

# Hurricane Madness: Teaching, Learning And The Importance Of Flexibility In The Wake Of Disaster

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## ABSTRACT

*The present study examines stress among college students (N=107) that were exposed to natural disasters at the start of the 2004 Fall Semester after Hurricane Charley and Frances battered Central Florida within three weeks of each other. The study also examines adjustments made by two faculty members during the semester in attempts to reduce student stress while maintaining high academic standards in the wake of disaster. Findings indicate that students experienced a substantial amount of stress as a result of the storms. Of the students surveyed 50 percent indicated they suffered lost wages or income, 65 percent sustained some damage to their residences, and 63 percent experienced moderate to extremely high levels of stress. Concerning the adjustments implemented by the instructors, 84 percent of the students agreed or strongly agreed that the academic quality of their education was not compromised. While educators must have well-designed and planned courses, when disaster strikes, it is imperative that they incorporate creative and flexible teaching methods and policies in their classrooms.*

## INTRODUCTION

During a 44-day period, four hurricanes raged through the Florida peninsula at the beginning of the 2004 Fall Semester. Charley, Frances, Ivan and Jeanne inflicted severe damage from the Keys to the Panhandle, destroying businesses, homes, utilities, and roadways. These storms did not spare the 28 public community colleges in the state. The Florida Department of Education (FLDOE, 2004) in conjunction with Florida Community College Risk Management Consortium reported that campuses sustained almost \$23 million in damages through October with damages still being assessed. In addition, Hurricane Charley closed 16 community colleges for 28 days, Hurricane Frances closed 25 community colleges for 65 days, Hurricane Ivan closed 9 community colleges for 30 days and Hurricane Jeanne closed 16 community colleges for 26 days.

The impact of such natural disasters does not transcend solely into monetary terms and days lost at work. The trauma of these events disrupted the patterns of our daily lives. When people emerged from their shelters and attempted to resume their activities, they soon discovered that prior assumptions and expectations no longer applied. In the aftermath of the hurricanes, Floridians' regular behavior patterns required adjustments.

Many studies have examined the psychosocial consequences of disasters (Norris, 2002). Generally speaking, disasters fall into three basic categories: those caused by weather or geophysical forces, human-caused disasters resulting from negligence or error, and human intentional disasters in which violence is used to cause harm (Norris, 2002). Regardless of their cause, disasters can have devastating social, psychological and economic consequences on populations exposed to them.

Studies on disasters include a wide range of phenomena and destruction such as the nuclear meltdown at Three Mile Island (Bromet, Parkinson, & Dunn, 1990), the terrorist attack on the World Trade Center (Galea, Ahern,

Resnick, Kilpatrick, Bucuvalas, Gold, & Vlahov, 2002), the Oklahoma City bombing (North, Nixon, Shariat, Mallonee, McMillen, Spitznagel and Smith, 1999) and the eruption of Mt. St. Helen (Shore, Tatum and Vollmer, 1986), to mention just a few.

While research concerning hurricane disasters also exists (David, D., Mellman, T., Mendoza, L., Kulick-Bell, R., Ironson, G. and Schniederma, N., 1996; Logue, J., Hansen, H. and Struening, E., 1981; Norris, Perilla, Riad, Kaniasty, and Lavizzo, 1999; Perilla, Norris and Lavizzo, 1998; Thompson, Norris and Hanacek, 1993), a review of the literature did not reveal any studies about hurricane disasters, college students and teaching strategies to help students cope with such disasters.

The present study examines four criminal justice and three psychology courses delivered during the Fall Semester of 2004. The study examines the stress experienced by students in these courses, the adjustments made by the instructors, how students perceived these adjustments and whether or not students thought the adjustments compromised the quality of education in their respective courses. The adjustments implemented included common sense measures such as changing scheduled exam dates, relaxing the attendance policy, reducing lecture time, and providing students with notes, study guides and classroom study time.

## **DISASTER RESEARCH**

A substantial amount of literature exists concerning the general public and their reactions to disasters. Fuentes (1990) studied the victims of earthquakes in Mexico. Lima, Pai, Santacruz, and Loranzo (1991) examined victims after a volcano eruption in Armero, Colombia. Smith, Robins, Przybeck, Goldring and Soloman (1986) explored the psychosocial consequences for flood victims, and Bowler, Mergler, Huel and Cone (1994) studied the effects on a community of a railroad chemical disaster. Regardless of the type of event, Norris, Perilla, Riad, Kaniasty and Lavizzo (1999) indicate that a substantial amount of psychological consequences exist, including anxiety; depression, sleep disorders and even post-traumatic stress disorder (PTSD).

From a theoretical perspective, conservation of resources stress theory (COR) developed by Hobfoll (1989, 1998) suggests that as individuals move through life, they attempt to build and retain resources they have identified as contributing to their self-enhancement. Hobfoll postulates that stress occurs when there is a threat of losing one's resources in which individuals have invested in over time (1989). Resources identified by Hobfoll fall into four general categories: object, which consist of physical possessions like one's home, furnishings, and automobile; personal conditions such as marital and employment status; personal characteristics which include locus of control, self-esteem, knowledge and skills; and energy such as time, money and insurance. Stress occurs then when resources are threatened or lost, or when individuals invest energy without any gain (Taylor, 1998).

Stress means different things to different people and not everyone handles stress the same way or even perceives stress the same way. However, what research has consistently borne out is that stress is a nonspecific response of a body based on the demands placed upon it at any given time. Stress is not simply a reaction that everyone experiences the same way (Selye, 1956). It cannot be avoided – your body even experiences stress while you sleep (Bernstein, Clarke-Stewart, Penner, Roy, and Wickins, 2000).

The effects of exposure to stress and disasters can have long lasting implications for individuals and communities. Depending on the events that occurred in relationship to the disaster, some individuals may exhibit effects as long as five years after their traumatic experience (Davidson, Flemming, and Baum, 1985; Logue, Hansen and Struening, 1981). These effects may be a result of frustrations that have occurred because of the magnitude of the disaster encountered. Once the routines of daily life have been reestablished after the initial disaster, it is possible for the daily hassles to again take a back seat to the structure that we impose on ourselves in order to meet the demands of our lives (Dohrenwend & Shrout, 1985).

With regards to research into specific populations, middle-aged adults appear to be more adversely affected than younger or older populations (Gleser, Green and Winget, 1981; Phifer, 1990; Price, 1978). Several studies have demonstrated that female victims of disaster are at greater risk for post-disaster depression and post-traumatic

stress disorder as well (De la Fuente, 1990; Green, et al., 1990; Shore et al, 1986; Steinglass and Gerrity, 1990). When racial and ethnic factors are considered, much less is known about victims of disaster and how different races or ethnic groups vary across stress measures (Norris, Perilla, Riad, Kaniasty, and Lavizzo, 1999). In a sample of 404 residents of southern Florida, for example, Perilla, Norris and Lavizzo (2002) found that six months after Hurricane Andrew, the rate of PTSD varied substantially among Whites, Blacks and Latinos. Latinos exhibited the highest rates of PTSD at 38 percent, followed by Blacks at 23 percent with Whites demonstrating the lowest rate at 15 percent. Regardless of age, gender, race or culture however, the body's adaptability to stress is limited. Under constant stress, physical exhaustion eventually develops and all individuals become a victim of the constant wear and tear produced by stress (McEwan, 1998).

### **HURRICANE MADNESS**

On August 13<sup>th</sup> Hurricane Charley slammed into the west coast of Florida eventually making its way through Central Florida, wreaking havoc and destruction. When it was over, millions of people were without electricity and Florida residents had sustained billions of dollars in damage. Charley struck just ten days before classes were scheduled to start at Valencia Community College. Less than two weeks after the semester started Hurricane Frances touched down on the east coast of Florida before moving into Central Florida. Again, millions of people found themselves without electricity and billions more dollars in damage was delivered to residents of Florida by Frances' slow grinding trek through the state.

As a result of these two devastating natural disasters, college campuses throughout the state were forced close as people evacuated and prepared for what was to come. During the second storm, the already-battered East Campus served as an emergency shelter for 326 members of the local community. When it was all over, another hurricane loomed in the background. Hurricane Ivan would have had tremendously devastating effects had it made its way through Central Florida just one week after Frances. But Central Florida was spared from Ivan as it made landfall in the Panhandle of Florida as a category three storm. The destruction it left behind appears to be more devastating than the wrath of both Charley and Frances combined. And then on September 25<sup>th</sup>, Hurricane Jeanne buffeted Central Florida for one final slap with category three winds and torrential rains, closing ports, causeways, roads, and, once again, our colleges.

### **MAKING ADJUSTMENTS**

Immediately after Hurricane Francis, the Provost of Valencia's East Campus sent a college-wide e-mail that shared the observations made by a Psychology professor. The instructor warned that these "massive acts of nature tend to destroy our illusion of control over our lives" (Schneck-Rachiele, personal communication, October, 4, 2004). She further advised that apathy, meltdown, difficulty staying on task, irritability, and absenteeism would likely increase among all members of our campus community in the wake of the storms. It was not long before we witnessed all the symptoms of chronic fatigue as faculty, staff, and students juggled the tasks of repairing dwellings and damaged cars, caring for children at home while schools remained closed, and coping without electricity, natural gas, phones, or cable television!

Before, between, and after the hurricanes, the administration and faculty took measures to alleviate the psychosocial impact of the disasters. The college extended many deadlines, expanded its normal business hours for student services, and suspended late fees. The Valencia Foundation, with some help from the Florida Association of Community Colleges, offered grants of up to \$500 for students and college employees who suffered drastic financial loss from the storms. The Human Resources department, with the encouragement of the President and the Executive Council, even created a new area of employee leave - up to 16 hours of "Hurricane Leave" for employees in need of time off to meet with insurance adjusters or to make emergency repairs. Ads placed in the Orlando Sentinel, news releases to the media, and notices on the College's website and telephone answering system outlined these measures to the public.

The faculty also took steps to ease the transition back to a focus on learning in the classroom. Professors realized that strict attendance policies that reinforced the "Start Right" principles of our Strategic Learning Plan

would impede the progress of even our brightest students during this period of extreme stress. Many instructors relaxed or dropped their attendance policies, changed exam schedules, reduced the amount of material covered on the first exam, provided study guides to reinforce learning, or offered supervised in-class study time as a respite from outside pressures.

Many instructors were also sensitive to the illnesses that students developed after the impact of the storms and allowed make-up exams or scheduled alternative class times and discussions. Coping techniques varied among faculty and students. Many students could not wait to get back to classes in order to have some structure and normalcy imposed on their lives. This appeared to be a good coping mechanism for these students. In the end however, as educators, we were all directly or indirectly affected by these devastating events.

## **METHODOLOGY**

Using descriptive statistics, the present study examines students in four criminal justice and three psychology classes taught at Valencia Community College located in Orlando, Florida. A total of 107 students enrolled in courses during the fall of 2004 were surveyed. The main purpose of the study is to determine how students were impacted by an unusual hurricane season and how students perceived adjustments and teaching strategies implemented by their instructors during this exceptionally stressful season.

The survey instrument probed four areas: 1) basic demographic data such gender, race, age, marital status, student status and employment status; 2) the type of personal experiences students encountered as a result of the two major hurricanes that hit Central Florida, such as home damage, lost wages and utilities; 3) the stress students experienced as a result of the storms; and 4) how adjustments made to their courses as a result of these storms impacted the levels of stress they experienced and whether or not the quality of their education was compromised. Surveys were distributed in class approximately four to five weeks after Hurricane Frances struck Central Florida.

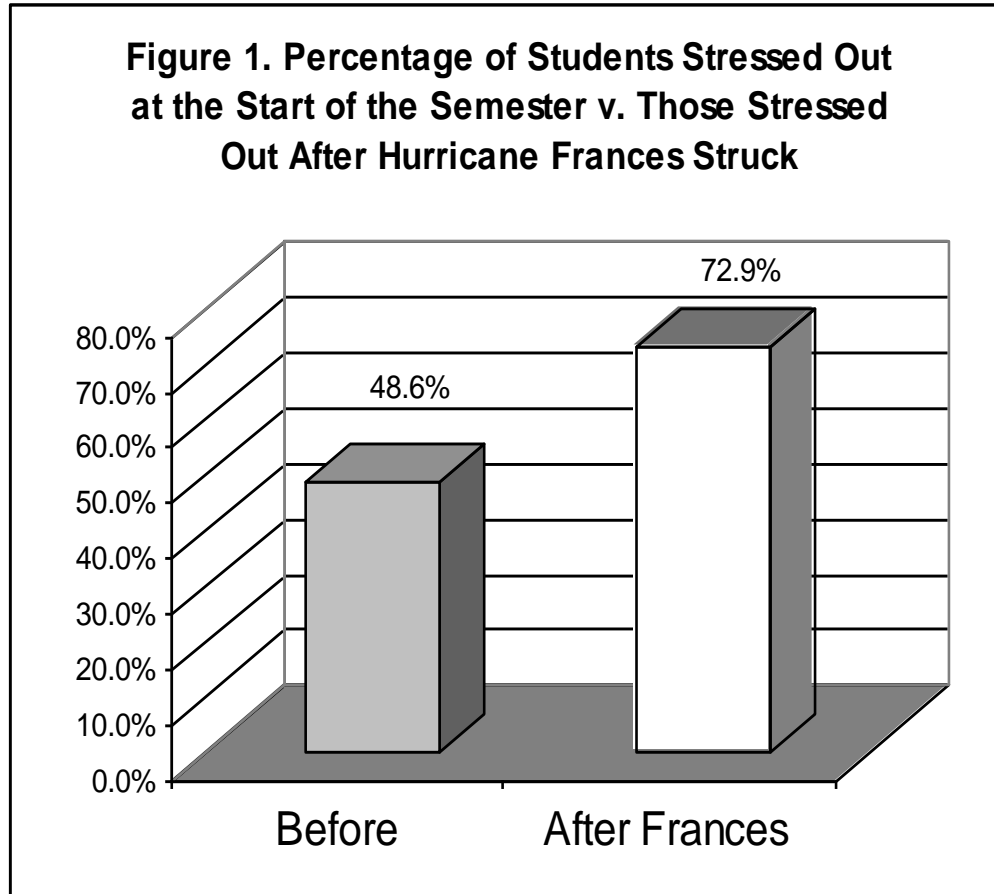
Levels of stress experienced were measured as no stress, mild, moderate, high and extremely high. Concerning course adjustments implemented by the instructors, students were asked whether they strongly agreed, agreed, disagreed or strongly disagreed if the adjustment helped reduce their stress levels.

## **FINDINGS**

The average age of students surveyed was 23.1 years of age (SD 6.2). Of those surveyed 36.4 percent were males and 63.6 percent females. Regarding marital status 81.3 percent indicated they were single, while 11.2 percent indicated they were married. The remaining 7.4 percent reported being either divorced or separated. When asked about children 80 percent indicated they did not have children at home, while the remaining 20 percent indicated they did have children at home. Concerning race and ethnicity, 61.7 percent of the sample was Caucasian, 13.1 percent Black, 16.8 percent Latino and remaining 8.4 percent identified themselves as belonging to some other race or ethnic category. With regards to their current student status 71 percent indicated they were enrolled full-time while the remaining 29 percent indicated they were part-time students. More than 32 percent indicated they were employed full-time, while 39.3 percent stated they were employed part-time and 28 percent indicated they were not employed at all.

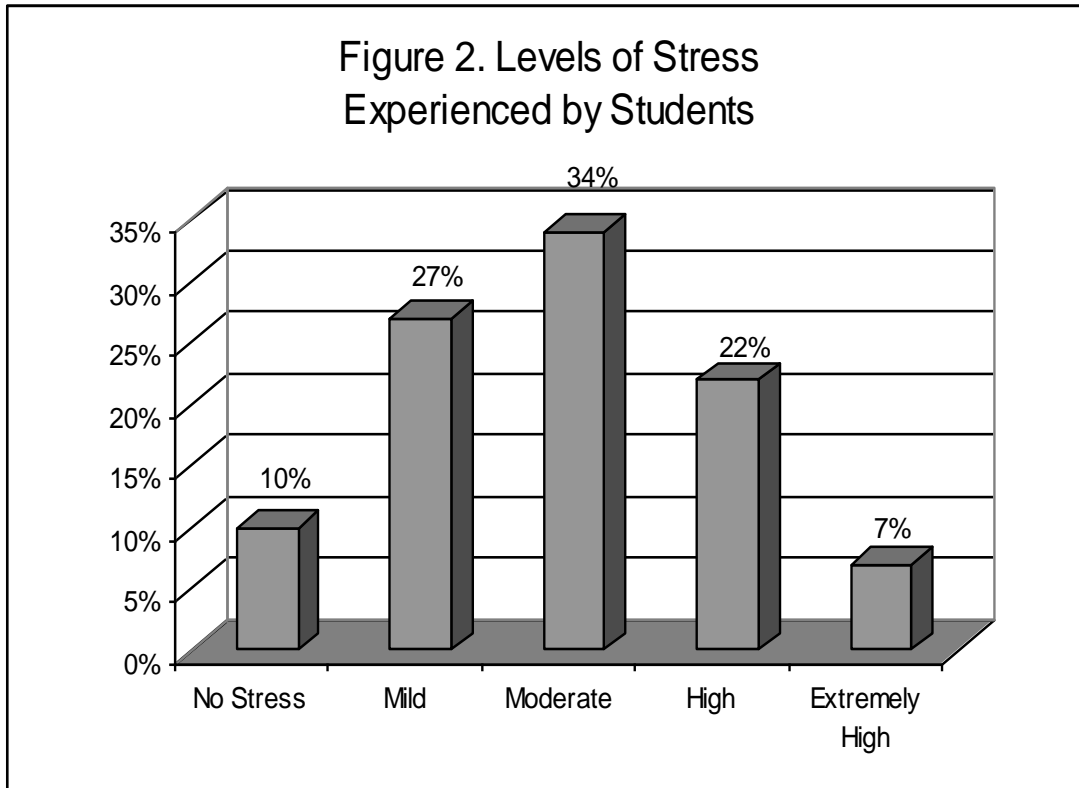
As far as their hurricane experiences are concerned, 65.4 percent indicated they sustained some type of damage to their homes. Concerning the degree of damage 45.8 percent indicated they sustained mild damage, 15.9 percent moderate damage, and 4.7 percent indicated they suffered extensive damage to their primary residence. More than 38 percent of the students indicated they evacuated as a result of the storms while 50 percent stated they lost income or wages as a direct result of the storms and 28 percent indicated they were required to work additional hours because of the storms. On average, students lost 366 dollars in income or wages with one student claiming a loss of nearly 1,500 dollars. When asked about loss of electrical power to their residence 93.5 percent of the sample indicated they lost power to their residence as a result of the storms. On average, students indicated they were without power for 6.2 days, with some indicating that they were without power for 30 days.

With regards to stress experienced by students, 48.6 percent indicated they were stressed out at the start of the semester. After Hurricane Frances struck, that number increased dramatically to 72.9 percent.



In terms of stress levels, more than 63 percent indicated they experienced moderate to extremely high levels of stress. Only 10.3 percent indicated they experienced no stress, while 37.4 percent stated they experienced mild stress, 33.6 percent moderate stress, 22.4 percent high levels of stress and 6.5 percent stated they experienced extremely high levels of stress.

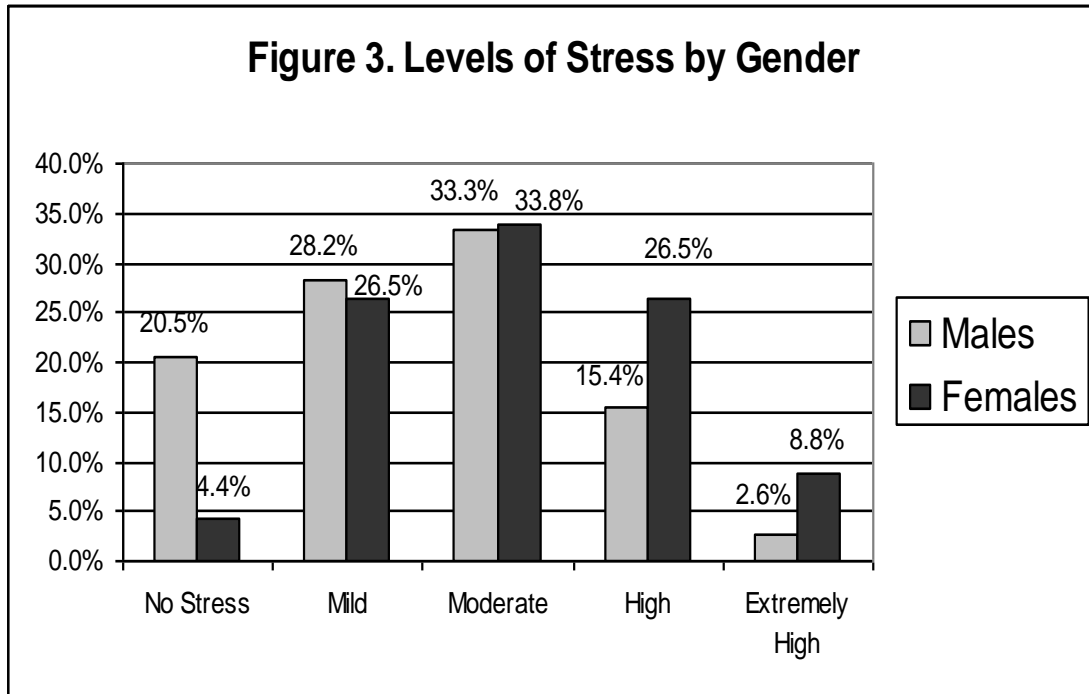
When we examined stress levels by gender, we found that the levels varied among male and female students. Figure 3 indicates that more than 20 percent of males reported they did not experience stress while only 4.4 percent of the female students reported not experiencing stress. Both males and females experienced similar levels of mild stress, 28.2 and 26.5 percent respectively. Both sexes experienced almost identical levels of moderate stress, 33.3 percent for males versus 33.8 percent for females. In terms of high levels of stress, 26.5 percent of the females stated they experienced high levels of stress while only 15.4 percent of males reported experiencing high levels of stress. More female students also reported experiencing extremely high levels of stress than males, 8.8 percent and 2.6 percent, respectively.



When asked about the adjustments the instructor made to the course, students reported the following: 24.5 percent of the students strongly agreed the “no attendance policy” helped reduce course-related stress, 56.6 percent agreed it helped reduce stress, 15.1 percent disagreed and 3.8 percent strongly disagreed. With respect to study guides provided by instructors 43 percent strongly agreed that the study guides they received help reduce stress, 42.1 agreed they reduced stress, while 9.3 percent disagreed and 5.6 percent strongly disagreed that they helped reduce stress. Students overwhelmingly indicated that overall, the adjustments the instructors made to their course helped reduce stress. Almost 62 percent strongly agreed while the remaining 38 percent agreed that overall the adjustments made by their instructors helped reduce stress. When asked what other instructors incorporated in terms of course adjustments, 20 percent strongly agreed that other instructors had been flexible and implemented course adjustments, 56.2 agreed others had made adjustments, while 18.1 percent disagreed other instructors made adjustments and 5.7 percent strongly disagreed others had made adjustments. Finally, when asked if the academic quality of the course had been compromised by the adjustments made in their courses, 38.3 percent strongly agreed that the academic quality of the course had not been comprised and 45.8 agreed it had not been compromised. Only 8.4 percent disagreed and 7.5 strongly disagreed that the quality of the course had been compromised.

**DISCUSSION/LIMITATIONS**

The purpose of this study was to examine and discuss how catastrophic events impacts college students by adding additional stress to their lives. With this in mind, the study also attempted to determine if adjustments implemented in their courses benefited students by reducing stress levels, while maintaining high academic standards and educational quality within the courses.



As the semester began, administrative decisions were made concerning class sizes, enrollment procedures and registration. Faculty members were asked to be as flexible as possible and tolerant of students that may be absent from class. Adjustments made in classes we examined included the following; 1) modifying or dropping mandatory attendance policy, 2) changing scheduled exam dates, 3) reducing the amount of material covered for the first exam, 4) providing students with study guides designed to help them focus on their exams, and 5) reducing the amount of lecture time and providing students with notes and classroom study time.

Students overwhelmingly indicated that the adjustments made in their respective courses were beneficial and reduced their levels of stress as 85 percent reported they strongly agreed or agreed that study guides helped reduce their stress levels. Concerning attendance policy adjustments, 81 percent strongly agreed or agreed that the no attendance policy implemented helped reduce their levels of stress. Overwhelmingly, the students thought that overall the adjustments made helped reduce stress as 100 percent of them strongly agreed or agreed the adjustments reduced stress. Data as indicates that faculty were able to maintain a consistently high quality level of education during this ordeal as 84 percent of those surveyed strongly agreed or agreed that the quality of education in the classroom had not been compromised. When asked if other instructors made adjustments to their courses, 76 percent indicated that other instructors had done so during this extremely stressful period. That one in four instructors did not make adjustments (at least as students perceived them) may be explained by the fact that these instructors may have been teaching subject areas where adjustments were more difficult to implement, without seriously compromising the quality of education. Courses that require building a strong foundation at the beginning of the semester, such as mathematics, may account for this area of concern.

After the first hurricane (Hurricane Charley), 48 percent of the students indicated they were feeling stressed out at the beginning of the semester. After Hurricane Frances hit, that number climbed dramatically to almost 73 percent, an increase of more than 24 percent. Finally, females reported experiencing higher levels of stress than their male counterparts. As demonstrated by figure 3, more than 26 percent experienced high levels of stress versus only 15.4 percent of males and 8.8 percent of females experienced extremely high levels whereas only 2.6 percent of males reported having experienced extremely high levels of stress. One must remember that stress has both a psychological as well as a physical component. The effects of stress on an individual can be mediated by the

amount of control over the situation that a person believes that they have. It was the goal of many instructors at Valencia Community College to give back to the students some perceived control to help lessen the amount of stress that accompanied this unusual period of major storm activity. By doing so, it was believed that the semester could be a real learning experience for the students on more than just an academic level.

In light of these findings, a word of caution is necessary. While the students surveyed indicated levels of stress that created a challenging semester, studies concerning disasters are difficult to generalize across populations. Additionally, the sample size is somewhat small and caution should be taken when interpreting the results. And finally, one thing that clearly stands out as we engage in discussion with different students regarding their semester, every student has a different story to tell. Some have greater responsibilities such as caring for an elderly or ill parent, raising children as a single parent, or experiencing marital problems where divorce seems inevitable. These individual problems are stressors in themselves that may be exacerbated by disaster. It is imperative that faculty and administration try to remain cognizant of their student's well-being and state of mind. This may have a tremendous and long lasting affect, far beyond the learning process.

**Table 1 Course Adjustments and How Students Perceived Adjustments**

	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
No Attendance Policy Helped Reduce Stress	24.5%	56.6%	15.1%	3.8%	100%
Study Guides Helped Reduce Stress	43.0%	42.1%	9.3%	5.6%	100%
Other Instructors Implemented Course Adjustments	20.0%	56.2%	18.1%	5.7%	100%
Overall Course Adjustments Helped Reduce Stress	61.7%	38.3%	0.0%	0.0%	100%
Adjustments Did NOT Compromise Academic Quality Of The Course	38.3%	45.8%	8.4%	7.5%	100%

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Notes