

# DEATH ANXIETY IN OUTDOOR-ADVENTURE RECREATION: STUDY OF DEMOGRAPHIC VARIABLES AND EXPERIENCE

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## Abstract:

This study investigated the death anxiety (DA) scores of participants in outdoor-adventure recreational (OAR) activities, and the relationship of the DA scores to several demographic features and experience of DA. The study included 589 individuals with various leisure-time OAR experience levels (131 women, 458 men;  $M_{age}=29.79\pm 9.64$ ). Their sports included climbing ( $n=200$ ), scuba diving ( $n=142$ ), and paragliding ( $n=247$ ). DA was measured by the *Thorson-Powell Death Anxiety Scale*. Overall, the DA scores were low, with no significant differences between OAR activities. However, the DA scores were affected by age and gender, and length of OAR experience. More specifically, the DA scores were highest for 18-28-year-old participants, women, and participants with 4-6 years of a middle-level OAR experience. Previous negative DA experiences did not increase the DA scores.

**Key words:** *adventure recreation, death, death anxiety, experience, outdoor sports*

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## Introduction

Death is a concrete phenomenon that defines the temporal boundaries of life, creating an integrity between death and life that only human beings are aware of. That is, human beings are the only living creatures who are aware that they are mortal. Furthermore, pathologically excessive thoughts of death damage humans psychologically (Karakuş, Öztürk, & Tamam, 2012). If attitudes towards death become imbalanced or inharmonious, anxiety increases so that it becomes difficult for a person to adapt to his/her environment (Aksu & Okçay, 2010; İnci & Öz, 2009). According to Garrow and Walker (2001), this anxiety may be a result of one imagining his/her future of facing death.

Research into the factors causing death anxiety (DA) and fear has continued for over 40 years (Fortner & Neimeyer, 1999; Neimeyer, Wittkowski, & Moser, 2004). These studies reveal that age, gender, religion, and profession can all affect DA (Griffith, et al., 2013). Other studies have investigated DA in specific groups who constantly face the reality of death, such as hospital/medical personnel (Kaklauskaitė & Antinienė, 2016; Lee & King, 2014; Servaty, Krejci, & Hayslip, 1996), those who experienced wars (Nia, Ebadi, Letho, & Peyrovi, 2015; Ron, 2016), and funeral service workers (Harrawood, White, & Benshoff, 2009; Pepitone-Arreola-Rockwell, 1981; Thorson & Powell, 1996).

However, there is no consensus yet on the effects on DA.

Outdoor-adventure recreation (OAR) activities, also referred to as “extreme sports”, are leisure time activities that involve risks or at least the appearance of risk of physical harm. These risky leisure-time activities, such as rock or mountain climbing, surfing, stream skiing, rafting, skydiving, scuba diving, and parachuting, have become a global phenomenon (Oliver, 2006). Having initially been practiced primarily by professionals and “desperate” amateurs and despite causing serious injuries and risk of death, OAR activities have become spare-time activities of ordinary people (Creyer, Ross, & Evers, 2003), with growing worldwide interest and increasing popularity (Brymer, 2010; Soreide, Ellingsen, & Knutson, 2007).

Given the risks, a relationship can be expected between participating in risky leisure-time activities and DA. To test this, several studies have compared DA for participants and non-participants, focusing particularly on skydiving, which is considered one of the most dangerous activities (Pedersen, 1997). For example, Griffith and Hart (2005) found that skydivers had less fear of death than non-skydivers among university students, while Griffith et al. (2013) reported lower DA scores and higher scores on accepting death among skydivers, who were mostly over 60 years old, than among nurses,

volunteer firemen, and a control group. Overall, individuals who participate in high-risk activities have lower DA scores than control groups.

In addition, a few studies have compared participants in OAR activities with different risk levels. For example, Slanger and Rudestam (1997) classified the risk levels of skiing, rock climbing, kayaking, and stunt flying and found no significant differences between the DA scores of the participants of each sport. Similarly, Schrader and Wann (1999) reported no difference in DA scores of participants in high-risk or risk-free recreational activities.

Accordingly, the present study investigated the effects of various demographic features and death anxiety experiences DA scores for participants in several OAR activities.

## Method

### Participants

This study sampled 589 individuals who participated in leisure-time OAR activities (131 women and 458 men;  $M_{age}=29.79\pm 9.64$ ) across three sports: climbing ( $n=200$ ; 61 women, 139 men); scuba diving ( $n=142$ ; 28 women, 114 men,  $M_{age}=30.24\pm 10.07$ ); and paragliding ( $n=247$ ; 42 women, 205 men,  $M_{age}=32.29\pm 10.15$ ). Regarding length of involvement, 109 had participated for less than one year, 155 between one and three years, 110 between

four and six years, 79 between seven and nine years, and 136 for 10 or more years. Regarding perceived level of expertise, 129 described themselves as beginners ( $M_{age}=25.79\pm 9.57$ ), 257 as intermediates ( $M_{age}=29.40\pm 9.56$ ), and 203 as experts ( $M_{age}=32.81\pm 8.37$ ). Regarding actual risks, 157 participants had suffered serious injuries and/or death risk from their OAR activities, while 384 people they knew had been seriously injured and/or experienced death risk (see Table 1).

### Measures

To measure DA, we used the *Thorson-Powell Death Anxiety Scale* (TP-DAS), adapted into Turkish by Karaca and Yıldız (2001) and tested for reliability and validity. Reliability was tested with the split-half method. The split-half reliability coefficients were .73, while the Cronbach Alpha coefficient for internal consistency was .84. TP-DAS scores can range from 0 to 100 with higher scores indicating higher anxiety levels (Karaca & Yıldız, 2001). In addition, a questionnaire was developed to identify the participants' experience levels and socio-demographic features.

### Procedures

Three diverse OAR activities that are widely performed in Turkey were selected to investigate the participants' DA levels. The training/competi-

Table 1. Sample characteristics for participants

	Total N=589	Climbing n=200	Scuba diving n=142	Paragliding n=247
Age	M=29.79 SD=9.64	M=26.45 SD=7.56	M=30.24 SD=10.07	M=32.29 SD=10.15
Gender				
Male	458 (77.8%)	139 (69.5%)	114 (80.3%)	205 (83.0%)
Female	131 (22.2%)	61 (30.5%)	28 (19.7%)	42 (17.0%)
Level of expertise				
Beginner	129 (21.9%)	43 (21.5%)	37 (26.1%)	49 (19.8%)
Intermediate	257 (43.6%)	114 (57.0%)	47 (33.1%)	96 (38.9%)
Expert	203 (34.5%)	43 (21.5%)	58 (40.8%)	102 (41.3%)
Length of participation				
1 year <	109 (18.5%)	42 (21.0%)	32 (22.5%)	35 (14.2%)
1-3 years	155 (26.3%)	69 (34.5%)	31 (21.8%)	55 (22.3%)
4-6 years	110 (18.7%)	39 (19.5%)	27 (19.0%)	44 (17.8%)
7-9 years	79 (13.4%)	17 (8.5%)	24 (16.9%)	38 (15.4%)
10 years >	136 (23.1%)	33 (16.5%)	28 (19.7%)	75 (30.4%)
Have you faced the risk of death or serious injury in this sport?				
Yes	157 (26.7%)	43 (21.5%)	38 (26.8%)	76 (30.8%)
No	432 (73.3%)	157 (78.5%)	104 (73.2%)	171 (69.2%)
Have any of your friends faced the risk of death or serious injury in this sport?				
Yes	384 (65.2%)	109 (54.5%)	93 (65.5%)	182 (73.7%)
No	205 (34.8%)	91 (45.5%)	49 (34.5%)	65 (26.3%)

tion calendars of the institutions running the three activities (Turkish Mountaineering Federation for climbing, Turkish Underwater Sports Federation for scuba diving, and the Turkish Aeronautical Association for paragliding) were referred to in order to find opportunities to collect data from participants. The data were collected during 2015-2016.

### Evaluation of the data

The data were analysed using PAWS 18.0 statistics program. Kolmogorov-Smirnov and Shapiro-Wilk tests were administered to test normality of splitting. This showed that the DA scores were not normally distributed ( $p < .05$ ). When the kurtosis and skewness coefficient of the dimensions that did not show normal splitting were examined, the skewness coefficients were between +2 and -2, which indicated that the scores showed normal splitting (Pallant, 2001). The general, positive, and negative emotional scores were +2 and -2. Therefore, since

the splitting of the scores was considered normal, the independent samples  $t$ -test and the one-way ANOVA analysis were used in data analysis; significance was set at  $p < .05$ .

### Results

This study measured various factors affecting DA and the DA scores of OAR activity participants. Overall, the participants' TP-DAS scores were low (see Table 2), with no significant differences between DA scores for climbers, scuba divers, or paragliders ( $F = .262$ ,  $p = .769$ ).

However, the  $t$ -test results indicated a significant difference in TP-DAS scores by gender ( $p < .05$ ). Specifically, women's scores ( $\bar{x} = 44.54 \pm 17.35$ ) were higher than men's ( $\bar{x} = 39.42 \pm 15.41$ ). The one-way ANOVA test also indicated that the TP-DAS scores varied by age ( $F = 7.760$ ,  $p = .00$ ). The Tukey's *post-hoc* test results indicated that the DA scores were significantly higher in the youngest age group than

Table 2. Random variables and ANOVA  $t$ -test table for the TP-DAS scores

		Total	Climbing	Scuba	Paragliding
	ANOVA	40.55±15.99	M=40.97±14.71	M=40.94±16.52	M=39.99±16.71
	Post-hoc test	.262			
		-			
Age	A1.18-28	43.23±15.59	42.27±14.92	44.54±16.38	43.58±15.97
	A2.29-39	39.00±16.53	38.33±13.83	38.18±16.81	39.76±17.80
	A3.40-50	35.22±13.05	42.33±12.63	34.94±10.77	33.42±13.54
	A4.>51	33.71±18.58	19.33±4.77	34.33±21.88	37.00±18.32
	ANOVA	7.760**	3.182*	2.760	4.113*
	Post-hoc test	A1-A2 A1-A3 A1-A4		-	A1-A3
Gender	A1. Male	39.41±15.41	38.98±14.34	40.31±15.70	39.20±15.98
	A2. Female	44.54±17.35	45.49±14.65	43.54±19.60	43.83±19.62
	$t$ -test	-3.267**	-2.938*	-.927	.120
Perceived level of expertise	A1. Beginner	40.16±16.29	41.84±12.84	39.81±17.82	38.94±17.92
	A2. Intermediate	41.40±15.98	41.27±15.36	41.32±16.77	41.59±16.52
	A3. Expert	39.72±15.82	39.28±14.87	41.36±15.76	38.98±16.33
	ANOVA	.673	.380	.116	.724
	Post-hoc test	-	-	-	-
Length of participation	A1. <1 year	41.93±16.23	42.17±13.75	41.59±18.23	41.94±17.47
	A2. 1-3 years	39.68±14.47	40.94±14.88	38.87±14.26	38.56±14.21
	A3. 4-6 years	45.78±15.89	39.92±15.32	50.22±14.86	48.25±15.81
	A4. 7-9 years	40.22±15.97	38.47±15.93	39.92±13.87	41.18±17.49
	A5. >10 years	36.40±16.43	42.00±14.80	34.43±17.41	34.67±16.39
	ANOVA	5.743**	.278	3.630*	5.193**
Post-hoc test	A2-A3 A3-A5	-	A3-A5	A2-A3 A3-A5	
Risk of death / serious injury (Oneself)	A1. Yes	40.31±17.01	38.77±16.41	40.24±17.67	40.66±17.23
	A2. No	40.64±15.62	41.29±14.25	41.20±16.15	39.69±16.51
	$t$ -test	-.218	-.602	-.307	.245
Risk of death / serious injury (Friends)	A1. Yes	40.89±16.39	39.91±14.78	42.24±16.82	40.80±17.10
	A2. No	39.91±15.23	42.23±14.60	38.49±15.79	37.72±15.45
	$t$ -test	.713	-1.113	1.288	1.275

in the other groups: 18-28 age group ( $\bar{x}$ =43.23) versus 29-39 age group ( $\bar{x}$ =39.00), 40-50 age group ( $\bar{x}$ =35.22), and 51 or older ( $\bar{x}$ =33.71).

The TP-DAS scores also varied significantly according to length of OAR experience ( $F=5.743$ ,  $p=.00$ ). The Tukey's *post-hoc* test results indicated that participants with 4-6 years of experience ( $\bar{x}$ =45.78) had significantly higher DA levels than those with 1-3 ( $\bar{x}$ =39.68) or over 10 years of experience ( $\bar{x}$ =36.40).

Finally, there were no significant differences between the TP-DAS scores and the level of expertise ( $F=.673$ ,  $p=.510$ ), participants who faced injury or risk of death ( $t=-.218$ ,  $p=.828$ ), or participants friends' injury or risk of death ( $t=.713$ ,  $p=.476$ ).

## Discussion and conclusion

It is expected that participants in highly risky adventure recreational sports are more emotionally stable than those involved in other sports branches (Kajtna, Tusak, Baric, & Burnik, 2004). However, if this balance is lost, then the risk of accidents and death may increase. For example, Miller and Taubman (2004) argue psychological variables may explain why 41% of deaths in scuba diving occur for unknown reasons. Anxiety and panicking are reported to be the main reasons for accidents and deaths in scuba diving (Raglin, 1998). Considering that excessive DA affects an individual's life and psychology, determining the factors that affect DA in participants in risky activities like adventure/outdoor sports will contribute to decreasing the risk of accidents and deaths from these activities. In the present study, the DA levels were related to age, gender, and length of participation in OAR but not to the specific activity, the perceived level of expertise, or knowledge of death and/or accident risks of fellow participants.

Regarding age, most studies report a negative two-way relationship between age and DA (e.g., Depaola, Griffin, Young, & Neimeyer, 2003; Neimeyer, et al., 1988). Also, this study found that age significantly affected DA, with the participants of 18-28 years of age having the highest DA scores, while levels decreased with the age. According to Russac, Gatliff, Reece, and Spottswood (2007), DA peaks in the 20s and declined significantly thereafter. For Neimeyer, Moore, and Bagley (1988), DA decreases with age because of a better quality of life, increased religious commitment, and/or more experiences on the matter. As they age, individuals are believed to start accepting death, which decreases death anxiety.

Regarding gender, it seems impossible to generalize about its relationship with DA from previous research. In some studies, women have higher DA scores (Cotter, 2003; Depaola, et al., 2003; Mc Donald, 1976; Templer, 1970), whereas other studies (Abdel-Khalek & Lester, 2003; Fortner &

Neimeyer, 1999) found no difference. This may be because men are less willing to express their fears than women (Kastenbaum, 2000). Another possible explanation is that women are more anxious about providing an orderly life for their family if they die (Kastenbaum, 2010).

Among participants in OAR activities, women have higher DA than men. These activities carry various risks and women tend to be much less attracted to risky behaviours (Lee, Tseng, & Jan, 2015). Taking risky behaviour and DA into consideration (Cotter, 2003), it is of no surprise that women participants have high DA given their tendency to refrain from risky situations.

Experience is another variable that is thought to affect DA in OAR activity participants. In the present study, participants were asked to judge their level of expertise and the length of their participation in the activity. Thus, the first question was related to self-perceptions, while the second aimed to identify experience objectively. The results showed a significant difference between DA and length of participation but no difference for self-reported expertise and DA. Since both questions aimed to determine the participants' level of experience, we expected the answers would have been correlated. However, the results diverged, possibly because the participants' perceptions concerning their experience level might not have reflected the reality.

Previous studies have reported a negative relationship between DA levels and length of participation in particular OAR activities. For example, Griffith, Gasse, Hart, Adams, and Sargent (2018) found that student skydivers feared death more than experienced skydivers. In contrast, we did not find the expected negative linear relationship. Instead, mean DA scores were highest for the intermediate experience group (4-6 years of experience).

Demirhan (2005) reported that experienced OAS participants had higher risk assessment and perception levels than those who had not experienced such activities because beginners were barely aware of potential accidents due to a lack of knowledge of the actual risks of the activities they had joined. Consequently, inexperienced OAR participants may have lower DA than experienced participants.

Death anxiety also decreases with experience in OAR activities because of increased control over performance. Experienced participants, who feel being in control, have positive attitudes towards stimulation. Conversely, when control decreases or disappears, this causes anxiety and fear (Pomfret, 2006). Thus, increased experience enables improved control of events during OAR activities, which in turn decreases DA.

Individuals may develop post-traumatic stress disorders because of negative past experiences

(Davis-Berman & Berman, 2002). The present study therefore investigated whether DA was affected by the participants' own negative experiences of accidents and/or death risks and/or by that their friends had experienced. However, these adverse experiences had no effect on DA. This may be because OAR participants have accepted the notion of death. According to Brymer (2010), and contrary

to popular belief, participants in OAR activities are focused on taking risks; on the contrary, they are aware that they may die from an accident. They may therefore consider the risk of death as an experience to learn from rather than a cause of anxiety. However, further research is required on this issue as well as regarding the effects of past adverse experiences on death anxiety.

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