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Investigation of Validity and Reliability of Templer Death Anxiety Scale

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This study was carried out to determine the psychometric characteristics of Templer Death Anxiety Scale, an instrument, designed to assess the death anxiety. Our sample comprised 345 students (184 male, 161 female) who were selected from Islamic Azad University, Abadan branch, using the random sampling method and were then assessed using death anxiety scale. The data indicated that the mean scores were 7.5(S.D. = 2.9) for all subjects, 8.08(S.D. = 3.2) for female, and 7.11(S.D. = 2.7) for male. The validity of the scale was obtained using factor analysis that showed five factors with Eigen values of greater than one. Also, item-total correlations were evaluated; the reliability coefficients of the scale using test-retest, split-half, and Cronbach alpha were 0.87, 0.59, and 0.75, respectively. Furthermore, significant differences were found between female and male individuals in terms of death anxiety, single-married, and adolescent-middle aged students. Overall, the Death Anxiety Scale among students under study has appropriate validity and reliability. Moreover, factor analysis showed multidimensional structure for this scale and considering the appropriate psychometric characteristics, this scale can be used in researches about death.

Keywords: Death Anxiety, Templer Death Anxiety Scale, Validity, Reliability.

Introduction

“Death” is a subject which has always accompanied human being. Although, it was not widely studied in some periods, it has two aspects which have been more under consideration: firstly, the study of psychological attitudes and their effects on dying patients; secondly, the study of fear and death anxiety in various populations (Frazier and Foss-Goodman, 1988). Death anxiety means feeling fear, horror, and worry toward death or anything leading to death. In other words, death anxiety is a set of negative emotional reactions with different frequencies caused by the thoughts of body damage.

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In this point of view, there is emphasis on both emotions and cognitive approach (Urine and Kilbourne, 2008).

Death anxiety is a complicated factor that is experienced with variable severity during one's life, and is also influenced by a variety of factors such as environmental events, age, and sex (Pollak, 1980). Frankl (1969) believes that death anxiety influences the personality and mental health while death awareness leads to a vast existential crisis. The great concentration of studies on death anxiety has increased the importance of researches at thanatology in a way that specific publications have been issued which represents the great amount of the studies in this regard (Urine and Kilbourne, 2008).

Many studies show the relationship between the personal characters and the factors related to the death anxiety such as living in isolation, agitation, aggressiveness, time urgency (Frazier and Goodman, 1988), neurosis (Howells and Field, 1982), feeling apprehensive, guilt feeling, frustration, tension, lack of self-confidence, lack of self-esteem and type A personalities (Thorson and Powell, 1988; Neufeldt and Holmes, 1979; Tramil et. al, 1985). In addition, some interactive cultural studies prove that death anxiety is more prevalent in western rather than eastern culture (Schumaker et. al, 1988; McMordie and Kumar, 1984). Since 1980s several studies have taken place on the characteristics of liable people to death anxiety such as their gender (Tramil et al, 1985; Nirmala and Kumar, 1987; Abdel-khalek and Ahmed Omar, 1988; Servaty et al, 1996; Al-arga and Abdallah, 2005; Otoom et al, 2007), and their age (Stevens et. al, 1980; Troll, 1982; Torson and powell, 1988; Neimeyer and Brunt, 1995 reported by Urine 2008; Fortner and Neimeyer 1999; Al-Arga and Abdallah, 2005). The extent of the researches indicates the importance of the death anxiety as a psychological variable.

One of the important subjects in studies related to death anxiety is methodology and testing. So far, three methods have been applied to measure death anxiety including interviews, projection techniques, and questionnaires. Interviews are frequent; while, projection techniques apply conventional psychological projection assessment tools such as TAT. The third approach applies various questionnaires such as Death Anxiety Scale prepared by Templer and repeatedly used in researches (Templer, 1970).

Anyway, the correct and appropriate application of psychological tests has always been emphasized in psychology. It is not regarded a correct method to use tests which are not standardized and surveyed with regard to the psychometric characteristics. An instrument should have essential qualities such as validity and reliability, in order to give enough of strength to the findings in a research. Moreover, many of the instruments are used in clinics,

as they undoubtedly help professionals. Considering lack of valid and standard instruments in our country, it seems necessary to prepare and compare tests with one another. This research has focused on the preparation and application of DAS scale among Iranian populations and the objective is to study the psychometric characteristics of DAS.

Methodology

This research is a cross sectional study, in which our sample comprises 345 students (161 females and 184 males) who were randomly selected from Abadan Islamic Azad University through several steps. Firstly, DAS was translated and surveyed by some English language professors, psychologists and psychiatrists.

DAS is a death anxiety measuring instrument of efficient applications which was developed by Templer (1970). It consists of 15 questions and answers which are based on Yes-No options while each question has a score of one or zero. Thus, total score is between maximum 15 and minimum zero. Some of the questions are prepared in a way that directly measure death anxiety and its related issues; the other questions measure events such as sudden diseases, world war, speed of time passing, shortness of life, and fear of a painful death.

In order to assess the validity of DAS scale, Templer (1970) had two different studies. In a research, he studied psychiatric patients consisting of a group which had fearful thoughts and expressions about death, and a controlling group consisting of patients who had not shown fear and anxiety toward death in their interviews. Templer found a significant DAS difference ($p < 0.01$) between the two groups. In another study on students, Templer found 0.74 ($P < 0.01$) correlation coefficient between DAS and Boyar's Fear of Death Scale (BFDS); and 0.25 ($p < 0.05$) correlation coefficient between DAS and world association test. Abdolkhalegh, Beshai, and Templer (1993) identified five factors in structural validity through factor analysis in Arabic edition of DAS among Egyptian students, which totally indicated 53.7% variance among males and 52.9% variance among females. Also Abdolkhalegh (1998) reported four factors named fear of death, fear of post-death, fear of fatal disease, and death intellectual employment through factor analysis of the construct validity when he studied death anxiety among Lebanese students. Levin (1989-1990) also introduced five factors in the analysis of DAS which indicated 35% common variance. Saggino and Kline (1996) also found three factors in the study of the Italian version of DAS and introduced it as a multidimensional scale.

Studying the reliability of DAS, Templer (1970) reported 0.83 coefficients

for test-retest reliability and 0.76 for internal consistency coefficient. On the other hand, Kelly and Corriveau (1995) reported 0.85 test-retest and 0.73 internal consistency coefficient. Meanwhile, Abdolkhalegh (1991) reported 0.57 split-half reliability coefficient for males and 0.78 for females in Arabic version of DAS. Also Elarja and Abdollah (2005) reported 0.92 Cronbach alpha coefficients in their study. Generally, in this research, statistical analysis were done by SPSS, using T-test, Anova, Scheffe Post hoc Test, correlation coefficient and factor analysis.

Results

Findings are divided into two parts based on data collection. Firstly, psychometric characteristics of Death Anxiety Scale; secondly, comparison between different groups. According to data analysis, DAS scores in the whole sample show 7.5 averages, 7.51 median and 2.9 std. Closeness of the three central indices proves the normal graph and therefore, results can be generalized for the whole population. Meanwhile, average DAS score is 8.08 with 3.2 S.D. for females and 7.11 with 2.7 S.D. for males. Since 69.5 of females' scores are distributed at two sides of the average in a standard way, they have a medium level of death anxiety. On the other hand, 16.3 of females' scores show more than one standard deviation less than average, so they suffer from a low death anxiety. Then 14.2 of all female scores show more than one standard deviation above the average which means they experience a high level of death anxiety. Also 68.2 of males' scores, at the rate of one S.D., are normally placed at both sides of the average; 19.6 show more than one S.D less than average; and finally 12.2 of male examines show more than one standard deviation above average.

Table 1: Correlation Coefficient between Items and Total Score of DAS

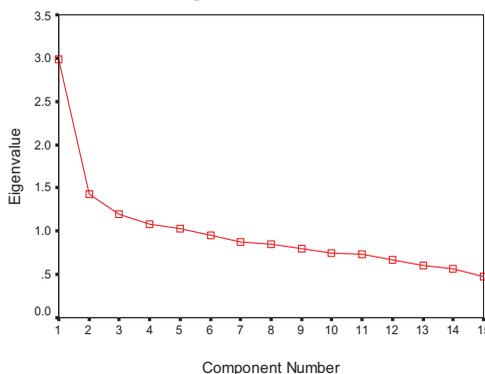
Items	rtt	Items	rtt
1	*0.60	9	*0.50
2	*0.21	10	*0.48
3	*0.49	11	*0.53
4	*0.57	12	*0.30
5	*0.54	13	*0.38
6	*0.45	14	*0.52
7	*0.57	15	*0.45
8	*0.50		

* $p < 0.01$

Table 1 shows internal validity in DAS; meanwhile, correlation between the items of the scale and total scale score, significant for all DAS scale items

($P < 0.01$). Coefficient changes between 0.21 to 0.60. The highest coefficient is related to the first item and the lowest coefficient belongs to the second item.

Figure 1 :Scree Plot



In order to study the construct validity and to determine factors, data were analyzed by factor analysis using varimax rotation method. KMO ratio is 0.76 which refers to the sample quantity. Also Bartlett test showed significance at $P < 0.001$. Principal components and Scree Plot (fig.1) show 5 factors in the scale with more than 1 Eigen value.

Table 2: Five factors and item factor loading

Factors and Items	FLI
First factor : Absolute death anxiety	
5- I am not at all afraid to die.	.76
7- The thought of death never bothers me.	.73
1-I am very much afraid to die.	.65
Second factor : Fear of patience and pain	
11-I am really scared of having a heart attack.	
4-I dread to think about having to have an operation.	.50
9-I fear dying a painful death.	.35
6-I am not particularly afraid of getting cancer.	
Third factor : Death related thoughts	
10-The subject of life after death troubles me greatly.	.70
14-The sight of a dead body is horrifying to me.	.64
3-It doesn't make me nervous when people talk about death.	.51
Fourth factor : Time passing and short life	
12-I often think about how short life really is.	.71
8-I am often distressed by the way time flies so very rapidly.	.60
2-The thought of death seldom enters my mind.	.55
Fifth factor : Fear of future	
13-I shudder when I hear people talking about a World War III.	.73
15-I feel that the future holds noting for me to fear.	.45

Second part of the data analysis is devoted to a comparison between different groups. Considering table 3, females' total average score of death

anxiety is higher than males' total average. According to the T-test, the difference between males and females shows significance at $P < 0.01$. In the same way, singles' higher death anxiety score in comparison to married people shows significant difference at $P < 0.01$.

Table 3: T-test for Comparing Groups according to DAS Score

Groups	N	Mean (s.d)	df	t	sig
Gender					
Female	161	8.08 (3.20)	343	3.06	.01
Male	184	7.11 (2.70)			
Marriage					
Single	217	7.84 (2.84)	343	2.78	.01
Married	128	6.94(3)			

In order to analyze the death anxiety scores between different ages ranging from 18 to 53, they were divided into three groups including adolescence (18-21), young individuals (22-39), and middle-age (more than 40 years).

Table 4: ANOVA for Comparing Different Age Groups According to DAS Score

Age groups	N	Mean(S.D.)	df	f	sig
Adolescence 18-21 years	118	7.92(3)			
Young adults 22-39 years	182	7.41(2.9)	(2)342	3.63	.05
Middle age over 40 years	45	6.53(2.6)			

According to Table 4, average death anxiety score is different in various groups as variance analysis test shows $P < 0.05$ significance. In the same regard, Scheffe test showed significant difference between adolescence and middle-age in the whole DAS score at $P < 0.05$, however, there was no significant DAS score difference between the adolescents and young individuals, in one hand, and young individuals and middle-agers, on the other hand. In addition, the relation between total death anxiety score and age was studied through the correlation coefficient and accordingly, coefficient was -0.17 which means a significant negative correlation at $P < 0.01$.

Conclusion

The main purpose of the present research is to study and analyze psychometric characteristics in DAS organized for students. Accordingly, 69.5% females and 68.2% males had an average condition; while, 16.3% females and 19.6% males showed low level of death anxiety in this research. Whereas, 14.2% females and 12.2% males reported high death anxiety.

Studying the scale's internal validity, correlation coefficients were computed between the items of the scale and the total DAS score. Thus, all the items were significant at 0.01 while coefficients totally have an average level and items 2, 12, and 13 indicate lower coefficients in contrast to the other items.

Using principal components analysis and varimax rotation, factor analysis results show that five factors of Eigen values are more than one.

Totally, these 5 factors express 51.4 percent of the total variance and the first factor with 19.9 percent has the highest share. Therefore, DAS is not a single factor scale and includes several factors while other researchers have also affirmed this case. Abbolkhalegh, Bashai and Templer (1993) and Levin(1989-1990) in their researches obtained 5 factors, Abdolkhalegh (1998) 4 factors, Saggino and Kline (1996) 3 factors reported for DAS .

Psychometric characteristics of the DAS shows 0.87 reliability done by test-retest method which is a similar conclusion to Templer (1970), Kelly and Corriveau (1995) research studies. In this research, internal consistency coefficient is 0.75 which is close to Templer (1970) and Kelly and Corriveau coefficients (1995). On the other hand, Alarga and Abdollah (2005) reported higher coefficient. Meanwhile, split-half method shows 0.59 reliability coefficient, which is close to reported males' coefficient in Abdolkhalegh (1991) research. Comparing groups as observed in table 3, females show higher death anxiety and reported three factors for DAS. The difference is significant at $P < 0.01$ level. This result is consistent with the findings of other researchers including: Tramil et al. (1985); Nirmala and Kumar (1987); Abdolkhalegh and Ahmad Omar (1988); Servaty et al. (1996); Al-arga and Abdollah (2005); Otoom et al. (2007). Moreover, different age comparison (table 4) shows that adolescents (18-21 years old) show higher level of death stress in comparison to adults aged over 40 years old. Other research results are consistent with the present results such as Stevens et al. (1980), Troll (1982), Thorson and Powell (1988), Neimeyer and Brunt (1995, reported by Urine 2008), Fortner and Neimeyer (1999), Al-arga and Abdollah (2005). However, this research proved no significant difference between the adolescents and the young individuals and between the young individuals and the adults. Moreover, the correlation between DAS scores and age shows negative correlation (-0.17) and significant at $P < 0.01$. Al-arga and

Abdollah (2005) reported similar results; studying 61 Palestinians between 22-76 years old based on DAS they achieved -0.21 correlation coefficient at $p < 0.05$ level. Therefore, death anxiety decreases with the increase of subjects' age.

Another result of this research shows that single individuals have higher level of death anxiety in comparison to the married ones ($P < 0.01$). It seems that the increase of social supports, experience, age and mature personality, which are usually higher among married people, can be influential on this difference.

In conclusion, this research aims to provide introductory application of DAS among Iranian population, and according to the results, DAS has a good reliability and validity in university students. In addition, it became clear that DAS has a multidimensional structure. Nevertheless, it should be studied among other non-students population to make it more recognized and applicable.

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