Eğitimde Kuram ve Uygulama
Journal of Theory and Practice in Education
ISSN: 1304-9496

Articles /Makaleler
2015, 11(1), 359-373

RELIABILITY AND VALIDITY STUDIES OF THE TURKISH VERSION OF THE E-BULLYING SCALE (E-BS) AND E-VICTIMIZATION SCALE (E-VS)

(E- ZORBALIK ÖLÇEĞİ VE E-MAĞDURİYET ÖLÇEĞİNİN TÜRKÇE FORMLARININ GEÇERLİK VE GÜVENİRLİK ÇALIŞMALARI)

Başaran GENÇDOĞAN[1]
Özkan ÇİKRIKCİ[2]

ABSTRACT

The aim of the current study was to discover the usability of the E- Bullying Scale (E-BS) and E-Victimization Scale (E-VS) among Turkish adolescents. For this purpose, two separate studies were conducted and supportive results for reliability and validity were gathered. In study I, the factorial structure of E-BS was investigated. Participants were 163 adolescents with ages ranged between 14 and 19. Confirmatory factor analysis revealed an excellent model. A hundred and eighty eight (*n*=188) adolescents, with ages ranged from 14 to 19, took part in study 2. The factorial structure of E-VS demonstrated a single factor model that appeared a sufficient fit with data in confirmatory factor analysis. As for the reliability and convergent validity results, it can be stated that both of two instruments showed good internal consistency and test-retest reliability. In addition, the correlations of cyber bullying/victimization and e-bullying/victimization declared the assessment of bullying and victimization behaviors in cyberspace. In total, psychometric properties have shown that both of two instruments are valid and reliable.

Keywords: E-bullying, e-victimization, factorial structure, reliability.

ÖZET

Bu çalışmanın amacı E-Zorbalık ve E-Mağduriyet Ölçeklerinin Türk ergenler üzerinde kullanılabilirliğini araştırmaktır. Bu amaç doğrultusunda, iki farklı çalışma yürütülmüş ve her iki ölçme aracına yönelik güvenilir ve geçerli bulgular elde edilmiştir. Çalışma 1 kapsamında, E-Zorbalık Ölçeğinin faktör yapısı incelenmiştir. Çalışma 1, yaşları 14 ile 19 arasında değişen 163 ergen üzerinde yürütülmüştür. Doğrulayıcı factor analizi sonucunda ölçme aracının elde edilen verilerle iyi düzeyde uyum gösterdiği belirlenmiştir. Yaşları 14 ile 19 arasında değişen 188 ergen üzerinde yürütülen ikinci çalışmada E-Mağduriyet Ölçeğinin faktör yapısı incelenmiştir. Tek faktörlü modelin verilerle iyi düzeyde uyum gösterdiği saptanmıştır. Güvenirlik ve ölçüt geçerliklerine gelince, iki ölçme aracının da iç tutarlık katsayıları ve test tekrar test güvenirliklerinin kabul edilen ölçütler arasında olduğu belirlenmiştir. Bununla birlikte, siber zorbalık ve siber mağduriyet ile e-zorbalık ve e-mağduriyet arasında ilişkiler her iki ölçme aracının da siver ortamda meydana gelen mağduriyet ve zorbalığı değerlendirmede kullanılabileceğini göstermektedir. Genel olarak, bu çalışma kapsamında psikometrik özellikleri incelenen iki ölçme aracının Türk örnekleminde geçerli ve güvenilir olduğu sonucuna ulaşılmıştır.

Anahtar Sözcükler: E-Zorbalık, e-mağduriyet, faktör yapısı, güvenirlik.

[1] Doç. Dr., Atatürk Üniversitesi Kazım Karabekir Eğitim Fakültesi, basaran35@gmail.com
[2] Araş. Gör., Ordu Üniversitesi Eğitim Fakültesi, ozkanc61@hotmail.com

INTRODUCTION

The bullying that is defined as an intentional and conscious behavior to injure a person or to make him under stress (Tattum & Tattum, 1992) is evident in cyberspace with the development of information technology. At the present time, "text messages, e-mails, video or picture clips, instant messaging, blog Websites, social networking Web sites and chatrooms (p. 11)" comprise of communication ways. Even, approximately almost of these ways, which individuals are in trouble to avoid them, are now available in everywhere by means of smart phones (Freis & Gurung, 2013). Recently, researchers have paid their attention to identify cyber bullying while most of past research is related to bullying that occur in face to face situations (Champion, 2009; Dijkstra, Lindenberg, & Veenstra, 2007; Slonje & Smith, 2008; Smith et al., 2008). Construct of traditional bullying has changed into different forms, rather than face to face situations, over the years with the developments on information and communication technologies (ICT) which make bullying difficult to realize and manage. In other words, ICT supplies perpetrators with many opportunities which allow them to bully victims without declaring identities (Patchin & Hinduja, 2006; Topcu & Erdur-Baker, 2012). This circumstance now has been defined as cyber bullying that is an aggressive and deliberate behavior against victims performed by bullies via the electronic forms of communication tools (Smith et al., 2008).

All around the world, cyberbullying derived from traditional bullying (Olweus, 1978) has been assessed as an obstacle to the psychological well-being of youths. The initial definition of cyber bullying belongs to Bill Belsey. According to this definition, in sum, cyber bullying occurs when ICT is used in intentional, repeated and disturbed behaviors toward peers to harass them (Belsey, 2005 cited in Floros, Siomos, Fisoun, Dafouli, & Geroukalis, 2013). A lack of consensus on the definition of cyber bullying, as well as its' changeable construct particularly in proportion to the new technologies such as Web 2.0 and Web 3.0, and smart phones providing social network, commonly results in some difficulties such as measuring cyber bullying (Palfrey, 2008). Shariff (2008) pointed that the definition of online harassment and cyber bullying could differ according to the development in cyber space like using Web 2.0 properties instead of Web 1.0. Because new technologies and Web 3.0 are developed, Spears, Slee, Owens, and Johnson (2009) claimed that there is going to be need to have clear and convenient definitions and measuring tools of cyber bullying.

Although the traditional bullying is now very clear with its definition, prevalence and coping, there is a lack of systematic study on aggression carried out by bullies on the internet (Law, Shapka, Domene, & Gagné, 2012). Researches demonstrate that a behavior to be defined as a bullying needs to possess three features. First of all, bullies should harm the victims deliberately. Secondly, bullying behavior should be repeated and finally bullies and victims of bullying should be differentiated by power (Barlett & Gentile, 2012; Hoover, Oliver, & Hazler, 1992; Olweus, 1993; Pellegrini & Bartini, 2001; Smith & Boulton, 1990). Given these features, it can be easily stated that cyber bullying is partially consistent

with the traditional bullying. However, the criterion of power differences in bullying may not be seen in cyber bullying. For example, in traditional form, adolescents who are more powerful than others can incline to bully the victims who are weaker than bullies. On the other hand, in cyber space, this requirement is not needed. In brief, bullies in traditional bullying could be victims of cyber bullying (Law et al., 2012; Vandebosch & Van Cleemput, 2008). Because the results of rapid developments and increase in accessibility of technology, particularly adolescents use social networks intensively and share their personal information unrestrainedly. As a result of literature review, "E-bullying" term has been developed (Patchin & Hinduja, 2006). E-bullying involves several maladaptive behaviors targeting other people. Threatening and injuring other people through the internet and e-mail, text messaging, social networks is called as e-bullying (Kowalski, Limber, & Agatston, 2008; Lam & Li, 2013).

To determine and measure cyber bullying and victimization, several instruments have been developed namely Cyber Bullying Inventory (Erdur-Baker & Kavsut, 2007), Revise Cyber Bullying Inventory (Topcu & Erdur-Baker, 2010), Cyberbullying Questionnaire (Arıcak et al., 2008), Smith's Traditional and Cyber-bullying Scale (Smith et al., 2008), Cyber Bully/victim Scale (Ayas & Horzum, 2010), Cyber Victim and Bullying Scale (Çetin, Yaman, & Peker, 2011). Lam and Li (2013) stated that the deficiency of systematic data collection among adolescents can be accomplished by means of valid and reliable measuring tools of E-bullying/victimization. In addition, they suggested that a lack of suitable measuring among victims and perpetrators consisted of an obstacle to be carried out qualified epidemiological studies related to the "aetiology, effects, and potential intervention of bullying behavior"(p. 4). Consequently, Lam and Li (2013) decided to develop E-Bullying/victimization Scale so as to eliminate need for different instruments based on measuring of bullying on cyber space.

In general, the literature indicates that there has been a strong awareness of cyberbullying and victimization effects on adolescents. Thereafter, in Turkey, many reliable and valid measures of cyber bullying and victimization were either developed or adapted for adolescents. However, most of them assess cyber bullying behaviors in same tool and with simple questions or yes/no questions. Lawrence Lam who is one of the developers of scale, recommended us to conduct the adaptation study of E-Bullying/victimization Scale separately when we got the permission via e-mail. Moreover, we agree with Lam and Li (2013) that new suitable instruments focused on behaviors of bullies and victims will facilitate to perform further studies about cyber bullying and victimization. Eventually, we have a consensus that the nature of bullying behaviors among youth may be best understood for future studies and interventions for cyber bullying in collaboration with the Turkish version of E- Bullying/Victimization Scale. The main purpose of the present study was to adapt E-Bullying/Victimization Scale into Turkish and explore the psychometric properties of Turkish E-Bullying/Victimization Scale.

Research Overview

To adapt the E-Bullying/Victimization Scale into Turkish, required permission was granted from Lam Lawrence who is one of the developers of the instrument. There are many rules in the adaptation studies. In addition, the consistency between the original form and adapted form is expected in every case. Errors in translation can bring about captious and invalid measurements in beliefs, attitudes and perceptions which the original form aims to assess. In this article, the translation process based on back translation method was achieved in two phases (Brislin, 1970). First of all, three lecturers who are experts in both English and Turkish, and two academicians who got their MA degree in America translated the original form into Turkish separately. After all of translations into Turkish were gathered, only a Turkish form was determined by consensus. After that, the original form and the Turkish form were compared and similarities and discrepancies of translations were investigated. Moreover, final Turkish form was examined by experts and teachers. Eventually, we agreed the final Turkish form after aforementioned evaluation process.

Two studies were conducted to test the usability of E- Bullying/Victimization Scale for Turkish adolescents. The first, study 1 involved the psychometric properties of E- Bullying Scale. The second, study 2 was carried out to explore the applicability of E-Victimization Scale with Turkish adolescents. The results of confirmatory factor analysis, item analysis, reliability analysis and convergent validity were included in both of two studies. The required permission to conduct the present study was granted from teachers. E-BS and E-VS were administered to students in groups, separately. The data collection process lasted just 25 minutes for two studies.

STUDY 1 (STRUCTURE VALIDITY of E-BS)

METHOD

Participants

The study group consisted of 163 students studying at a high school in the fall term of 2012-2013 academic year, in Turkey. A hundred and six of participants (65%) were female and 57 of them (35%) were male. Ages ranged between 14 and 19, with a mean age of 16.67 (Sd: 1.04). 10.4% of students were 9^{th} graders (n = 17), 39.9% of them 10^{th} graders (n = 65), 25.8% of them 11^{th} graders (n = 42), 23.9% of them 12^{th} graders (n = 39). In addition, the final version of scale was employed with 96 students to obtain support for re-test reliability.

Research Instruments

E-Bullying Scale (E-BS): E-BS is a 6-item self-report scale that was developed by Lam and Li (2013) in order to investigate e-bullying among adolescents. Items on the E-BS were based on the Aggression and Victimisation Scale (AVS) by Orpinas and Horne (2006). Each item was rated on a 7-point likert

scale ranging from 0 (0 times) to 6 (6 times or more). High scores mean a high level of e-bullying. The E-BS has two factors labeled *mild* and *serious*. Coefficient of internal consistency for total scale was found as .96; for mild subscale was found as .92; and for serious subscale was found as .95. The E-BS with two factor structures accounted for 55.78% of total variance and factor loadings ranged from .31 to .99. Confirmatory factor analysis results showed a sufficient model fit for two factor models ($x^2_{(8)}$= 28.19, x^2/sd= 3.52 p<.001; RMSR = .00; GFI = .96; AGFI = .90).

The Cyber Bullying Scale (CBS): The cyber bullying scale was developed by Arıcak, Kınay and Tanrıkulu (2012). The CBS was composed of 24 items ranging from 1 (never) to 4(always). The single factor model accounted for 50.58% of total variance. Factor loadings of the CBS ranged from .49 to .82. The coefficient of internal consistency of the total scale was found to be .95. Finally, the test-retest reliability value was .70. In the present study internal consistency coefficient was found as .88.

Personal Information Form: Researchers developed a form for participants to acquire descriptive information of them. It contains several directives to determine participants' gender, grade level, age, getting a PC (personal computer) at home, access to the internet at home etc.

RESULTS

Confirmatory factor analysis (CFA)

Confirmatory factor analysis was conducted to verify a factorial structure and theoretical model determined previously (Thompson, 2004). To what extent the model account for the data was established with the fit indices. In a general manner fit indices values enable researchers to accept or refuse the model. We reported results for several fit indices as follow: RMSEA (Root Mean Square Error of Approximation), CFI (Comparative Fit Indices), IFI (Incremental Fit Index), GFI (Goodness of Fit Index), AGFI (Adjusted Goodness of Fit Index), NFI (Normed Fit Index), SRMR (Standardized Root Mean Square Residual), RFI (Relative Fit Index).

General agreements are that CFI, IFI, GFI, AGFI, NFI and RFI values of .90 or greater indicate satisfactory fit; RMSEA and SRMR values of .05 or lower show excellent fit (Bentler & Bonett, 1980; Kline, 2011). In total, results of confirmatory factor analysis indicated that the model was excellent fit to the data: $x^2_{(6)}$= 9.34, x^2/sd= 1.55, p= .15; RMSEA = .05; CFI = .99; IFI =.99; GFI = .98; AGFI = .93; NFI = .97; SRMR = .03; RFI = .93. Factor loading of 6 items are presented in Figure 1.

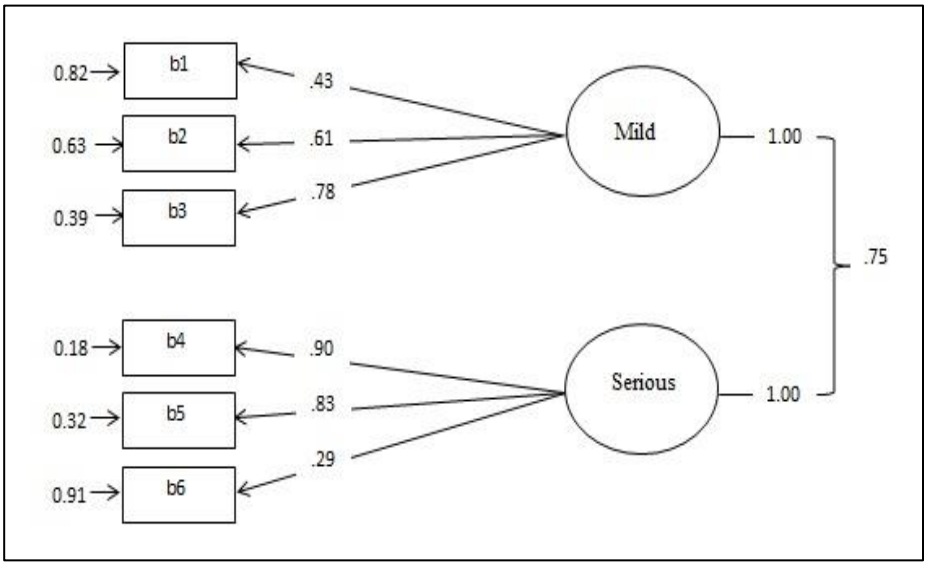

Figure 1. Factor loadings for the E-BS

Item Analysis

Item analysis was employed to determine to what extent each item is adequate to measure the participants' attitudes (Everitt & Skrondal, 2010). The item-total correlation was applied to recognize problematic items of whole scale. In the light of literature (Field, 2005; Nunnally & Bernstein, 1994), we agreed to the criterion of .30 as the cutoff item-total point. Based on the criterion, no item was eliminated. As seen from Table 1, item-total correlations ranged from .40 to .81. Moreover, the t-test results demonstrated that there are significant differences between each items' means of the upper 27% and lower 27% points (Henson & Roberts, 2006).

Table 1. Item-total score correlations, differences between mean scores of the upper 27% and lower 27% of E-BS

Item	r_{tt}	t
1	.63**	5.10***
2	.70**	5.35***
3	.72**	3.57***
4	.81**	5.91***
5	.71**	4.88***
6	.40**	3.62***

****p<.001, **p<.01 r_{tt}: Item-total score correlation coefficient*

Internal Reliability

The internal reliability was evaluated through the Cronbach's Alpha Coefficient, re-test reliability, and split-half reliability. As presented in Table 2, the Cronbach's Alpha coefficient for the entire scale was found as .75. Cronbach's alpha value of E-BS for female students was found to be .77; and for male students was found to be .71. Therefore, it could be concluded that these results

demonstrated acceptable internal consistency of the items in the total scale (Table 2). Test-retest reliabilities were assessed to determine the temporal stability of the entire scale. Pearson correlation coefficients were calculated and test-retest reliability was found as .92 for the E-BS scale.

Table 2. Internal consistency, means, standard deviations of E-BS

Scale		Range		M	SD
	α	Min.	Max.		
Total Scale	.75	0	22	2.35	4.58
Female	.77	0	22	1.64	3.91
Male	.71	0	20	3.68	5.40

SD: Standard Deviation; α: Cronbach's Alpha Coefficient

Convergent Validity

To establish convergent validity of E-BS, correlation with theoretically closer variable named *cyber bullying* was evaluated. As expected, the E-BS scores had the highest association with cyber bullying ($r = .58$, $p < .01$).

DISCUSSION

The aim of this study was to investigate the applicability of E-Bullying Scale (E-BS) with Turkish adolescents. Study 1 included the language equivalence, confirmatory factor analysis, item analysis, reliability analysis and convergent validity. Firstly, after providing evidence on consensus about language equivalence throughout back translation method, two factor structures of E-BS were verified by confirmatory factor analysis. Results from CFA indicated an adequate model with sufficient fit indices. Item analysis, which is an important phase in the adaptation process, was applied to assess whether each item can be adequate to measure the participants' attitudes. Considered from the results of item analysis evaluated with respect to the cutoff item-total point, no item from the scale was removed.

As for reliability analysis, internal consistency and test-retest reliability were examined. Because reliability coefficient of .70 was accepted as a criterion for the internal consistency (Creswell, 2002), the E-BS showed satisfactory reliability coefficients. In addition, test-retest reliability, which was found as .92, provided strong support for determination of the temporal stability of the scale. Finally, convergent validity was examined. There appeared a significant correlation between e-bullying and cyberbullying.

In general, the E-BS is an instrument to measure bullying behaviors on cyber space. The Turkish form of E-BS has 6 items and 7-point likert scale ranging from 0 (0 times) to 6 (6 times or more). Moreover, there are two subscales namely "mind" and "serious" in Turkish E-BS. There is no reverse scored item. Scores of E-BS could differ from 0 to 36. Getting high scores from E-BS refers great amount of e-bullying.

STUDY 2 (STRUCTURE VALIDITY of E-VS)
METHOD

Participants

The study group was composed of 188 students studying at a high school in the fall term of 2012-2013 academic year, in Turkey. A hundred and sixteen of students (61.7%) were female and 72 of them (38.3%) were male. Ages ranged between 14 and 19, with a mean age of 16.98 (Sd: .98). 26.1% of students were 9^{th} graders (*n* = 49), 7.4% of them 10^{th} graders (*n* = 14), 50% of them 11^{th} graders (*n* = 94), 16.5% of them 12^{th} graders (*n* = 31). In addition, the final version of scale was employed with 110 students to obtain support for re-test reliability.

Research Instruments

E-Victimisation Scale (E-VS): E-VS is a 5-item self-report scale developed by Lam and Li (2013) to examine e-victimisation among adolescents. Items on the E-VS were based on the Aggression and Victimisation Scale (AVS) by Orpinas and Horne (2006). Each item was rated on a 7-point likert scale ranging from 0 (0 times) to 6 (6 times or more). High scores mean a high level of e-victimisation. Coefficient of internal consistency for scale was found as .92. Moreover, Cronbach's alpha value of E-VS for female students was found to be .85; for male students was found to be .93. The E-VS with a single factor structure accounted for 47.01% of total variance and factor loadings ranged from .75 to .63. Confirmatory factor analysis results indicated a satisfactory model fit for single model ($x^2_{(5)}$= 67.90, p<.001; RMSR = .03; GFI = .91; AGFI = .75).

The Revised Cyber Bullying Inventory (RCBI): Erdur-Baker first developed Cyber Bullying Inventory (CBI) to determine the frequency of cyber bullying. The CBI has two parallel forms entitled *cyber bullying* and *cyber victimisation*. Topcu and Erdur-Baker (2010) revised the CBI with 14 items for both cyber bullying and cyber victimisation form. The ratings are indicated on an inventory from 1 (never) to 4 (more than three times) for each item twice. As a result of exploratory factor analysis, it was determined that the factor loadings of the items ranged from .78 and .21. In addition, the model was tested by means of confirmatory factor analysis (CFA). CFA results indicated an adequate fit. Fit indices of their study were as follow: RMSEA: .06, GFI= .93, AGFI= .90, CFI= .89. Furthermore, a significant relationship between two forms was determined. The coefficient of internal consistency for cyber bullying form was found to be .82; for cyber victimization form was found as .75. In present study, the Cronbach's Alpha value for cyber victimization was .88.

Personal Information Form: In this study, researchers used a form developed by them to obtain information related to participants' gender, grade level, age, getting a PC (personal computer) at home, access to the internet at home etc.

RESULTS

Confirmatory Factor Analysis (CFA)

A single factor model of E-VS was confirmed by means of CFA. Results of confirmatory factor analysis indicated that the model was excellent fit to the data: $x^2_{(3)}$= 2.13, x^2/sd= .71 p= .54; RMSEA = .00; CFI = 1.00; IFI =1.00; GFI = 1.00; AGFI = .98; NFI = .99; SRMR = .01; RFI = .98. Factor loading of 5 items are presented in Figure 2.

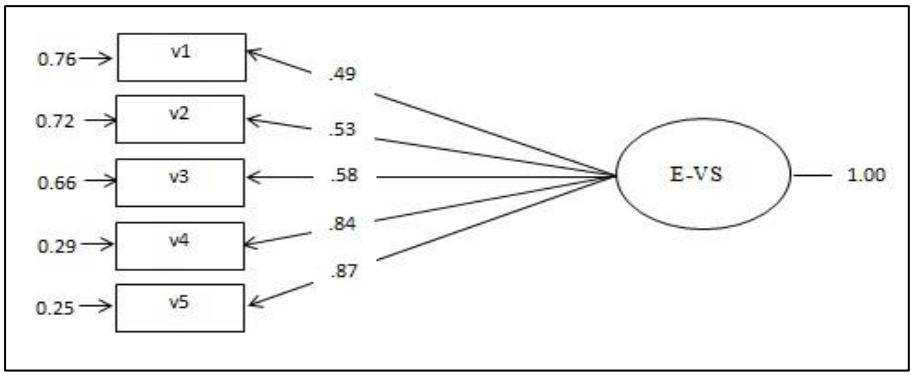

Figure 2. Factor loadings for the E-VS

Item Analysis

No item was eliminated due to the sufficient correlation coefficient between the sum score of the items and item-total. As seen from Table 3, item-total correlations ranged from .66 to .81. Additionally, the differences between mean scores of the upper 27% and lower 27% showed that there were significant differences between each items' means of the upper and lower groups.

Table 3. Item-total score correlations, differences between mean scores of the upper 27% and lower 27% of E-VS

Item	r_{tt}	t
1	.66**	7.91***
2	.68**	6.50***
3	.76**	7.72***
4	.81**	5.76***
5	.79**	5.13***

****p<.001, **p<.01 r_{tt}: Item-total score correlation coefficient*

Internal Reliability

The internal reliability was evaluated through the Cronbach's Alpha Coefficient, re-test reliability, and split-half reliability. As presented in Table 4, the Cronbach's Alpha coefficient for the whole scale was found as .79. Cronbach's alpha value of E-VS for female students was found to be .86; and for male students was found to be .73. Additionally, the split-half reliability coefficient was found as .60. Therefore, it could be concluded that these results demonstrated good internal

consistency of the items in the total scale (Table 4). Test-retest reliabilities were assessed to determine the temporal stability of the entire scale. Pearson correlation coefficients were calculated and test-retest reliability was found as .89 for the E-VS scale.

Table 4. Internal consistency, means, standard deviations of E-VS

Scale	Range			M	SD
	α	Min.	Max.		
Total Scale	.79	0	21	2.72	5.04
Female	.86	0	21	1.94	4.26
Male	.73	0	20	3.98	5.90

SD: Standard Deviation; α: Cronbach's Alpha Coefficient

Convergent Validity

For convergent validity of E-VS, correlation with theoretically closer variable named *cybervictimization* was measured. Correlation results indicated that the E-VS scores had the highest association with cyber bullying ($r= .71$, $p< .01$).

DISCUSSION

Study 2 describes the psychometric properties of E-Victimization Scale (E-VS). For this purpose, various statistical analyses required in the scale adaptation process were performed. At first, researchers reflected their efforts on supplying language equivalence. The back translation method was used in the language equivalence process.

The factorial structure of E-VS was investigated by CFA. Results from CFA showed that factor structure was excellent fit to data. After providing evidence for factorial structure of E-VS, item analysis, reliability analysis included internal consistency and test-retest reliability were performed. In item analysis, item total correlations and the differences between mean scores of the upper 27% and lower 27% were investigated. It was determined that item total correlations were ranged from .66 to .81 and there were significant relationships between the upper and lower groups. In other words, no item from scale was excluded. Thereafter, it was concluded that all of items in the scale was adequate to assess e-victimization.

The internal consistency of E-VS was found as .79 which could be accepted sufficient reliability coefficient (Creswell, 2002). Additionally, test-retest reliability was found .85. Results of reliability analysis demonstrated a reliable structure.

Overall, the E-VS, which was designed to assess e-victimization behavior, has 6 items 7-point likert scale ranging from 0 (0 times) to 6 (6 times or more). There is no reverse scored item. Scores of E-VS were ranged from 0 to 36. Getting high scores from E-VS refers great amount of e-victimization.

GENERAL DISCUSSION

Identification and measurement of e-bullying/victimization is crucial for well-being of adolescents. Besides from adolescents; parents, peers and school administers can be affected adversely by the negative reflections of e-bullying/victimization. To provide qualified opportunities with adolescents, several interventions towards victims and perpetrators should be developed. Nowadays, the most important problem is on determination which behavior should be classified as a bullying. This is why, the need of various instruments aimed to assess e-bullying/victimization is apparent. This article was aimed to investigate the applicability of E-Bullying and Victimization Scales with Turkish adolescents. Two separate studies for both of two scales were conducted. Study 1 and 2 included the language equivalence, confirmatory factor analysis, item analysis, reliability analysis and convergent validity. The E-Bullying and Victimization scales exhibited a similar structure in Turkish culture. Overall, both of two scales for Turkish adolescents appeared to be strongly appropriate measures with sufficient evidence for the reliability and validity of them.

LIMITATIONS AND FUTURE RESEARCH

As expected in every study, the studies have several limitations. First of all, the E-BS and E-VS show strong reliability and validity, though, many problems occur because of the methodology. E-BS and E-VS still need further psychometric validation among Turkish adolescents. Other limitation of the studies is the generalizability of the results. Moreover, futher studies should be conducted to investigate the relationships between e-bullying/victimization and other related variables. Finally, future research could assess if the E-BS and E-VS could be used in measuring e-bullying/victimization.

ACKNOWLEDGEMENT

The authors wish to express their thanks to Lawrence Lam and Yongxin Li for their permission and recommendations. In addition, we would like to thank participants for their precious contributions.

NOTE

This study was presented as an oral presentation at 12nd National Psychological Counseling and Guidance Congress, Turkey, Istanbul, September 8-11, 2013.

REFERENCES

Arıcak, O. T., Kınay, H., & Tanrıkulu, T. (2012). Siber zorbalık ölçeğinin ilk psikometrik bulguları. *Hasan Ali Yücel Eğitim Fakültesi Dergisi, 17*(1), 101-114.

Arıcak, T., Siyahhan, S., Uzunhasanoglu, A., Sarıbeyoglu, S., Çıplak, S., Yılmaz, N., et al. (2008). Cyberbullying among Turkish adolescents. *CyberPsychology & Behavior, 11*(3), 253–261.

Ayas, T., & Horzum, M. B. (2010). Cyber bully/victim scale development study. *Akademik Bakıs*, 19, 1-17.

Barlett, C. P., & Gentile, D. A. (2012). Attacking others online: The formation of cyber bullying in late adolescence. *Psychology and Popular Media Culture, 1*(2), 123-135.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88,* 588-606.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1,* 185–216.

Champion, K. (2009). Victimization, anger, and gender: Low anger and passive responses work. *American Journal of Orthopsychiatry, 79,* 71–82.

Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research.* New Jersey: Merrill Prentice Hall.

Çetin, B., Yaman, E., & Peker, A. (2011). Cyber victim and bullying scale: A study of validity and reliability. *Computers & Education, 57,* 2261-2271.

Dijkstra, J., Lindenberg, S., & Veenstra, R. (2007). Same-gender and cross-gender peer acceptance and peer rejection and their relation to bullying and helping among preadolescents: Comparing predictions from gender-homophily and goal-framing approaches. *Developmental Psychology, 43,* 1377–1389.

Erdur-Baker, Ö., & Kavsut, F. (2007). Cyber bullying. A new face of peer bullying. *Eurasian Journal of Educational Research, 27,* 31–42.

Everitt, B. S., & Skrondal, A. (2010). *The Cambridge Dictionary of Statistics* (4th ed.). Cambridge: Cambridge University Press.

Field, A. (2005*). Discovering Statistics Using SPSS* (2nd ed.). London: Sage Publications.

Floros, G. D., Siomos, K. E., Fisoun, V., Dafouli, E., & Geroukalis, D. (2013). Adolescent online cyber bullying in Greece: The impact of parental online security practices, bonding, and online impulsiveness. *Journal of School Health, 83*(6), 445-453.

Freis, S. D., & Gurung, R. A. R. (2013). A facebook analysis of helping behavior in online bullying. *Psychology of Popular Media Culture, 2*(1), 11-19.

Henson, R.K., & Roberts, J.K. (2006). Use of exploratory factor analysis in published research: common errors and some comment on improved performance. *Educational and Psychological Measurement, 66*(3), 393-416.

Hoover, J. H., Oliver, R., & Hazler, R. J. (1992). Bullying: Perceptions of adolescent victims in the Midwestern USA. *School Psychology International, 13*, 5–16.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York: The Guilford Press.

Kowalski, R. M., Limber, S., & Agatston, P. (2008). *Cyber bullying: Bullying in the digital age*. Oxford: Blackwell Publishing.

Lam, L. T., & Li, Y. (2013). The validation of the E-Victimisation Scale (E-VS) and the E- Bullying Scale (E-BS) for adolescents. *Computers in Human Behavior, 29*, 3-7.

Law, D. M., Shapka, J. D., Domene, J. F., & Gagné, M. H. (2012). Are cyberbullies really bullies? An investigation of reactive and proactive online aggression. *Computers in Human Behavior, 28*, 664-672.

Nunnally, J., & Bernstein, I. (1994). *Psychometric theory*. New York: McGraw-Hill.

Olweus, D. (1978). *Aggression in the schools: Bullies and whipping boys*. Washington, DC: Hemisphere Press.

Olweus, D. (1993). *Bulling at school*. Cambridge, MA: Blackwell.

Orpinas, P., & Horne, A. (2006). *Creating a positive school climate and developing social competence*. Washington, DC: American Psychological Association.

Palfrey, J. (2008). *Enhancing child safety and on-line technologies*. Cambridge, MA: Final report of the Internet safety technical task force.

Patchin, J. W., & Hinduja, S. (2006). Bullies move beyond the schoolyard: A preliminary look at cyberbullying. *Youth Violence and Juvenile Justice, 4*, 148–169.

Pellegrini, A. D., & Bartini, M. (2001). Dominance in early adolescent boys: Affiliative and aggressive dimensions and possible functions. *Merrill-Palmer Quarterly, 47*, 142–163.

Shariff, S. (2008). *Cyber-bullying: Issues and solutions for the school, the classroom and the home*. Abingdon: Routledge.

Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology, 49*, 147–154.

Smith, P. K., & Boulton, M. (1990). Rough and tumble play, aggression, and dominance. Perception and behavior in children's encounters. *Human Development, 33*, 271–282.

Smith, P. K., Mandavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry, 49*, 376–385,

Spears, B., Slee, P., Owens, L., & Johnson, B. (2009). Behind the scenes and screens: Insights into the human dimension of covert and cyberbullying. Journal of Psychology, 217(4), 189-196.

Tattum, D., & Tattum, E. (1992). *Social education and personal development*. London: David Fulton.

Thompson, B. (2004). *Exploratory and confirmatory factor analysis: understanding concepts and applications.* Washington: American Psychological Association.

Topcu, Ç., & Erdur-Baker, Ö. (2010). The Revised Cyber Bullying Inventory (RCBI): Validity and reliability studies. *Procedia Social and Behavioral Sciences, 5*, 660-664.

Topcu, Ç., & Erdur-Baker, Ö. (2012). Affective and cognitive empathy as mediators of gender differences in cyber and traditional bullying. *School Psychology International, 33*(5), 550-561.

Vandebosch, H., & Van Cleemput, K. (2008). Defining cyberbullying: A qualitative research into the perceptions of youngsters. *CyberPsychology and Behavior, 11,* 499–503.

Appendix

E-Bullying Scale (E-BS)

Son yedi gün içinde;								
1	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla başkalarını kaç kez rahatsız ettiniz?	0	1	2	3	4	5	6
2	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla başkalarını kaç kez kötü bir isimle çağırdınız?	0	1	2	3	4	5	6
3	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla başkalarına kaç kez ahlaksız şeyler söylediniz?	0	1	2	3	4	5	6
4	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla başkalarına kaç kez onları inciteceğinizi ya da döveceğinizi söylediniz?	0	1	2	3	4	5	6
5	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla başkalarını kaç kez tehdit ettiniz?	0	1	2	3	4	5	6
6	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla birilerinin başkaları tarafından sevilmemesini sağlamak için bir şeyler uydurdun mu?	0	1	2	3	4	5	6

E-Victimization Scale (E-VS)

Son yedi gün içinde;								
1	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla başkaları tarafından kaç kez rahatsız edildiniz?	0	1	2	3	4	5	6
2	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla başkaları tarafından kaç kez kötü bir isimle çağrıldınız?	0	1	2	3	4	5	6
3	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla başkaları size kaç kez ahlaksız şeyler söylediler?	0	1	2	3	4	5	6
4	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla başkaları sizi kaç kez inciteceğini ya da döveceğini söylediler?	0	1	2	3	4	5	6
5	Facebook ve twitter gibi sosyal ağlar, kısa mesajlar ve e-mail yoluyla başkaları sizi kaç kez tehdit etti?	0	1	2	3	4	5	6