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Attitudes towards violence scale in adults: A study of validity and reliability

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Abstract

The aim of this study was to test the validity and reliability of the "Adolescents' Attitudes' Towards Violence Scale" for adults. The study group consisted of 321 adults over 18 years of age. It was used to "Adolescents' Attitudes' Towards Violence Scale" which was 10 items on one dimension by developed Çetin (2011) for data gathering. Confirmatory Factor Analysis (CFA) was conducted to examine the construct validity and Cronbach alpha reliability coefficients were calculated to determine reliability of As a result of the CFA, the 10 items on one-dimensional structure was not confirmed in adults. It was evaluated items of attitudes towards violence according to theoretical and CFA results and was organized adults' attitudes towards violence as two dimensions. It was established 7 items on two-dimensional structure for adults. It was determined good fit in accordance with the goodness of fit indexes. They were sufficient for the scale ($\chi^2/sd = 2.44$, RMSEA=0.067, GFI=0.97, CFI=0.98). The Cronbach alpha reliability coefficients of the scale was calculated as .80. It is important to determine the attitudes of individuals' towards violence in the prevention of increasing violence in our day. Accordingly, "Attitudes Towards Violence Scale in Adults" is a valid and reliable measurement tool that can be used to determine the attitudes of adults.

Keywords: Attitudes towards violence; adults; validity; reliability.

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1. Introduction

Violence experienced at all social, cultural and economic levels and ages continues to spread in a sneaky and dangerous way. There is significant increase in the impacts of violence at the individual and social scale directly proportional with this condition (Kocacik, 2001). Although there have been many studies on violence as a social problem recently, this is actually the tip of the iceberg (Sahin, Baloglu & Unalmis, 2010; Cooper & Swanson, 2004).

Violence is experienced in the form of interpersonal violence and collective violence and exerts itself in many sub-dimensions. Violence varies by where and how it is committed. Therefore, the concept of violence takes part in many different disciplines including sociology, biology, psychology, philosophy, religion, forensics, law, politics, women studies, education, health and criminology. Many definitions have been made and are being made for violence. The World Health Organization defines violence as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation" (WHO, 2002). Violence can be defined as all actions which cause physical or mental damage to an individual by exerting power and pressure (Yaman, 2009). It is expressed that physical assault is not necessary for violence, it is to cause harm what is important and a person can be harmed by putting them under stress as a result of verbal harassment, intimidation and threat (Beale, Leather, Cox & Fletcher, 1999). Violence "can be defined as all statements, approaches, attitudes and behaviors which cause physical or mental damage through force, power and pressure and has many types including physical, sexual, emotional, verbal, economic and political" or violence "can be considered as a behavior which exists instinctually and results from environmental factors". Involvement of violence into daily life allows it to be used in many areas a problem solving tool and be exerted in many different ways (Turkish Medical Association [Turk Tabipleri Birliđi], 2007). In other words, if violence is made legitimate through acknowledgment in society and is adopted as a lifestyle, it is not considered a problem and gets approved as a problem solving tool (Ergil, 2001).

There are many psycho-social factors which affect violent behaviors and these factors help understanding why individuals have violent tendencies (Balkis, Duru & Bulus, 2005). Attitudes towards violence are the individual tendencies about which actions are considered violence in society and if a behavior is considered normal from the perspective of the individual (Unalmis & Sahin, 2012). These cognitive and affective impacts which especially develop with experience explain the attitudes of the individual. Generally, attitudes have an effect on behaviors and having a positive attitude towards violence is expressed as an important determinant of development of violent behaviors (Cetin, 2011; Gellman & Delucia-Waack, 2006; Markowitz, 2001; Borum, 2000; Vernberg, Jacobs & Hershberger, 1999; Funk, Elliott, Urman, Flores & Mock, 1999; Funk, Elliott, Bechtoldt, Pasold & Tsavoussis, 2003: 187; Zwets et al., 2015).

Identification of attitudes towards violence is very important in preventing violence (Sahin et al., 2010). Because, attitudes can be identified and preventive measures can be taken before violent behaviors are expressed. However, it is very hard to directly observe individuals' attitudes (Funk et al., 1999), it requires verified and reliable measurement tools to observe them (Cetin, 2011). It is important that these measurement tools consider all cognitive, affective and behavioral aspects of attitudes. With measurement tools, individuals' attitudes are identified and the viewpoint of the society about violence is evaluated.

This study intends to develop for the literature a measurement tool to be used to measure attitudes towards violence especially in adults. Accordingly, it is planned to ensure applicability and reliability in adults of the "Adolescents' Attitudes Towards Violence Scale" developed by Cetin (2011).

2. Material and Methodology

2.1. Study group

In this study on validity and reliability of the adults' attitudes towards violence scale, the study group is consisted of 321 individuals. The participants' mean age is $31,26 \pm 10,34$, the lowest age is 18 and the highest age is 78. Of the participants, 177 (55.1%) are public sector employees, 86 (26.8%) are private sector employees, 47 (14.6%) are students and 11 (3.5%) are retirees and housewives as we classify as others. In the study group, 194 (60.4%) are female, 171 (53.3%) are single, 262 (81.6%) have a college, bachelor's or master's degree. Moreover, 253 participants (78.8%) reported they perceived their monthly income level as medium level.

2.2. Data collection tools

In the study, the "Adolescents' Attitudes Towards Violence Scale" developed by Cetin (2011) and the questionnaire form for demographic data developed by the researchers were used. The attitude towards violence scale is a one-dimensional scale comprised of 10 items. The five-item Likert scale is graded with "Strongly disagree", "Disagree", "Neither agree nor disagree", "Agree", "Strongly agree". The highest score possible is 50 points and the lowest score possible is 10 points in the scale. The variance is 43.826% and the Cronbach's alpha reliability coefficient is .85. The total correlation values of the items in the scale vary between .47 and .67 (Cetin, 2011).

2.3. Statistical analysis

The Statistical Package for Social Sciences (SPSS) 20.0 and LISREL 8.80 were used for data analysis. The participants' number and percentage distributions by gender, marital status, occupation, education and income levels and mean and standard deviations by age were calculated. The Confirmatory Factor Analysis (CFA)- Structural Equation Modeling (SEM) was made to provide proof for construct validity of the scale. The Exploratory Factor Analysis (EFA) is used in the early stages of the study as it aims to identify the relationship between and the characteristics of the variants without defining a certain model (Cokluk, Sekercioglu & Buyukozturk, 2012). On the other hand, CFA is an advanced technique used to test accuracy of certain parameters of a previously developed model (Celik & Yilmaz, 2016; Cokluk et al., 2012). Therefore, CFA was used to verify validity of the model in adults in our study.

With CFA, it was examined if the scale's factor construct was verified for adults and various fit indexes were used to determine the model's competency. The commonly used fit indexes in CFA, the Chi-Square Goodness, Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Relative Fit Index (RFI), Incremental Fit Index (IFI), Root Mean Square Residuals (RMR), Standardized Root Mean Square Residuals (SRMR), and Root Mean Square Error of Approximation (RMSEA) fit indexes were examined (Cokluk et al., 2012). The Cronbach's alpha coefficient was used to test reliability of internal consistency of the data obtained by the measurement tool.

3. Findings

3.1. Findings about validity

Whether the one-dimensional and 10 item attitude towards violence scale is verified in adults was analyzed with CFA in LISREL 8.80 software. The path diagram of the one-dimensional structure in adults is provided in Figure 1.

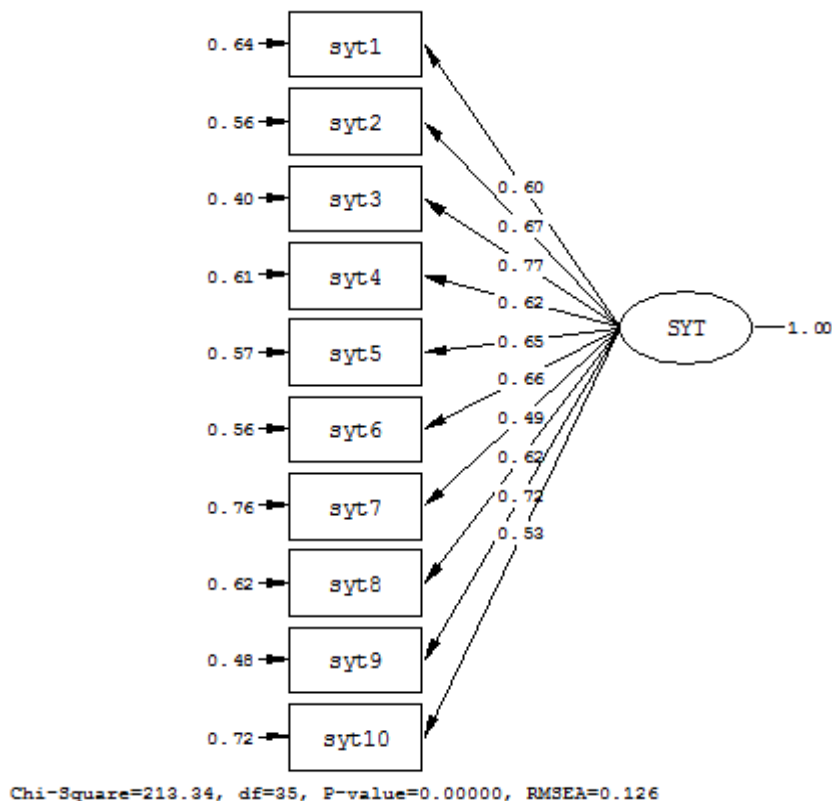


Figure 1. Path diagram of the attitude towards violence scale

According to the analysis result, the model's χ^2 / sd value = 6.09 (213.34 / 35) and RMSEA = 0.126. It was determined that the one-dimensional theoretical structure was not compatible with the data obtained. Theoretically, attitude towards violence statements and CFA results were evaluated and so attitudes towards violence in adults were organized in two dimensions. These two dimensions constitute the cognitive-affective and behavioral aspects of the attitude. CFA analysis was made to test validity of the two-factor construct. The adjustment indexes obtained as a result of the analysis were evaluated and the items syt8 (I fight with him/her if I hear he/she is talking bad about me), syt2 (If somebody is being hit, he/she has done something to deserve it) and syt9 (It comforts me to hit them if somebody pisses me off) error variances of which were related to other items and which disrupted the scale's construct were excluded from the scale respectively. The final model's fit index results are provided in Table 1.

Table 1. SEM results of the model

Factor	Item	Standardized loads	Error variance	t-value	R ²
Cognitive and Affective Dimension	syt1 - Using brute force empowers the person emotionally.	0.69	0.53	12.69	0.47
	syt4 - I like people being afraid of me because of my physical power.	0.73	0.47	13.66	0.53
	syt5- I feel strong when I fight with someone.	0.70	0.51	12.93	0.49
	syt10 - Fighting allows people to solve their problems in a short time.	0.59	0.65	10.49	0.35
Behavioral Dimension	syt3 - I use brute force when necessary.	0.82	0.33	15.01	0.67
	syt6 - If somebody hits me, I hit him/her too.	0.70	0.51	12.56	0.49
	syt7 - If somebody pisses me off, I fight with him/her.	0.46	0.79	7.72	0.21
$\chi^2=31.79$ sd=13, p=.00258 RMSEA=.067 RMR=.040, SRMR=.038, GFI=.97, AGFI=.94, CFI=.98, NFI=.97, NNFI=.97, IFI=.98 RFI=.95 Critical N (CN)= 281.91					

3.2. Findings about reliability

The Cronbach's alpha internal consistency coefficients were calculated for the scale's reliability analysis. The Cronbach's alpha internal consistency coefficients were .77 for the cognitive and affective dimension, .70 for the behavioral dimension and .80 for the entire scale.

4. Discussion

The study was planned to provide a valid and reliable measurement tool to be used to identify adults' attitudes towards violence for the literature. To this end, validity and reliability analyses were made with the data obtained from the adult study group using the "Adolescents' Attitudes Towards Violence Scale" developed by Cetin (2011).

The original measurement tool is made of 10 items and a one-dimensional construct. This construct was analyzed with CFA and according to the analysis result, the model's χ^2 / sd value = 6.09 (213.34 / 35) and RMSEA = 0.126 (Table 1). The χ^2 / sd value is an important measure in assessment of the model's fitness. In the study, the one-dimensional model's χ^2 / sd value was 6.09 which indicates bad fitness of the model. An χ^2 / sd value of 2 or less or 3 or less in big samples indicates perfect fitness. An χ^2 / sd value of 5 or less indicates medium level fitness and higher values point to the model's bad fitness (Cokluk et al. 2016). Another fit index is the RMSEA value and a value of 0.05 or less indicates perfect fitness, between 0.08 and 0.10 indicates good fitness and a value higher than 0.10 indicates weak fitness (Cokluk et al. 2016). In this study, the RMSEA value is .126 which indicates the weak fitness of the model (Table 1). It was determined that the one-dimensional theoretical structure was not compatible with the data obtained.

It was decided to evaluate the CFA analysis results with the items and to consider the attitude's cognitive-affective statements and behavioral statements in separate dimensions. The most commonly used definition in explaining attitudes is the definition by Smith as "the tendency which regularly creates the individual's opinions, emotions and behaviors about the attitude object" (Tutar, 2014). It is accepted that the attitudes have three dimensions, the cognitive dimension includes ideas and propositions, the affective dimension includes emotions which accompany ideas and the behavioral dimension includes preparedness for the behavior (Sahin & Dissiz, 2009). Accordingly, the

structure which was made two dimensions was re-analyzed with CFA. As a result of the analysis, the adjustment indexes were evaluated, 3 items error variances of which were related to other items were excluded from the model and the model's final version was created with 7 items and two dimensions.

After examination of the fit indexes of the two-dimensional model, the p value was calculated .00258 (Table 1). The p value gives information about significance of the difference between the expected covariance matrix and the observed covariance matrix (X^2 value). Therefore, it is desirable that the p value is not significant. However, the p value can be significant when the sample is big (Raykov & Marcoulides, 2006; Cokluk et al., 2016). Another fit index evaluated was the X^2 / sd value. The two-dimensional model's X^2 / sd value was 2.44 (31.79/13) which indicates good fitness of the model. The RMSEA value of .067 also indicates the good fitness of the model (Cokluk et al., 2016).

Considering other fitness indexes, RMR= .040 and SRMR= .038 (Table 1). A value of RMR and SRMR of 0.05 and less means good fitness (Schermelleh-Engel, Moosbrugger & Muller, 2003; Celik, Yilmaz, 2016; Cokluk et al., 2016). GFI and AGFI indexes of 0.95 and more indicate perfect fitness and of 0.90 and more indicate good fitness (Cokluk et al., 2016). In this study, GFI = .97 and AGFI = .94 (Table 1), which means GFI has perfect fitness and AGFI has good fitness. In the study, CFI = .98 (Table 1). A CFI index of 0.95 and more means perfect fitness (Cokluk et al., 2016). The CFI index calculated in this study means the model's perfect fitness (Table 1). In the study, NFI = .97 and NNFI = .97 (Table 1) and NFI and NNFI indexes of 0.95 and more mean perfect fitness (Cokluk et al., 2016). Another fitness measure is the "critical N" (CN) value which evaluates the study sample's competency. A critical N value of 200 and higher in SEM is considered to indicate a competent model fitness in terms of critical N statistics. CN is used to evaluate competency of the sample number beyond model fitness (Yilmaz, Catalbas & Celik, 2009). For the study model, the critical N value was calculated 281.91 (Table 1). This value indicates 321 participants in the study were competent. The Cronbach's alpha internal consistency coefficients were evaluated for the scale's reliability. Values higher than 0.70 for every dimension can be expressed as proof of the measurement results' reliability (Buyukozturk, 2007). Therefore, the collected data indicates the scale is reliable.

5. Conclusion

Today, violence is an important phenomenon which gradually increases and affects all nations. Considering the damage caused by violence to communities, it is inevitably necessary to take measures in the shortest time possible. One of the steps to be taken to prevent violence is to identify the viewpoints and attitudes of individuals towards violence. Identification of attitudes towards violence is very important in preventing violence. Attitudes are the causal factors behind people's behaviors. Before behaviors emerge, the cognitive and emotional processes which would lead to behavior are processed mentally. Therefore, individuals' preparedness to exhibit a certain behavior to a situation, incident, object or person, in short, their attitude emerges. Attitudes which guide the individual's behaviors are considered to be important determinants of behaviors including behaviors of violence.

The researchers made validity and reliability assessment in adults for the 10 item one-dimensional study for which validity and reliability assessment in adolescents was made by Cetin (2011). After adjustments in the measurement model for which CFA was made with Lisrel program, it was determined that the scale was a 7 item, two-factor construct. The factors were named Cognitive-Affective Dimension and Behavioral Dimension. Thus, it was determined that the two-factor construct had good fitness in all measures used in assessment of fitness. Under the light of these results, it can be concluded that the "Attitudes Towards Violence Scale in Adults" is a valid and reliable measurement tool for adults.

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