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## Collegiate Skydivers: Do They Fear Death?

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**ABSTRACT** - Skydiving is considered to be among the most dangerous sporting activities in the world. Each time a skydiver exits an aircraft, they essentially face death. Although there is a relatively high risk of death compared to other sports, a large number of individuals participate in this activity in a recreational capacity. The present study compared 54 collegiate skydivers (high-risk) and 54 college students who never made a skydive (low-risk) on death anxiety. Death anxiety was measured using the Collett-Lester Fear of Death Scale (Lester & Abdel-Khalek, 2003). The analyses revealed that skydivers had lower levels of death anxiety on three of the four dimensions. This finding is in opposition of studies that have found that individuals working in death-risk occupations (e.g., police officer, firefighter) had higher death anxiety scores compared to control groups. Possible explanations for these divergent findings include the extent to which individuals have personal control over death-risk situations and self-esteem enhancement.

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There are some recreational activities that are at the high end of the risk-taking spectrum because there is a high probability of injury or death. Some of these activities include spelunking, mountain climbing, hang gliding, big wave surfing, and skydiving, to name a few. Among these risk-taking behaviors, skydiving is ranked as being among the most dangerous in the world (Pedersen, 1997). A recent study by Barrows, Mills, and Kassing (2005) reported the injury rate related to civilian skydiving to be 17.4/10,000 (injuries/skydives), whereas significant injuries (i.e., those requiring treatment in an emergency department) occurred at a rate of 6.0/10,000 (injuries/skydives) and the rate of hospitalization was 1.8/10,000 skydives. With regards to fatalities, Griffith and Hart (2002) conducted a study on archival data and found that approximately 34 civilian skydiving fatalities occur each year. Taking into consideration the total number of jumps, there is a fatality for every 95,000 jumps that are made.

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Recreational skydiving, therefore, can be considered an inherently dangerous pastime as it typically involves jumping out of an aircraft while wearing a system consisting of a main parachute and a reserve parachute connected to a harness. The basic goal of a skydiver is to exit an aircraft, have a controlled freefall, deploy the main parachute at a pre-determined altitude, and land safely. In the case of a canopy malfunction, the jumper needs to initiate the appropriate emergency procedures and activate the deployment of a reserve canopy. There are potential hazards during many steps of the skydiving process including: aircraft take-off, the exit, freefall, malfunctioning equipment, canopy collisions, and hard landings, to name some of the more common problems. Although skydiving may be considered a dangerous activity, there are more than 30,000 active members of the United States Parachute Association.

If a skydiver does not follow the appropriate procedures during each jump, there is an increased probability of death. Another way of looking at it is that skydivers "save their own lives" each time they jump out of a plane by initiating the appropriate exit, freefall, canopy deployment, and landing procedures. Doka, Schwarz, and Schwarz (1990) suggested that recognition of the assumptions of a high-risk sport is necessary in order to understand the impact of death. Skydivers are initiated of the potential dangers of the sport through a variety of sources including: training and continuing education, publications with incident reports (i.e., *Parachutist* is the official publication of the United States Parachute Association which provides detailed summaries of reported fatalities and injuries on a monthly basis to all members), informal discussions with other skydivers, and formal waivers of liability that are kept current on an annual basis at each dropzone. It is the hope of instructors that students are indoctrinated with the understanding that skydiving is a hazardous undertaking that can result in death, but it can be reasonably safe if the appropriate preventive safety steps are taken.

Several studies have investigated the relationship between death-related professions and death anxiety. There is support that involvement in death-risk or death-exposure occupations are related to increased anxiety regarding one's own death. This has been found among physicians (Feifel, 1969), nurses (Meisenhelder, 1994), hospice volunteers (Robbins, 1992), suicide and crisis intervention workers (Neimeyer & Dingemans, 1980), nursing home staff (DePaola, Neimeyer, Lupfer, & Fiedler, 1992), firefighters and police officers (Hunt, Lester, & Ashton, 1983) and undertakers (Thorson & Powell, 1996). The purpose of this study was to compare death anxiety of skydivers to a matched sample of college students because little is known about death anxiety among those who face death in a recreational capacity.

## **Method**

### ***Participants***

Participants included 108 college students. A total of 54 of these individuals were experienced skydivers (defined as having at least an A-license; this license represents a standardized safety course regulated by the United States Parachute

Association and requires a minimum of 25 jumps and is regarded as a novice license) and 54 individuals who never made a skydive. The data from the skydivers were collected at the annual collegiate nationals skydiving event which is a competition for skydivers attending college. In this sample, there were 50 males and 4 females which represented 57% of the total number of registered competitors and they had an average of 196 jumps. A comparison sample of 54 students from a mid-sized university was matched to the skydivers on gender and age.

### Procedures

One researcher attended the collegiate national skydiving event and approached participants prior to the beginning of the competition. After jumpers registered for the event, they were asked if they would be willing to participate in a study. A total of 64 individuals were approached and 54 agreed to participate (84%). Participants were told about the nature of the study, were provided with a consent form and a 1-page survey, and were asked to complete it. At the university, participants were drawn from a pool of research participants and individuals were matched with the skydiving sample on the basis of gender and age.

### Instruments

The most recent revision of the Collett-Lester Fear of Death Scale (Lester & Abdel-Khalek, 2003) was used to assess fear of death. The revised Collett-Lester Fear of Death scale is a 28-item instrument that measures four fear dimensions: death of self, dying of self, death of others, and dying of others. Each subscale has 7-items and the instrument instructs respondents to rate how disturbed they are by 28 listed aspects of dying on a 5-point Likert-type scale with responses ranging from 1 = not at all...5 = very. The score on each subscale can range from 7-35 with higher values reflecting increased levels of death anxiety. The internal consistency reliabilities for the four fear dimensions (i.e., death of self, dying of self, death of others, and dying of others) were .84, .76, .85, and .84, respectively.

**Table 1**  
**Mean Fear of Death Subscale Scores of Collegiate Skydivers and Non-Skydivers**

Subscale	Skydivers		Non-Skydivers	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Death of self	16.4	6.9	18.9	5.8
Dying of self	20.8	6.4	22.5	4.7
Death of others	21.2	6.7	25.6	4.9
Dying of others	22.2	6.3	24.8	5.3

Note: Scores on each subscale can range from 7-35 with larger numbers reflecting higher levels of death anxiety in that domain. N = 54 for each group.

## Results

It was of interest to compare the collegiate skydivers (high-risk) and non-skydivers (low-risk) on the four fear of death dimensions. The analyses consisted of a series of four independent t-tests. On each subscale, skydivers had lower means compared to the non-skydiving group (see Table 1) and significant differences were found for the death of self,  $t(106) = 2.05, p < .05$ , death of others,  $t(106) = 3.88, p < .001$ , and dying of others,  $t(106) = 2.34, p < .05$ .

## Discussion

College students who participated in a high-risk recreational activity had lower levels of death anxiety compared to those who do not engage in such pursuits. Skydivers were less anxious about their own death, the death of others, and the dying of others compared to the low-risk group. The present findings did not replicate prior research that reported increased death anxiety or no differences among those in death-risk occupations compared to controls (e.g., Lewis, Espe-Pfeifer, & Blair, 1999; Hunt, Lester, & Ashton, 1983). There are two factors to consider regarding the present study and prior research that examined death-risk occupations that may be responsible for the divergent findings. The first factor is personal control. Participants in death-risk occupations do not exercise personal control as to when they will face death. In other words, police officers and firefighters cannot predict when they will be in a life threatening situation. Skydivers, on the other hand, can predict when they will face death because they have personal control over if and when they jump out of an aircraft. And each time they exit from an aircraft, they do in fact face death. The importance of personal control and risk taking behaviors has been demonstrated by Horswill and McKenna (1999) who found that in high risk situations, automobile drivers (individuals in control) exhibited less anxiety than passengers (not in control).

Another factor to consider is self-esteem. According to Miller and Mulligan (2002), individuals with a sense of control over their fate, may engage in risky behaviors if those behaviors lead to an increased level of self-esteem. Participants often gain an understanding of the dangers inherent to skydiving from instructors and experienced jumpers. Information that is stressed includes the correct operation and maintenance of equipment, practice of the necessary skills, and guidelines for decision making, to name a few. By following the established safety recommendations and cheating death by having a successful skydive, skydivers may enhance their self-esteem. Another potential self-esteem enhancement may actually involve fatalities within the skydiving community. According to Doka et al. (1990), deaths in high-risk sports may disrupt the sentimental order of the skydiving community. Each skydiving fatality challenges an underlying assumption of the sport. That is, the sport is relatively safe if one properly executes the appropriate procedures and follows protocol. A recent study (Hart & Griffith, 2004) reported that human error was the principal cause of skydiving fatalities in 86% of the cases. Inattention, decision errors, and action errors played a prominent role in the majority of these mishaps. The

remaining fatalities not attributable to human error account for a fairly small percentage of deaths and may be considered rare. Therefore, knowledge regarding the causes of most fatalities (i.e., human error) may seek to absolve skydivers of guilt and liability in the deaths of others (Doka et al., 1990). This, in turn, may increase their self-esteem and decrease fear of death because successful skydivers faced the same potential fate, but did not die because they carried out the appropriate procedures.

The purpose of this study was to determine if there were death anxiety differences between high and low risk takers within a college population. Differences were clearly identified and distinct patterns were shown such that individuals who engage in risky behaviors in a recreational capacity exhibited less death anxiety compared to those who do not engage in such activities. Another purpose of this study was to serve as a foundation to determine why these patterns emerged. Two factors that should be taken under consideration include personal control and self-esteem. Perhaps by choosing to cheat death, one comes to gain a greater appreciation for living which may be related to an increase in self-esteem and a corresponding reduction in death anxiety. At this point, the effects of these two factors are speculative and were not examined within in this study. Future studies might consider examining the effects of personal control and self-esteem on recreational risk-taking behaviors in order to gain a better understanding of why individuals are motivated to cheat death for fun.

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