlı oluşuna odaklanmaktadırlar ancak kişisel sorumluluk ile ilgili kısıtlı da olsa araştırma ile karşılaşmak mümkündür. Bu yazı, kişisel sorumluluk kavramını ölçmek amacıyla bir ölçek geliştirmek ve psikometrik özelliklerini değerlendirmektedir. Ayrıca ücretsiz erişim sağlayan bu ölçek ile diğer araştırmacıları teşvik edilmesi amaçlanmaktadır. Bu bağlamda iki set veri toplanmıştır. İlk veri seti, faktör analizi ve test - yarı test güvenilirliği içindir. İkinci data ise çakışmalı geçerlilik (concurrent validity) için kullanılmıştır. Sonuçlar, ölçeğin duygusal, bilişsel ve davranışsal olmak üzere sorumluluğun üç boyutlu olduğunu göstermiştir. Tüm ölçek ve faktörlerin geçerlilik ve güvenilirlik değerleri iyi olarak bulunmuştur.

1. Introduction

Each act has its subsequent consequences. The concept of the responsibility is defined as situation-dependent (Şirin 301), active side of morality (Glover 96; Linckona 77), prosocial (Linckona 77) and comprising of social abilities (Nelson et al 336; Chamberlin 204; Ellenburg 9) such as the recognition of one's own behavior or event (Glover 96), making choices, accepting subsequent consequences and effects of these choices (Popkin 1; Yavuzer 1; Hamilton 316), emotions leading to complete tasks or goals (Başaran 1; Berkowitz 429).

Personal responsibility is considered to be the responsibility of the person himself/herself and is examined in two parts, one is being the responsibility of one's own self and other is one's responsibility one's own body (Hamilton 316). Personal responsibility includes such things, feeling, individual thinking in a responsible

manner, efforts which makes one's self stronger, physical and emotional well-being, being responsible for their own choices and undertaking the consequences of these choices, not forcing other's boundaries with others and adopting respect-based communication. The person responsibilities such as gaining healthy identity towards himself, acquiring healthy valves, having healthy perception and evaluation methods and developing health interpersonal relationship (Nelson et al 336).

Theoretically responsibility has three dimensions, namely, cognition, emotion and behavior. When individuals feel responsible for their behaviors, they feel guilt, shame or self-directed anger. As dealing with these emotions, either may individuals deny and relabel the circumstances or they can appreciate and feel contentment. It was suggested that the key process is our cognitions upon the social role taking and feeling responsibility. It was stated that in face of stress individuals manifest self-reflectively examination but they do not evaluate that their reactions to a circumstance is a result of their limited cognitive perspective. In order to take responsibility, it was stated that individuals should accept their emotions; feel relieved from stepping back to frightening imagine of facing emotions; find peace, contentment and control over the circumstances; and then take a social role and responsibility. Although it is a quick sentence, it requires a self-discovery and affirmation (Chandler 1; cited in Montada, Filipp and Lerner 1).

It was mentioned that responsibility is closely related to emotional awareness and acceptance, dealing with emotions, having control over the situation and active role taking (Chandler 1; cited in Montada, Filipp and Lerner 1) and could be affected by cultural features (Sert 31). In the literature, it was seen that measures for responsibility were developed to assess specific to or dependent on settings or roles (Ryan et al 1; Wiebe et al. 532; Jaworski and Adamus 35; Köse and Gül 26; Başer and Kılınç 75; Öberseder et al 101; Cai et al 46). Even though the scale measuring responsibility is setting- or role-independent, limited number of items and/or subscale is directly related to the personal responsibility, and their focus is on only behavioral dimension (Filiz and Demirhan 51). However, none of them covered responsibility with emotional, cognitive and behavioral dimensions altogether and role- or setting-independently. In order to be able to assess the responsibility with these three dimensions altogether in adult participants, this study aims to develop a responsibility scale (RS) and determine reliability and validity statistics of the RS items based on relevant literature reviews and interviews.

2. Method

The purpose of the study is to describe the development of the RS, which is a new instrument that aims to cover subjective perception of responsibility in general. In order to generate items for the RS, interviews completed. Content analysis indicated that the frequently appearing participant responses were mostly in accordance with the literature. Then, two sets of data collected. The first data was for factor analysis and split half reliability (Internal consistency coefficient) of the RS. Second data was to study concurrent validity. Approval of the Institutional Ethics Board of Middle East Technical University and participant informed consents were obtained.

2.1. Participants

In the first study, a total of 270 individuals participated in the study. Two hundred seventeen (n=217) (80.4%) females and 53 (19.6%) males enrolled. The age of the subjects ranged from 18 to 52 years (M = 29.54, SD = 5.81). Socio-demographic information of the participants was presented in Table 1 in detail. Conveniently sampled participants were included the study. Though gender ratio was in favor of females, t test did not reveal any significant gender difference for the measures of total RS (t (268) = -.233, p > .05).

In the second study, 253 (75.3%) females and 83 (24.7%) males enrolled. The age of the subjects ranged from 18 to 52 years (M = 30.04, SD = 12.18). Socio-demographic information of the participants was presented in Table 2 in detail.

Conveniently sampled participants were included the study. Though gender ratio was in favor of females, t test was run across gender. Results revealed significant gender difference for the measure of the RS (t (334) = 2.441, p < .05). Since the t test result was significant, randomly chosen 83 female participants' responsibility total score was compared with 83 male participants' scores via t test. T test's result revealed that female participants (M = 3.31, SD = .34) have significantly higher scores than male participants (M = 2.97, SD = .49) (t(164) = 5.27, p < .001).

2.2. Procedure

Two studies were conducted in order to develop the RS, conduct factorial analyses and report reliability and validity statistics. In the first study the aim was to examine reliability statistics. The 34-item RS was administered via online survey with informed consent and brief explanation of the study in the first page.

Construction and revision phrases of the RS were described in following part in detail. The total administration time for the RS was approximately 5 minutes.

Data for validity was collected within a set of second data. After revision, described later, the RS was administered with an inventory. Instruments were presented in a randomized order so as to eliminate the effect of sequencing. The first page included informed consent and brief explanation of the study. To assess validity of RS measure, within a bunch of assessment tools. The Positive and Negative Affect Scale (PANAS) – guilt item, the Locus of Control Scale (LoC) and the Young Schema Questionnaire Short Form (YSQ SF) subscales were used. The total administration time for whole inventory was approximately 50 minutes.

a. Scale construction

In order to state the items for the RS, 4 people (one clinical psychologist, two psychiatrists and one lay person) were interviewed. According to their definition of responsibility and given examples, 8 factors comprising of 44 items were determined at first. The RS was constructed with 44 items addressing responsibility in the following areas: awareness (1) (e.g. "*Bir görev üstlendiğimde, kime karşı sorumlu olduğumu bilirim*"), reasoning (2) (e.g. "*Planlarımı kolaylıkla yerine getirebilirim*"), empathy (3) (e.g. "*Bana güvenen insanları hayal kırıklığına uğratmak istemem*"), satisfaction (4) (e.g. "*Sorumluluklarımı yerine getirmek beni mutlu eder*"), tolerance to anxiety (5) (e.g., *Zor bir iş karşısında kolaylıkla vazgeçerim*), flexibility (6) (e.g. "*Hata yaptığımda bundan ders çıkartmaya çalışırım*"), coping skills (7) (e.g. "*Üzerime düşen bir görevi yerine getirmediğimde, bunu saklamaya çalışırım*") and feedbacks from others (8) (e.g. "*Başkalarının benim hakkımda ne düşündüklerini önemserim*") in different roles such as gender, social and personal. Each item was rated on a 5-Point-Likert-type scale ranging from never (0) to always (4). Five items were reversed. A pilot study with 5 conveniently sampled participants was conducted to prevent confusion and ambiguity. Statements were refined and 10 items were excluded. After that, two studies yielded the changes described later. The RS was revised, and current version of the RS was developed.

a. *Instruments*

i. Socio-demographic form

Participants were given informed consent and socio-demographic form. The form aims to describe the demographic information of the participants. It covers gender, age, educational and socio-economic status.

ii. The Measures of Positive and Negative Affect (PANAS)

PANAS was developed by Watson, Clark, and Telegen (1063) to measure general tendencies toward positive affect (PA; the extent to which a person is attentive, alert, excited, enthusiastic, inspired, proud, determined, strong and active) and negative affect (NA; the extent to which a person is distressed, upset, hostile, irritable, scared, afraid, ashamed, guilty, nervous and jittery). Different scores can be obtained for different timeframes (at the moment, today, within the past few days or year, in general). Participants were asked to indicate "*how you feel in general*" on a 1 ("*very slightly*") to 5 ("*extremely*") scale on 20 items. Total scores for PA and NA subscales ranged from 10 to 50. The subscales' validity and coefficient alphas were in the range of .86 to .90 for PA and .84 to .87 for NA.

Gençöz (19) adapted PANAS to Turkish population. Internal consistency coefficients were .83 for PA and .86 for NA. Test-retest reliability coefficients were .40 for PA and .54 for NA. Criterion validity statistics revealed that PA had negative correlation with the Beck Depression Inventory and the Beck Anxiety Inventory. NA had positive correlation with the Beck Depression Inventory and the Beck Anxiety Inventory. Cronbach's coefficients for PA and NA were found to be .85 and .86 for this sample.

Since responsibility may lead feelings of guilt, shame or self-directed anger (Chandler 1; cited in Montada, Filipp and Lerner 1), PANAS was chosen. Only the item measures quilt included in the statistical analysis.

iii. The Young Schema Questionnaire Short Form (YSQ SF)

YSQ SF was originally developed by Young and Brown (1) in order to assess early maladaptive schemata (cited in Soygüt, Karaosmanoğlu and Çakır 75). In original scale, participants were asked to evaluate early maladaptive schemata by rated on a 6-point Likert-type scale ranging from 1 ("*never or almost never*") to 6 ("*all of the time*") scale on 5 items composing each 16 factors (Young and Brown, 1). Total scores for subscales ranged from 5 to 30.

The Turkish form of the scale was adapted by Soygüt, Karaosmanoğlu, and Çakır (75). Turkish version of the scale comprised of 14 factors, namely, emotional deprivation, failure to achieve, negativity / pessimism, social isolation, emotional inhibition, enmeshment, approval seeking, insufficient self-control, self-sacrifice, abandonment, punitiveness, defectiveness, vulnerability to harm or illness and unrelenting standards / hypercriticalness. For test-retest reliability alpha

coefficients were found between the ranges of .66 and .82, and for the internal validity alpha coefficients range .63 to .80. Cronbach's coefficients for emotional deprivation, failure to achieve, negativity / pessimism, social isolation, emotional inhibition, enmeshment, approval seeking, insufficient self-control and discipline, self-sacrifice, abandonment, punitiveness, defectiveness, vulnerability to harm or illness and unrelenting standards / hypercriticalness were found to be .78, .84, .78, .81, .73, .86, .71, .72, .75, .78, .72, .84, .68, and .68 for this sample, respectively.

The personal responsibilities lead gaining healthy identity towards himself, acquiring healthy valves, having healthy perception and evaluation methods and developing health interpersonal relationship (Nelson et al 336). Early maladaptive schemata have a broad, pervasive theme or pattern; comprised of memories, emotions, cognitions, and bodily sensations; regarding oneself and one's relationships with others (Young, Klosko and Weishaar 1). Considering these two information, it was thought that YSQ SF could be an essential assessment tool.

iv. *The Internal- External Locus of Control Scale (LoC)*

LoC was originally developed by (Rotter 60). The scale aims to assess indivuduals' attributions to result of their acts, in other words internal-external locus of control. Participants were asked to evaluate their attributions by 29 dichotomous questions ("true" / "flase") including 6 filler-item which excluded from calculation. Total scores for LoC ranged between 0-23. Cronbach's alpha coefficient for total scale is .92.

Turkish version of the locus of control scale was adapted by (Dağ 77). The scale is rated by a 5-point Likert scale ranging from 1 ("very inappropriate") to 5 ("extremely appropriate"). Two subscales were concluded, namely internal locus of control (α = .75) and external locus of control (α = .78). High internal (α = .92) and test-retest reliability (α = .88) scores were reported for Turkish sample. Cronbach's coefficients for total scale was found to be .77 for this sample.

Since the responsibility is related to morality (Glover 96; Linckona 77), prosocial behavior (Linckona 77) and comprise of social abilities (Nelson et al 336; Chamberlin 204; Ellenburg 9) such as the recognition of one's own behavior or event (Glover 96), making choices, accepting subsequent consequences and effects of these choices (Popkin 1; Yavuzer 1; Hamilton 316) and emotions leading to complete tasks or goals (Başaran 1; Berkowitz 429), LoC was used to assess participants' attributions to consequences of their behaviors.

v. Statistical analyses

The purpose of this part is to describe the development of the RS, which is a new instrument that aims to cover subjective perception of responsibility in general. Both the internal reliability and split-half reliability of RS were established. Factor analysis used to determine validity.

In order to assess concurrent validity of RS and its subscales, correlation analysis were run. Correlation coefficients were calculated across RS total and the PANAS-guilt item, locus of control subscales and the Young Schema Questionnaire Short Form (YSQ SF) subscales.

vi. Additional information[1]

The study presented in this manuscript is part of the doctorate thesis of the first author.

3. Results

After the removal of outliers, analyses were conducted with the remaining participants. Missing data were replaced by the respective group mean.

a. Descriptive statistics and frequency analysis

A total of 270 participants included into the first study, which aim scale construction and factor analysis. Participants assessed in terms of gender, relationship status, education, occupation and place that lived in the longest time (Table 1). Frequency of the groups was compared by x^2 analysis of independence. Group frequencies were significantly different from each other across gender, relationship and occupation (p<.000). However, observed cell size for place that lived the longest time and grade school education cell size were below the expected cell criteria of 5. Therefore, their significance was not accepted valid (Table 1).

Table 1. Socio-demographic information of the participants in Study I

	n(%)	x^2	*p*
Gender		99.615	.000
Female	217 (80.4)		
Male	53 (19.6)		
Relationship status		67.274	.000
Single	96 (35.6)		
In a relationship	73 (27)		
Married	90 (33.3)		
Divorced	11 (4.1)		
Education		71.356	.000*
Grade school	0 (0)*		
High school	25 (9.3)		
University	116 (43)		
Graduate	129 (47.8)		
Occupation		102.059	.000
Employed	218 (80.7)		
Unemployed	52 (19.3)		
Place lived in the longest time		354.741	.000
Village	2 (.7)		
Town	19 (7)		
City	51 (18.9)		
Metropolitan	198 (73.3)		

Note. *since n<2, *p* value was invalid.

Participant's mean of age was 29.55 (SD = 5.81). T test revealed that there was no statistical difference between female (M = 29.30, SD = 5.81) and male (M = 30.55, SD = 5.71) participants in terms of age ($t(268) = -1.401$, $p > .05$).

Three hundred thirty-six (N=336) participants included into the second study. Similarly, to the first study, participants assessed in terms of gender, relationship status, education, occupation and place that lived in the longest time (Table 2). Frequency of the groups was compared by x^2 analysis of independence. Group frequencies were significantly different from each other across all variables (p = .000). Mean age of participants was 30.04 (SD = 12.18). T test revealed that there was a statistical difference between female (M = 28.17, SD = 11.09) and male (M = 35.76, SD = 13.60) participants in terms of age ($t(334) = -5.106$, $p > .001$).

Table 2. Socio-demographic information of the participants in the Study II

	n(%)	x^2	p
Gender		86.012	.000
Female	253 (75.3)		
Male	83 (24.7)		
Relationship status		177.595	.000
Single	159 (47.3)		
In a relationship	44 (13.1)		
Married	126 (37.5)		
Divorced	7 (2.1)		
Education		289.238	.000
Grade school	16 (4.8)		
High school	62 (18.5)		
University	216 (64.3)		
Graduate	42 (12.5)		
Occupation		108. 696	.000
Employed	189 (56.3)		
Unemployed	114 (33.9)		
Retired	33 (9.8)		
Place lived in the longest time		290.625	.000
Village	17 (5.1)		
Town	62 (18.5)		
City	257 (76.5)		

b. Factorial structure

In order to examine factor structure of RS, principal components analysis (PCA) was performed by using direct Oblimin (N=270). Kaiser-Meyer-Olkin measure of sampling adequacy was .86. Bartlett's test reveal at least one significant correlation with a significant p value (p=.000). According to item distribution, 10 factor-solutions were concluded with Eigen values of 7.40, 2.62, 1.69, 1.48, 1.39, 1.22, 1.20, 1.13, 1.12 and 1.08, respectively. Explained variance for these 10 factors was 21.76, 7.71, 4.98, 4.34, 4.09, 3.57, 3.51, 3.32, 3.31 and 3.16, respectively (Table 3). However, scree plots determined 2-factor-solution (Figure 1).

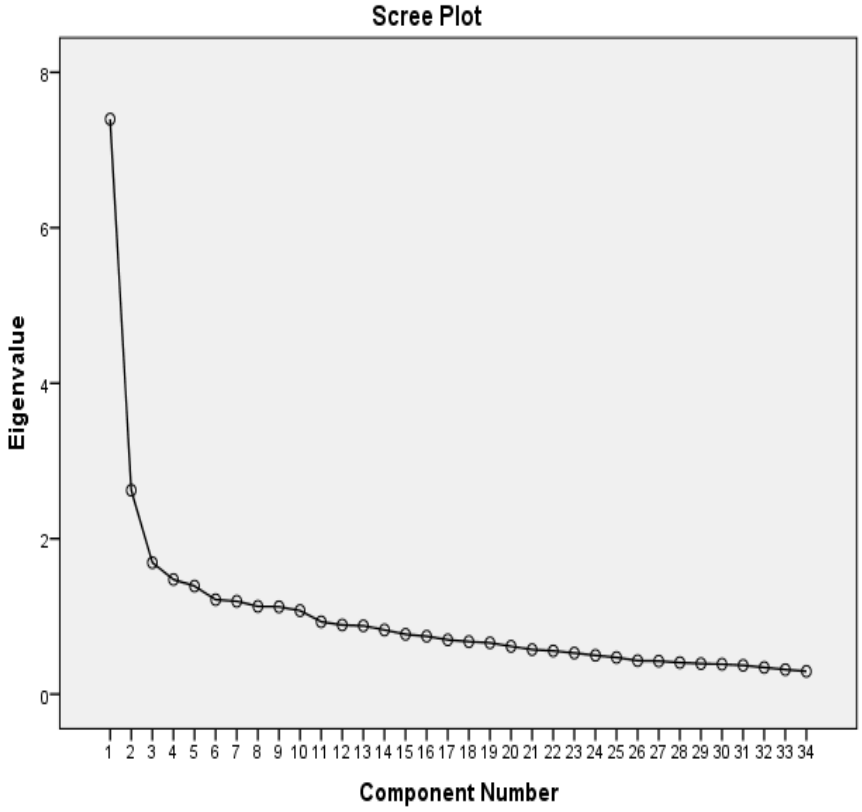

Figure 1. Scree plot for the first PCA

Monte Carlo PCA for parallel analysis revealed three significant Eigen values. Lastly, three variables or factors were contributing and predicting in a meaningful way when extracted negative correlations between variable and factor, cross loadings and factors with at least three loading variables. Therefore, PCA was repeated as forcing the variables into three factors. In the second PCA, while item 14 and item 16 did not load any factor, item 3, 4, 5, 10, 11, 12, 19 and 31 were negatively loaded to the factor 3 (Table 4). Therefore, 10 variables were excluded. Third PCA was run (Table 3).

Table 3. Summary table for PCA analyses

	PCA-1*				PCA-3**			
F	**Eigen values**	**% of variance**	**Cumulative variance %**	**Monte Carlo M (%)**	**Eigen values**	**% of variance**	**Cumulative variance %**	**Monte Carlo M (%)**
F1	7.40	21.76	21.76	1.72 (.181)	5.92	24.69	24.69	1.58 (1.66)
F2	2.62	7.71	29.47	1.63 (1.69)	2.16	9.00	33.69	1.48 (1.55)
F3	1.69	4.98	34.44	1.57 (1.63)	1.32	5.51	39.19	1.40 (1.46)
F4	1.48	4.33	38.78	1.50 (1.55)				
F5	1.39	4.09	42.87	1.45 (1.49)				
F6	1.22	3.57	46.44	1.39 (1.44)				
F7	1.20	3.51	49.96	1.35 (1.39)				
F8	1.13	3.32	53.28	1.31 (1.34)				
F9	1.12	3.31	56.58	1.26 (1.30)				
F10	1.08	3.16	59.75	1.22 (1.26)				

Note. F = Factors. * Variable size = 34, ** Variable size = 24.

Table 4. Factor loadings for the Responsibility Scale

Factor 1 (Emotional dimension) Variance % = 20.03, α = .84			**Factor 2 (Behavioral dimension)** Variance % = 13.46, α =.65			**Factor 3 (Cognitive dimension)** Variance % = 7.04, α = .54		
Item #	**Loading**	***r*****	**Item #**	**Loading**	***r***	**Item #**	**Loading**	***r***
1	.519	.519	**7**	.458	.450	**6**	.396	.411
2	.406	.456	**9***	.302	.156	**17***	.618	.268
8	.581	.457	**15***	.599	.324	**20**	.525	.092
13	.540	.263	**21***	.715	.366	**25**	.354	.369
18	.410	.522	**22**	.461	.124	**26**	.370	.490
24	.604	.493	**23***	.727	.217			
27	.469	.497	**30**	.493	.510			
28	.693	.635						
29	.721	.411						
32	.729	.465						
33	.507	.548						
34	.486	.370						

Note. * Reversed items, ** Item-total correlation coefficients.

Third and last PCA determined the final version of the RS's factor structure comprising of 24 items. Twelve items constituted the first factor called emotional dimension of responsibility (e.g. "*Üzerime düşenleri yerine getirmenin önemli olduğuna inanırım.*"; *"Bir görev üstlendiğimde, kime karşı sorumlu olduğumun farkındayımdır.*") and the alpha coefficient for the first factor was .84 (n = 12). The

second factor which was comprised of seven items (e.g." *Üzerime düşenleri yerine getirirken, becerilerimin farkındayımdır.*"; "*Üzerime düşenleri yerine getirirken, kısıtlılıklarımın farkındayımdır.*") and was named as behavioral dimension of responsibility (n = 7). The second factor has an alpha coefficient of .65. The third factor called cognitive dimension of responsibility was constituted by five items (e.g. "*Becerebileceğimi düşündüğüm bir işi, yapmaya çalışırım.*"; "*Kurallara uymakta zorluk çekmem.*") (n = 5). The alpha coefficient for the third factor was .54. Internal consistency for whole scale was .82.

Confirmatory Factor Analysis (CFA) with Varimax rotation was conducted to force the items on three factors concluded in PCA (N=336) (Figure 2).

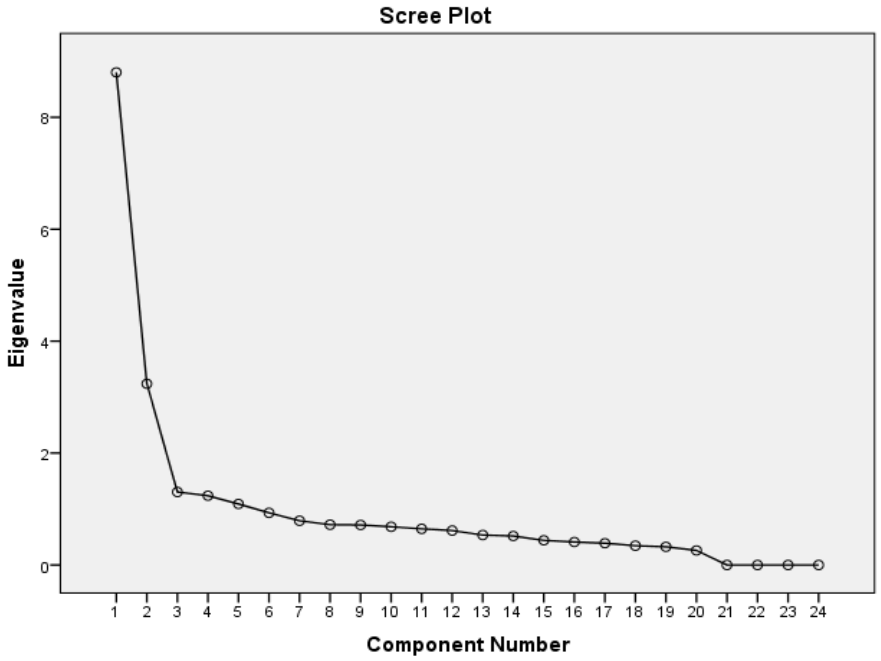

Figure 2. Scree plot for the CFA

These factors entitled "emotional", "behavioral" and "cognitive" dimensions of responsibility, respectively. The results revealed that three factors explained 55.6% of the variance and the item loadings were in the expected direction. The first factor, namely, emotional dimension of the responsibility included items that represents emotional reactions and coping styles regarding responsibility both as an individual and in interpersonal relationships (i. e., *Hata yaptığımda bundan ders almaya çalışırım; Bana güvenen insanları hala kırıklığına uğratmak istemem.*). The alpha coefficient for the first factor was .90 (n = 12). On the other hand, second factor, namely, behavioral dimension of the responsibility, included items that represents effort that individuals make to fulfill their responsibilities (i. e., *Grup çalışmalarına*

dâhil olmamaya çalışırım. - Reversed item). The alpha coefficient for the second factor was .81 (n = 7). Lastly, the third factor, namely, cognitive dimension of the responsibility, included items representing cognitions regarding self, relationships and future (i. e., *Gelecekte nasıl birisi olduğumu umursarım.*). The alpha coefficient for the third factor was .74 (n = 5) (Table 5). Internal consistency for whole scale was .90. The RS was added to the Appendix 1.

Table 5. Correlations between measures

	RS	**Ed**	**Bd**	**Cd**
PC	-.15*	-.14*	-.02	-.20
BC	-.03	-.01	-.11	.04
ME	-.24**	-.15*	-.30**	-.17*
BF	.09	.12*	-.04	.11
BW	-.26**	-.17*	-.32**	-.12*
PANAS-Q	-.27**	-.23**	-.19**	-.20**
ED	-.34**	-.26**	-.30**	-.24**
F	-.45**	-.34**	-.49**	-.25**
Pe	-.29**	-.19*	-.31**	-.20**
SI	-.29**	-.20**	-.33**	-.13*
EI	-.27**	-.20**	-.31**	-.12*
En	-.39**	-.31**	-.40**	-.23**
AS	-.05	.00	-.09	-.05
InSC	-.02	-.02	-.02	-.01
SS	.05	.13*	-.13*	.07
A	-.26**	-.19*	-.32**	-.10
Pu	.23**	.28**	.04	.18**
D	-.38**	-.32**	-.37**	-.20**
Harm	-.19*	-.13*	-.20**	-.13*
Stand	.11*	.07	.09	.12*

Note. RS = The Responsibility Scale, Ed = Emotional dimesnsion, Bd = Behavioral dimension, Cd = Cognitive dimension, PS = Personal control, BC = belief in chance, ME = Meaninglessness of the effortfulness, BF = belief in fate, BW = belief in an unjust world, PANAS-Q = guilt, ED = Emotional deprivation, F = failure to achieve, Pe = negativity / pessimissim, SI = social isolation, EI = emotional inhibition, En = enmeshment, AS = approval seeking, InSC = Insufficient self-control, SS = self-sacrifice, A = abandonment, Pu = punitiveness, D = defectiveness, Harm = vulnerability to harm or illness, Stand = unrelenting standarts / hypercriticalness.
*p<05; **p<.001.

c. Reliability

Additionally, to consistency coefficients, split-half reliability values were computed for the whole scale and subscales. Guttman split-half reliability coefficient for total the RS was .73. Cronbach's alpha coefficients for first and second halves of the whole scale each with 12 items were .74 and .71, respectively. Guttman split-half reliability coefficient for first factor with 12 items was .80.

Cronbach's alpha coefficients for first and second halves of the whole scale each with 6 items were .70 and .76, respectively. Guttman split-half reliability coefficient for second factor with 7 items was .72. Cronbach's alpha coefficients for first half comprising of 4 items and second half comprising of 3 items were .45 and .39, respectively. Lastly, Guttman split-half reliability coefficient for third factor with 5 items was .45. Cronbach's alpha coefficients for first half comprising of 3 items and second half comprising of 2 items were .41 and .49, respectively.

d. Concurrent validity

In order to assess the RS's concurrent validity, correlation of the RS total score with the YSQSF, subscales of the Locus of control scale and the PANAS's guilt item were examined (Table 5) (N=336). Results revealed that RS total score had negative low correlation with personal control (r = -.15, p < .05), meaninglessness of the effortfulness (r = -.24, p < .000), belief in an unjust world (r = -.26, p < .000), guilt (r = -.27, p < .000), negativity / pessimism (r = -.29, p < .000), social isolation (r = -.29, p < .000), emotional inhibition (r = -.27, p < .000), abandonment (r = -.26, p < .000), vulnerability to harm or illness (r = -.19, p < .05) and unrelenting standards / hypercriticalness (r = .11, p < .05). Moreover, RS had negative moderate correlation with emotional deprivation (r = -.34, p < .000), failure to achieve (r = -.45, p < .000), enmeshment (r = -.39, p < .000) and defectiveness (r = -.38, p < .000). Lastly, RS had positive low correlation with punitiveness (r = .23, p < .000). Results for the RS total score and subscales were summarized in Table 6.

Table 6. Correlations between measures

	RS	Ed	Bd	Cd
PC	-.15*	-.14*	-.02	-.20
BC	-.03	-.01	-.11	.04
ME	-.24**	-.15*	-.30**	-.17*
BF	.09	.12*	-.04	.11
BW	-.26**	-.17*	-.32**	-.12*
PANAS-Q	-.27**	-.23**	-.19**	-.20**
ED	-.34**	-.26**	-.30**	-.24**
F	-.45**	-.34**	-.49**	-.25**
Pe	-.29**	-.19*	-.31**	-.20**
SI	-.29**	-.20**	-.33**	-.13*
EI	-.27**	-.20**	-.31**	-.12*
En	-.39**	-.31**	-.40**	-.23**
AS	-.05	.00	-.09	-.05
InSC	-.02	-.02	-.02	-.01
SS	.05	.13*	-.13*	.07
A	-.26**	-.19*	-.32**	-.10
Pu	.23**	.28**	.04	.18**
D	-.38**	-.32**	-.37**	-.20**
Harm	-.19*	-.13*	-.20**	-.13*
Stand	.11*	.07	.09	.12*

Note. RS = The Responsibility Scale, Ed = Emotional dimension, Bd = Behavioral dimension, Cd = Cognitive dimension, PC = Personal control, BC = belief in chance, ME = Meaninglessness of the effortfulness, BF = belief in fate, BW = belief in an unjust world, PANAS-Q = guilt, ED = Emotional deprivation, F = failure to achieve, Pe = negativity / pessimissim, SI = social isolation, EI = emotional inhibition, En = enmeshment, AS = approval seeking, InSC = Insufficient self-control, SS = self-sacrifice, A = abandonment, Pu = punitiveness, D = defectiveness, Harm = vulnerability to harm or illness, Stand = unrelenting standarts / hypercriticalness.

*p<05; **p<.001.

4. Discussion

The current study purposes to assess the Responsibility scale's psychometric properties. The construction and psychometric evaluation of responsibility scale included factor analyses, internal consistency and concurrent validity of scale. Construct validity was calculated via PCA. PCA is used to eliminate dimensions to emphasize variation and bring out strong patterns in the dataset. The first hypothesis was that the RS was a unidimensional factor structure. PCA for parallel analyses showed up 3 significant Eigen values. PCA revealed that 3 factors. First factor included 24 items which was called emotional dimension of RS. Its alpha coefficient was 0.84 (n = 12) (Table 4). The second factor included seven items which were called behavioral dimension of RS. Its alpha coefficient was 0.65 (n = 7) (Table 4). Third and last factor was named as cognitive dimension of RS. It had five items (n = 7) (Table 4). The alpha coefficient for third factor was 0.54. In addition, the

results revealed that there was no difference between males and females based on the factor loadings of model. Thus, factor loading invariance across the sexes was supported. As a result, the first hypothesis was supported. The RS was found to be a three-dimensional construct, namely, cognitive (5 items), behavioral (7 items) and emotional (12 items) dimensions.

For the internal consistency, Guttman split-half reliability values for whole scale and subscales were calculated separately. Guttman split-half reliability for whole scale was found 0.73 and Cronbach alpha coefficient varied from 0.71 to 0.74 demonstrating that whole structure of scale was internally consistent. Guttman split-half reliability coefficient for the first factor was found 0.80 and Cronbach alpha coefficient for first factor varied from 0.70 to 0.76 demonstrating that first factor of scale was internally consistent. Second factor's Guttman split-half reliability coefficient was found 0.72 and Cronbach alpha coefficient for the second factor varied from .39 to 0.45 indicating that second factor was moderately internally reliable because of small number items. Lastly, the third factor's Guttman split-half reliability coefficient was found 0.45 and Cronbach alpha for the third factor varied from 0.41 and 0.49 which indicated that third factor was moderately internally reliable because there were small number items.

The current study investigated the cognitive, behavioral and cognitive dimensions of responsibility and supported the previous findings. The current study revealed positive and significant relationships between responsibility, punitiveness, and unrelenting standarts / hypercriticalness. Additionally, negative and significant relationships of responsibility with personal control, meaninglessness of the effortfulness, and belief in an unjust world subscales of LoC; and emotional deprivation, failure to achieve, defectiveness and enmeshment, negativity / pessimism, social isolation, emotional inhibition, enmeshment, abandonment, punitiveness, defectiveness, vulnerability to harm or illness subscales of early maladaptive schemata were found. Considering correlational results, it can be said that emotional deprivation may be related to belief that no one can help me except me. Therefore, they may feel responsible more for their behaviors. Indirectly it may serve physical and emotional well-being (Nelson et al 336). It was said that in order to take responsibility, individuals should accept their emotions; feel relieved from stepping back to frightening imagine of facing emotions; find peace, contentment and control over the circumstances; and then take a social role and responsibility (Chandler 1: cited in Montada, Filipp and Lerner 1). Therefore, emotional

deprivation schema may also reinforce self-reflective examination. Additionally, perception of control may affect the responsibility as well. That is, when individuals feel less personal control, find more meaning in their effort and believe in that world is a just place, they may feel and behave more responsibly. To be able to making effort to fulfill responsibilities in a "just" world, individuals also need less pessimism and negativity. It was suggested that when individuals feel responsible for their behaviors, they feel guilt, shame or self-directed anger (Chandler 1: cited in Montada, Filipp and Lerner 1). Focusing on positive aspects and making effort may protect them from failure to achieve, feelings of guilt, shame or self-directed anger, fear of punishment, and feelings related to defectiveness possibly covered by unrelenting standards. These also parallel with the suggestions that responsibility comprise of social abilities (Nelson et al 336; Chamberlin 204; Ellenburg 9) such as the recognition of one's own behavior or event (Glover 96), making choices, accepting subsequent consequences and effects of these choices (Popkin 1; Yavuzer 1; Hamilton 316), emotions leading to complete tasks or goals (Başaran 1; Berkowitz 429). Consequently, taking own responsibility may strength a personal border within relationships and decrease social isolation, and prevent development of enmeshed relationship patterns. These are parallel with that responsible individuals do not force other's boundaries with others and adopting respect-based communication. They have personal responsibilities such as gaining healthy identity towards himself, acquiring healthy valves, having healthy perception and evaluation methods and developing health interpersonal relationship (Nelson et al 336). However, since all these results are based on correlations and assumptions are primitive, further research is suggested.

Lastly, results revealed significant gender difference in the second data. Female participants had significantly higher the RS scores than males. This result is parallel with the previous literature findings as well (Arlow 63; Greening and Turban 254;). Females were found to be more ethical, socially responsible (Arlow 63), loyal to their jobs (Greening and Turban 254); to have higher levels of internalized moral identity (Hatch and Stephen 63); to prefer using corporate resources for solving societal problems (Arlow 63); and to have better communication skills (Najafi, Fernando and Pomering 1) than males in different setttings and roles.

In sum, the results of the present study indicated that responsibility scale was a reliable and valid in order to measure responsibility in Turkey. The RS is multidimensional and can be used in general to measure responsibility. The factor structure of the scale internally consistent. Moreover, the study has broadened the nomothetic span of responsibility by relating to locus of control and early maladaptive schemata.

For future implementations of the study, participants can be selected from individualistic cultures to improve generalizability of the findings and applicability of the RS. In addition, male and female ratio should be balanced to prevent possible confounding effect of gender in the future. Lastly, different occupations can be included in sample variability for application of the RS.

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Appendix 1. The Responsibility Scale in Turkish

Alt ölçekler:
1. Duygusal (1, 2, 5, 7, 10, 15r*, 18, 19, 20, 22r, 23r, 24)
2. Bilişsel (3, 9r, 11, 16, 17)
3. Davranışsal (4, 6, 8, 12, 13, 14, 21r)

Yönerge: Aşağıda belirtilen ifadeleri okuyunuz ve size uygun şekilde işaretleyiniz.

	Asla	Nadiren	Bazen	Sıklıkla	Daima
1. (1) ** Üzerime düşenleri yerine getirmenin önemli olduğuna inanırım.					
2. (2) Bir görev üstlendiğimde, kime karşı sorumlu olduğumun farkındayımdır.					
3. (6) Becerebileceğimi düşündüğüm bir işi, yapmaya çalışırım.					
4. (7) Üzerime düşenleri yerine getirirken, çıkan sorunları etkili şekilde çözmeye çalışırım.					
5. (8) Söz verdiğimde, bu sözü yerine getirmeye çalışırım.					
6. (9) Grup çalışmalarına dâhil olmamaya çalışırım. (R)					
7. (13) Bir kişiyi kırdığımda, gönlünü almak isterim.					
8. (15) Bir işe başlamak çok zamanımı alır. (R)					
9. (17) Gelecekte nasıl birisi olduğumu umursarım.					
10. (18) Hata yaptığımda bundan ders almaya çalışırım.					
11. (20) Başkalarının benim hakkımdaki düşüncelerini önemserim.					
12. (21) Zor bir iş karşısında kolaylıkla vazgeçerim. (R)					
13. (22) Üzerime düşen bir görevi yerine getirmediğimde, bunu saklamaya çalışırım. (R)					
14. (23) Geçmişte yaptığım hatalar, yeni sorumluluklar almamı engeller. (R)					
15. (24) Sorumluluklarımı yerine getirmek beni mutlu eder.					
16. (25) Kurallara uymakta zorluk çekmem.					
17. (26) Önceliklerim için fedakârlık yapabilirim.					
18. (27) Kızgın ya da üzgün hissetmeme rağmen üzerime düşenleri yerine getirmeye çalışırım.					
19. (28) Bana her zaman güven duyulabilir.					
20. (29) Bana güvenen insanları hala kırıklığına uğratmak istemem.					
21. (30) Planlarımı kolaylıkla yerine getirebilirim.					

22. (32) Yardım ettiğim birisinin, sorumluluklarını yerine getirebildiğini görmek beni mutlu eder.					
23. (33) Bana verilen bir işi, her ne pahasına olursa olsun yapmaya çalışırım.					
24. (34) Başkalarına yük olmaktansa, kendi işimi kendim yapmayı tercih ederim.					

* r = ters madde

** Parantez içerisindeki rakam ve sayılar, oluşturulan ilk ölçekteki madde numaralarını ifade etmektedir. Ölçeğin güncel hali, 24 maddeden oluşmaktadır.