

Validation and Psychometric Properties of the Anger Management Skills Test

Yasin Farshchi-Tabrizi¹ , Sadegh Borazjani² , Changiz Rahimi³ 

¹ Department of psychology, Payam Noor Bushehr University, Bushehr, Iran.

² Department of Mental Health, School of Behavioral Sciences and Mental Health (Tehran Institute of Psychiatry), Iran University of Medical Sciences, Tehran, Iran.

³ Department of Clinical Psychology, Shiraz University, Shiraz, Iran.

Corresponding author and reprints: Yasin Farshchi-Tabrizi, M.Sc. in Clinical Child and Adolescent, Email: Farshchi.yasin@gmail.com

Abstract

Background: More awareness of anger in different social situations can help us to manage it efficiently. Unfortunately, the questionnaire measuring these differences hasn't been validated in Iran. The primary purpose of this study was to investigate the psychometric properties of the Persian version of the Springer anger control skills test.

Method: The statistical population of this study was 200 college students consisted of 180 undergraduate, 15 M.Sc, and 5 Ph.D. students at Shiraz University. A random sampling method was used in this research. Springer anger control skills test was completed to assess the validity and reliability, Cronbach's alpha and internal validity, and exploratory factor analysis was used.

Results: Results indicated the reliability of 0.62 and a significant value (0.001). KMO value was 0.45. Also, a significant difference was found between males and females in anger management and allocated to sociality and non-family relationships (0.001). Simultaneously, there was no significant difference between females and males in other variables and subscales of anger control.

Conclusion: Findings illustrate that this scale is reliable and valid and can be used in a clinical context. The difference between male and female in controlling anger in social situations can be related to Cultural influences and having more education; also, this sample only represents the population who had a higher level of education in comparison to others. Besides, they have received more educational training and necessary skills to cope with impulses and social encounters more appropriately.

Keywords: Anger Management Therapy; Aggression, Gender Identity; Reproducibility of Results.

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Introduction

Anger is an emotion that is a prelude to aggression and a combination of individual and environmental factors (1). According to adjustment theories, anger helps an individual to cope with stressful situations. Still, sometimes

people show more aggressive behaviors in stressful and social situations, which controlling anger becomes more challenging for an individual. This kind of behavior can be harmful to general health (2, 3). Also, violence can be seen as a form of aggression (4, 5), And research indicated

aggressive behavior can be controlled (6). Therefore, if we obtain a better understanding of anger, it can be managed and controlled. Aggression can occur both verbally and physically (7). Spielberger et al. refer to three types of expressions of anger: anger in, anger out, and anger-control. Anger-control is a more mature behavior and seems to be more acceptable to the community (8). Interaction in the social situation increases aggression. The most important social determinants of aggression include failure, direct provocation, media violence, and sexual arousal (9). Anger and aggression can affect interpersonal relationships leading to interpersonal problems. Violence and aggression can be propagated to children by media and society or even by parents themselves. According to Albert Bandura, learning can be vicarious, and children learn these behaviors Introduction to theories of learning (10). A child can learn violence and aggression, while these behaviors will influence their future relationships, such as intimate and daily relationships (11).

Frustration-aggression theory is one of the theories that justifies aggression and is frequently used in research; based on this theory, aggression can be predicted through failure and frustration. Aggression is an urge to end the previously experienced discomfort, and this frustrating situation provides conditions that can increase the risk of an individual's aggression. Self-control is effective in individual adaptation and can prevent impulsive behaviors (12). The research has also shown that self-control is effective in managing anger (13, 14). Also, anger control is one of the pivotal skills that people need in their daily relationships. Due to measuring such a component, we require a precise and valid tool that evaluates our anger control skills in different aspects of daily relationships. several questionnaires were designed to assess anger and aggression which is mostly about the quality and frequency of aggressive behaviors, anger symptoms,

even though these instruments did not consider anger expression in various social settings such as familial and social contents. Other societies have designed appropriate tools to study anger control but only a few of them have studies anger control in different social situations (9, 15-17). The lack of literature on anger and aggressive behaviors in other situations has created a significant limitation for further studies. Also, some research indicates a positive and significant relationship between sex and aggression (18). These results showed that being angry in females negatively and in males had a positive relationship with aggression. Sofia and Cruz (19) found a significant difference between male and female athletes in anger and aggression so that women had less tendency to express anger. Also, empathy had a significant negative effect on aggression. In another study, it was found that there was a significant relationship between psychological control, authenticity, contingent self-worth (20). Springer anger control skills test is a developed questionnaire for assessing anger control in personal situations and in a social and familial context, which made a path to even identifying anger control skill form in the communities and cultures. Therefore, this study's main purpose was to investigate the psychometric properties of the Persian version of the anger control skill test as well as gender differences in anger control skills in three personal, familial and social situations.

Method

This study was cross-sectional and designed to evaluate the reliability and validity of the Anger Control Skills Test and gender differences in three situations between students of Shiraz University, Iran. *Sample:* The statistical population in this study were students studying at Shiraz University. The sampling method was random, and These subjects were selected from humanities students. *Research tools:* Springer anger control skills test was used in this study.

Springer anger control skills test: This questionnaire was published by Christopher Evans in 1980, which consists of 25 questions which are divided into three parts and examine anger control in three areas (9), including assessing anger in angry situations, personal relationships, and social relationships. In the first section, the sum of scores is between 5 and 25, and in the second and third sections, the total score of the subject is between 20 and 100. The score for the first part is divided into three parts: Scores between (5-10) indicates that the subject is afraid of showing anger towards somebody or others, or thinks he will never be angry or possibly deceives himself, (b) score between 11-17 which represents an average score. The subject is aware of his anger and will show it at the right time. In general, the subject is not angry; however, since the individual tries to be reasonable, it may cause to prevent a full presentation of his feelings; (c) score above 17 indicates that subject has no problem in expressing his anger. However, this can seem to be threatening and hostile, in others' opinion. Sometimes it may feel that his excitement is out of control. Scores in the second and third parts should be between 20-100. The higher score of the subject represents the higher level of readiness for expressing anger. A lower score indicates a higher level of inhibitory anger, and the average score indicates that the individual's anger is controllable. Questions with a value of 5 and questions with a value of 1 score indicate an outrage and anger situation, respectively. A total score above 75 points in the second and third sections reveals an outbreak of anger.

Table 1. The degree of reliability of Springer anger control skills test and its sub-scales

Cronbach's alpha for 25 questions	0.62
Number of items	16
Cronbach's alpha factor 1	0.28
Cronbach's alpha factor 2	0.25
Cronbach's alpha factor 3	0.42

Also, the scores less than 50 indicate anxiety suppression, and the scores between 51-74 include the anger control situation.

Procedure: Springer anger control skills test was translated and edited into Farsi by M.A. of English language and literature students. Also, to avoid substantial changes in the content, the original and translated version of the Anger control Skills Inventory was compared and approved by an assistant professor in clinical psychology. Then, 200 questionnaires of Springer anger control skills test were distributed among Shiraz University students. Before distribution, explained that all the information is confidential and Participation in research will be optional.

Statistical Methods: The statistical analysis of the obtained data was assessed by factor analysis, Cronbach's alpha, and internal validity of the items, using spss16 software.

Results:

Two hundred students (98 females 49% - 102 males 51%) were included in Shiraz University. The individuals were between 18 and 38 years old, and the participants' mean age was 22.2 years. They were contributed in three categories, undergraduate (180 students), postgraduate (M.Sc.) (15), and Ph.D. (5). About 10% of participants were married, and the rest, 90%, were single.

1. Reliability

The Cronbach Alpha statistical method was conducted to assess the Springer anger control skills test's reliability, and it was calculated 0.62 (Table 1).

Table 2. Factor analysis and correlation between each item with Springer anger control skills test

Validity based on factor analysis	ρ	0.001
	KMO Bartlett Test	
	0.45	
Factor	Number of questions	correlation between the question and the total score
<u>1</u>	1	0.38
	2	0.25
	3	0.3
	4	0.43
	6	0.36
	8	0.33
	9	0.33
	10	0.42
	11	0.33
	<u>2</u>	14
15		0.33
<u>3</u>	17	0.39
	18	0.33
	19	0.55
	20	0.27
	22	0.36
	24	0.51

2. Validity

To assess the validity, we used content validity, internal, exploratory factor analysis. An assistant professor of clinical psychology evaluated the content validity study, (its validity was significant, its KMO Bartlett Test value was 0.45, $p < 0.001$). Some of these items were removed from the set of questions due to a lack of sufficient correlation (0.3) with all questions' correlation, and the number of items

reached from 25 to 16 [Table 2]. As shown in Table 2, some questions from the questionnaire did not have enough correlation value, and questions were removed from the research process and the presentation of the results whose correlation was less than 0.25. These questions were 5, 7, 8, 12, 13, 16, 21, 23 and 25. After removing these questions, the reliability of this questionnaire reached 0.62.

Table 3. Factor loads of post-rotation questions Springer anger control skills test

Number of questions	Factor 1	Number of questions	Factor 2	Number of questions	Factor3
6	0.59	1	-0.39	5	0.43
10	0.61	3	-0.35	8	0.47
11	0.66	4	0.41	12	0.43
13	0.25	7	-.5	14	-0.49
15	0.41	16	-0.43	21	-0.43
19	0.69	17	0.47	23	0.39
22	0.37	18	-0.32		
		24	0.57		
		25	0.6		

According to Varimax rotation results, question 19 had the highest factor load (0.69) on factor 1, and question 13 had the lowest factor load (0.25) on factor 1. Also, questions 24 and 18 had the highest and lowest load on factor 2, respectively. However, factor 3 indicated that questions 14 and 23 had the highest and lowest loads [Table 3]. Correlation between the total score and each subscale in the Springer anger control skills test showed a significant correlation between the total score and its subscales [Table 4].

As shown in the table, each sub-scale correlation with other subscales and the

total score was positive and significant. Also, the Independent t-test reveals that there were no significant differences between males and females in the questionnaire. However, males and females showed a significant difference in subscale 3 ($p=0.001$) [Table 5].

In this section, to examine the differences between two groups of females and males, according to the results presented in Table 5, it can be seen that only the subscale of 3 anger control questionnaires that examines the control of anger in social and family relationships, makes a significant difference. This finding suggests that

Table 4. Correlation between the total score and each sub-scale

	Subscale1	Subscale2	Subscale3	Total score
Subscale1	1			
Subscale2	0.04*	1		
Subscale3	0.001**	0.001**	1	
Total score	0.001**	0.001**	0.001**	1

* ($P < 0.05$), ** ($P < 0.01$)

females and males are different in controlling anger in social and family relationships, and this skill is more used in males than females. There were no significant differences between females and males in other sub-scales and no significant differences between the groups in the Springer anger control skills test.

Discussion

The finding indicated that Cronbach's alpha value was 0.62, meeting acceptable reliability. This tool's validity was calculated based on factor analysis, and an expert confirmed its content validity. The questionnaire measures individuals in three parts in terms of anger control skills. The first part involves situations where individuals are engaged with angry situations. The second part examines level of control or expression of an individual's anger in family and personal situations. The third part examines level of control or expression of an individual in social and non-family situations. These subscales make this anger control questionnaire different from other anger questionnaires. Also, it describes how the subjects organize and express their anger: whether they are suppressed or over-expressed. Other researchers reported the psychometric properties of their questionnaire as desirable. However, there were some differences in the Azevedo et al. study compared to the current research (15, 21). Our finding indicated no significant difference between males and females in feeling anger which is consistent with the results of other researchers (15, 19), indicating no significant difference in the level of anger perception among males and females. This result can be because our sample group includes students, and this sample represents a group, which was more educated and readable compared to other members of the community. Also, participants may utilize higher education, social skills, and abilities to control impulses and social encounters. But it

should also be noticed that this difference was not significant in our sample in the context of family and personal relationships. There is no difference between males and females in the incidence and anger management skills in family relationships. However, this result was significant in social relationships. These differences may be due to the cultural foundations in Iran, as it seems females, for some reason, are more likely to curb their anger rather than males. These justifications may result from females' extant expectations to be more gentle and kinder in social relations.

On the other hand, Nasir and Abdoghani (7) found that after being angry and showing aggression, the females suffered from negative emotions such as feelings of guilt, regret, feeling uncomfortable about being angry, and the impression that they may lose their friends. Also, researchers suggest that females use more anger control strategies. Based on these findings, one can point out that females show greater anger management skills were feelings of guilt and regret after showing aggressive behavior, which caused the emotional reaction. They have a negative outlook on their own and think more about the negative consequences. In this regard, McCormick, Turner, and Foster (20) have found an indirect relationship between psychological control and the internalization of anger; increasing psychological control may cause an increment of the internalization of anger. Our results have been inconsistent with Colasante et al. (18), who have found a significant direct relationship between age and sex and aggression. On the other hand, the inhibition of aggression control was negatively predicted and can be associated with other types of impulse avoidance such as drinking alcohol, sexual behavior, and violent behavior. Also, it is more likely that we observe more anger management skills among more educated individuals (22, 23). *Strength of the study:* Assessing several stages of anger (explicit and implicit) in

different situations and improving psychological interventions.

Practical and Research Applications: This questionnaire can be effective in other researches as well as in assessing human behaviors because of the ability to measure anger control skills in three dimensions of social, family, personal. Also, the ability to control anger can be related to cognitive control and attention. It is suggested that anger management skills be measured by other tools that respond to inhibition and attention (Stroop Test).

Limitations: The first limitation was that only one professor evaluated the Contents of the questionnaire. The generalization of our results is more limited to the educated class, and the degree of anger management skills should be measured in other sections of the community.

Authors contribution: Farshchi and Rahimi determined the concept and design of the study. Data were collected by Farshchi and Borazjani, then analyzed by Farshchi under Rahimi supervision and interpreted by Farshchi. Farshchi was coordinating data management, conducted the statistical and power analyses and assisted with drafting the paper. The discussion was written in collaboration by Farshchi and Borazjani. Borazjani translated paper from Persian to English language. Editing and responding to the journal and paper revising was done by Borazjani and Farshchi. All authors read and approved the final manuscript.

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