Published in final edited form as:

Subst Use Misuse. 2009 ; 44(12): 1695–1710. doi:10.3109/10826080902962094.

A Psychosocial Comparison of New Orleans and Houston Crack Smokers in the Wake of Hurricane Katrina

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Abstract

The purpose of this study was to compare psychological distress in a sample of African American crack cocaine users who relocated to Houston from New Orleans after Hurricane Katrina to African American drug users resident in Houston. Fifty-four African Americans from New Orleans were compared to a sample of 162 people in Houston. Data were collected between June 2002 and December 2005. There were no significant differences between the two groups on either depression or anxiety, but the New Orleans sample scored higher on the self-esteem scale and scored slightly lower on the risk-taking scale.

Keywords

New Orleans; Hurricane Katrina; disaster; trauma; evacuation; crack cocaine

Introduction

Natural disasters are often followed by a sharp increase in mental health problems for the people who went through them (National Center for Post-Traumatic Stress, 2005). Norris (2005a,b) reviewed the sequelae from a number of natural disasters including Hurricanes Hugo, Mitch, and Andrew. Mental health problems ranged from significant psychological distress to diagnosable disorders such as post-traumatic stress disorder (PTSD), depression, anxiety disorders, and other health problems. Norris also found that there were lingering effects of psychological distress for up to 36 months after a disaster.

Hurricane Hugo hit the east coast of the U.S. in September 1989, impacting North and South Carolina and Georgia. It was the most severe and costly (\$12.6 billion) storm to hit the U.S. up to that time. Thompson, Norris, and Hanacek (1993) conducted a study in which they interviewed 1,000 adults from Charleston and Greenville (South Carolina), Charlotte (North Carolina), and Savannah (Georgia) to assess psychological consequences of the hurricane. Interviews were conducted in the fall of 1990, one year after the hurricane, and measured depression, anxiety, somatization, general stress, and traumatic stress. They found that substantial, pervasive, and relatively long-lasting distress was experienced by almost half of the hurricane victims. Hardin et al. (1994) also conducted a study with 1,482 South Carolina high school students one year after the hurricane. They used measures of anger, depression,

anxiety, and global mental distress in order to examine psychological distress. Their results indicated that those students with higher levels of exposure to the effects of the hurricane also experienced higher levels of psychological distress.

In October 1998, Hurricane Mitch struck Central America, primarily Nicaragua and Honduras. Loss of life and destruction of homes was very high in both countries. In a study with 158 adolescents in Nicaragua six months after the hurricane, Goenjian et al. (2001) measured depressive symptoms and post-traumatic stress symptoms. They found severe levels of post-traumatic stress and depressive reactions which followed a “dose-of-exposure” pattern. Adolescents who had been exposed to higher levels of death and destruction in the cities most affected also experienced higher levels of psychological distress. A study was also conducted in Honduras by Kohn, Levav, Garcia, Machuca, and Tamashiro (2005), which examined psychological distress and PTSD. Eight hundred respondents who were aged 15 and older were interviewed. Rates of PTSD and depression were higher in high-impact neighborhoods compared to low-impact neighborhoods.

Hurricane Andrew slammed into South Florida in the August of 1992, devastating Homestead, Florida City, and parts of Miami. Two hundred and fifty thousand people were left homeless. Until Hurricane Katrina hit Louisiana, Andrew was the costliest disaster in the U.S., causing an estimated \$45 billion in damage. Ironson et al. (1997) evaluated 173 adults in damaged neighborhoods between one and four months after the hurricane. They found that one third of their sample could be diagnosed with PTSD. Six months after Hurricane Andrew, Norris, Perilla, Riad, Kaniasty, and Lavizzo (1999) conducted a study with a sample of 241 adults living in southern Dade County. They measured depressive symptoms and PTSD and found that 26% of participants were still experiencing PTSD and 39% showed depressive symptoms six months after the disaster. They found similar rates a full two years later. These findings were consistent with other similar studies conducted in South Florida after Hurricane Andrew (David et al., 1996; Garrison et al, 1995; Perilla, Norris, and Lavizzo, 2002; Sattler et al., 1995).

Hurricane Katrina made landfall on August 29, 2005; and the same day, the storm surge breached the levee system in New Orleans. The storm and levee breach resulted in 1,101 deaths, and 3,200 missing persons in Louisiana. More than 1.5 million people were displaced and damage was estimated to be between \$40 and \$120 billion. Following the typology outlined by Norris, Friedman, and Watson (2002), Hurricane Katrina rates as a particularly severe disaster in terms of generating psychological stress because it a) caused a great loss of life; b) caused widespread damage to property; and c) resulted in lingering social and economic problems for New Orleans. An early assessment of 166 persons in New Orleans showed that 45% of them scored high enough on a rating scale for a diagnosis of PTSD (Centers for Disease Control and Prevention (CDC), 2006). Several authors have noted that mental health outcomes of disasters may vary according to individual-level characteristics (e.g., gender, ethnicity, family structure, etc.) as well as prior exposure to traumatic events that engender greater self-efficacy and optimism (Bourque, Siegel, Kano, and Wood, 2006; Norris et al., 2002). A preliminary survey conducted in the evacuation centers two weeks after the Hurricane Katrina hints at this variability insofar as many people were hopeful about their future (87%) and believed that they will fully recover from the hurricane (53%), but it also found a substantial number of evacuees who were depressed (50%), angry (39%), and frightened (35%) (Brodie, Weltzien, Altman, Blendon, and Benson, 2006).

The purpose of this study was to examine the psychological effects and coping behaviors among a sample of African American crack cocaine users who relocated to Houston from New Orleans after Hurricane Katrina. Because there is a strong link between drug use and

mental health disorders (e.g., Back et al., 2000; Watkins et al., 2004), we examined the extent of distress resulting from this disaster and compared the evacuees to African American crack cocaine users who were already residing in Houston. Using a mixed method approach, we collected both quantitative and qualitative data on psychosocial functioning, drug use, sexual practices, housing arrangements, and employment. Given the severity of the hurricane and the characteristics of this subgroup (e.g., low socioeconomic status, secondary stressors from drug use), we expected to find evidence of higher psychological distress among the New Orleans evacuees.

Methods

This study was part of a larger study on the efficacy of a psychosocial intervention to increase condom use by heterosexual African American crack smokers. Quantitative data in the larger study were collected between June 2002 and March 2005 in Houston, Texas. In order to participate in the larger Houston study, individuals had to: be African American and between 18 and 40 years old; have smoked crack cocaine in the 48 hours before being screened; have had vaginal sex at least once in the 7 days before being screened; reside at the time of screening in one of the neighborhoods targeted for recruitment; and be able to provide sufficient information that they could be relocated for follow-up interviews. Data for the New Orleans sample were collected between October 3 and December 2, 2005 in Houston, the closest large city to New Orleans at 350 miles distance. In order to participate in the New Orleans sample, individuals had to: be African American and over 18 years old; have smoked crack cocaine in the 48 hours before being screened; and have had vaginal sex at least once in the 7 days before being screened. All self-reported crack cocaine use was verified by urinalysis. All procedures and data collection forms for the study were reviewed and approved by The University of Texas School of Public Health committee for the protection of human subjects.

Procedures

Participants for the larger Houston study were recruited using a combination of targeted sampling and participant referral. For targeted sampling, neighborhoods with high rates of drug use were identified and confirmed through interviews with local key informants knowledgeable about patterns of illicit drugs use in the city (Booth, Watters, and Chitwood, 1993; Watters and Biernacki, 1989). Within these neighborhoods, key informants identified places where crack smokers were likely to congregate and provided introductions for the outreach workers. Upon introduction, outreach workers briefly described the research project, provided them a risk reduction packet that included condoms, and asked if the person was interested in taking part in a health-related study. Interested persons were invited to a nearby field office for screening.

The New Orleans participants were recruited by an outreach worker who knew some of the evacuees who had relocated to Houston, and they in turn referred other potential participants that they knew. The outreach worker briefly described the research project, provided them the same risk reduction packet that included condoms, and asked if the person was interested in taking part in a health-related study. Those who were interested were invited to a nearby field office for screening.

Prior to screening, individuals were informed of the intent of the study, were told that their participation was voluntary, and told that they could refuse to answer any of the questions. Individuals who qualified for the study were asked for their written consent to participate, and were then asked to provide a urine sample. The sample was tested for cocaine metabolites using ONTRACK test kits (Varian, Inc.). Only the individuals who had positive urine screens for cocaine were asked to participate in data collection for the full study.

In addition, in order to further explore psychological distress and living conditions, we conducted in-depth interviews with a subsample of study participants from each sample. From August to December of 2005, 51 African American crack users, 44 Houston residents, and 7 New Orleans evacuees took part in this phase of the project. Interviews were conducted in the same field offices, and study subjects went through a similar consent process as in the survey phase; each person received \$30 for his/her participation. These interviews were semistructured, so that the interviewer could pursue relevant issues as they emerged during the course of the conversation. Discussions followed a set of broad, basic questions to examine childhood experiences and family relationships, sexual relationships, general health concerns, condom use and perceptions of HIV/AIDS risk, practices and experiences of drug use, and reflections on personal responsibility in high-risk situations. New Orleans evacuees were asked additional questions concerning their experiences during Hurricane Katrina, the process of evacuation and resettlement, and future expectations. Interviews lasted between 30 and 90 min and were recorded. Discussions were then transcribed verbatim and subjected to content analysis for narratives concerning drug use, social conditions, and psychological distress.

Measures

Quantitative data were collected by trained research assistants using the Peer Outreach Questionnaire (POQ). The POQ includes questions on demographics, lifetime and current drug use, current sexual behaviors, and psychosocial indicators. Psychosocial indicators were measured using the TCU Psychosocial Functioning and Motivation Scales (Knight, Holcom, and Simpson, 1994; Simpson, Knight, and Ray, 1993). Data generated by the TCU psychosocial scales have been shown to have good reliability and validity. Forty-eight hour test-retest of data generated by the POQ using a sample of 50 individuals meeting eligibility criteria showed that the instruments produced reliable data (data available from the authors on request). The New Orleans participants also answered a brief 16-item questionnaire related to their living arrangements in Houston and their intentions to stay in Houston or return to New Orleans. Participants took about 1 hr to complete the questionnaire and the psychosocial scales, and were paid \$25 for their time and travel expenses.

Demographic characteristics were measured by age, education, marital status, living arrangements, and self-report of perceived homelessness.

Lifetime and current crack cocaine use was measured using several questions: How old were you the first time you smoked crack/cocaine; How long have you smoked crack/cocaine; Altogether, how many times in the last 30 days have you used crack/cocaine?

Information on current sexual partners were described using several questions: Do you have a main sex partner, that is someone that you love and/or care about; and Do you have casual sex partners, that is people that are friends but you are not in love with? For each partner named they were asked: How long have you been having sex with ... and How many times have you had sex with ... in the last 7 day and last 30 days. Additional sex behavior questions included: How many different people have you had sex with in the past 7 and 30 days and Have you had any new sex partners in the past week? Condom use was measured by asking: *How often do you use condoms with ...* and *How long have you been using condoms with ... ?*

Psychological indicators were derived from the Self-Rating Form (SRF) developed by researchers at Texas Christian University. The SRF was developed for use in the Improving Drug Abuse Treatment for AIDS-Risk Reduction (DATAR) study (Knight et al., 1994). It measures among others depression, anxiety, self-esteem, and risk taking. Items were measured using a Likert-type scale that ranged from 0 to 4: never, rarely, sometimes, often,

and almost always. The mean scores for each measure are the average of all items included in the measure (Knight et al.; Simpson et al., 1993). Lower scores indicate less of the attribute measured. Psychological measures used included: self-esteem (6 item scale, $\alpha = .74$), depression (6 items, $\alpha = .71$), anxiety (7 items, $\alpha = .79$), decision-making confidence (9 items, $\alpha = .70$), and social conformity (8 items, $\alpha = .68$). Risk taking was also divided into two scales: *engaging in risky behaviors* (4 items, $\alpha = .71$) and *engaging in nonrisky behaviors* (3 items, $\alpha = .65$). These two scales distinguish between individuals who actively seek risky behaviors (questions included: *You like to take chances*; *You like the fast life*; *You like friends who are wild*; and *You like to do things that are strange or exciting*) and those who actively avoid risky behaviors (*You avoid anything dangerous*, *You only do things that feel safe*; *You are very careful and cautious*).

Analyses

All quantitative analyses were conducted with SPSS version 14. Means were calculated for all scale items and comparisons between the two samples were carried out by using Chi-squares and *t*tests. Qualitative interviews were transcribed verbatim and subjected to narrative analyses (Agar, 1980; Mishler, 1991), focusing on issues of drug use, socioeconomic conditions, and psychological distress.

Results

Fifty-four African Americans from New Orleans who were using crack cocaine were given the quantitative interview and these were compared with a three to one matched sample of 162 crack cocaine users originally residing in Houston. Participants were matched on both gender and age.

On the brief questionnaire for individuals only in the New Orleans sample, people reported being in Houston for about one and a half months, and the plurality (38%) were living in a shelter when they first arrived in Houston. Fifteen percent were living with family, 15% in temporary housing, 17% were living with friends, and 11% were living in hotels. Fifty-nine percent were still living at the same place and 41% had relocated. Of those who had relocated, 39% were still living in temporary housing and 46% had obtained a house or an apartment. Sixty percent said that they intended to stay in Houston, 25% said they intended to return to New Orleans, and 15% did not know yet what they were going to do. In terms of demographic variables, participants were matched on age and gender so that would preclude finding any differences in those. The groups were also not significantly different on length of education or marital status. However, there were significant differences in their employment status, whether or not they had income from a job, and their living arrangements. For the New Orleans participants, although nearly two-thirds reported having their own housing, half also reported that they considered themselves homeless. In contrast, 24% of the Houston residents had their own housing, but only 25% considered themselves homeless (see Table 1). The Houston participants were more likely than the New Orleans participants to smoke crack more than once a day and to have had a casual sex partner. However, the New Orleans participants were more likely to use methamphetamine, use marijuana, and to be a drug injector than the Houston participants. Over half of both groups had a main sex partner, and there were no significant differences in the number of times they smoked crack in the past month, the number of times they had sex in the past week, or the percentage of those who reported “never” using condoms. In terms of the psychosocial variables that were measured, there were no significant differences on the scales that measured depression, anxiety, social conformity, decision making, and risk taking. On the scale that measured self-esteem, the New Orleans participants scored significantly higher (see Table 2).

Qualitative Interviews

Forty-four Houston residents and 7 New Orleans evacuees participated in the qualitative phase of the study. Analysis of interview transcripts uncovered several themes relevant to our comparison of New Orleans and Houston crack cocaine users. While people who fled New Orleans after Hurricane Katrina made landfall related harrowing tales of fear and uncertainty as they made their way to safety, they told equally poignant stories of life as an inner-city minority crack cocaine user before the disaster. The biographies of respondents in both groups are filled with accounts of physical, emotional and sexual abuse, abandonment, loss, discrimination, and isolation, reflecting prolonged exposure to a traumatic environment:

[W]here I'm from is ... is what you might call 'thuggish.' I mean, the people is friendly, but you got to offset that in with the drugs and all the shit in there and try to come in and, you know, manipulate and take over shit and I wasn't goin' for that. [...] where I'm at, it's [drug use] wide open. Ain't no such thing as... the police, they be right there. They go, "What's you up, man?" You know? And we'll shoot at the police. (male New Orleans evacuee)

[Y]ou never know when a bullet's gonna hit your ass! Know what I'm sayin'? Oh, you wanna lay down get your sleep, and later [...] bullets fly every where. And you can't even be comfortable in the 'hood. Sleepin' is just like a danger zone... a warzone. (female Houston resident)

Such conditions take a toll on local residents, creating a situation where many use drugs to escape this dismal reality:

I get high a lot of times 'cause I was being bored. A lot of people get high being, uh, stressed and depressed. That's the only time they get high. And if they're all happy and everything goin' good, they don't think about the drug. And then they get depressed or stressed out, they run to the drug. (male Houston resident)

New Orleans evacuees also described their crack use as a coping strategy to deal with the psychological effects of trauma (insomnia, anxiety, uncertainty) resulting from the hurricane:

I smoke more crack since I been here then I did when I lived in New Orleans. [...] When I came to Houston, I didn't know where my [family] was at. So that's what really made me start smokin' crack, 'cause I couldn't call 'em. The cellular phones ... phone's ringin', ain't nobody answerin' the phone. Nobody. [...] And that was really eatin' me up, 'cause I didn't know where they was at. I didn't know if they was dead or what, so I just bought me another crack rock and I smoked it. (female New Orleans evacuee)

None of the New Orleans evacuees had any difficulty finding crack cocaine upon their arrival in Houston; according to them, illicit substances were readily available in the evacuation centers as well as the housing complexes they occupied. Yet evacuees believed that their crack use had diminished since they arrived in Houston. Even the woman cited above concurred with this assessment, saying her crack use after her evacuation was the result of her not knowing what had happened to her relatives. Once she found out they were safe and her own situation became more stable, she reverted to her previous pattern of occasional use ("I smoked more crack when I first got here than I have since I've been a little settled"). The people from New Orleans provided several reasons for this change in crack use. Apart from the initial financial assistance from FEMA and the Red Cross, they were often strapped for cash as they secured housing and replaced goods lost in the storm. Few of them had found a job at the time of their interviews. Also, many evacuees formed

new relationships based on their desires for economic cooperation, emotional support, and sexual companionship that did not involve drug use:

[C]rack is ... it's real convenient for anybody that comes in here. You know, it's a real, real convenient. But I don't know if I been smokin' more [since arriving in Houston], you know, 'cause I been kinda versatile messin' with different all kinds of people, so I would say... I just didn't find... just all crack people, so I probably woulda been smokin' more. 'Cause, you know, I have met people that don't mess with crack. (male New Orleans evacuee)

Respondents in both groups expressed a genuine desire to quit using drugs, but they found this process extremely difficult as long as they were living amidst the same "people, places, and things" that trigger cravings and facilitate procurement. The Houston residents in this study proffered imagined futures where they had steady jobs, lived in nice houses, and engaged in middle-class leisure pursuits, but their lack of mobility weighed heavily on their minds:

[I'm] *tryin' to ease out* [of the neighborhood], but I don't have nowhere to go. I'm not fixin' to live on the street. You hear me? That's why I'm still in my situation, tryin' to get my finances together so I can move and do some things. When I move, I ain't gonna do all that. I'm gonna be a whole, totally different person. [...] Gettin' away from this neighborhood, stop messin' with the old stuff you's messin' with, and do positive stuff with new positive people. (female Houston resident)

In contrast, the evacuees from New Orleans took a different view to their new surroundings? often in the very same neighborhoods that local residents found so oppressive:

[I]t's quiet. I love it. You don't see the children hangin' on the corners, you don't see the boys hangin' with their pants down, oh Lord! It's quiet, it is quiet. I love it. And it's clean. (female New Orleans evacuee)

While the Houston residents consistently emphasized the hopelessness of their situation, evacuees from New Orleans related narratives of transformation, using the tragedy of Hurricane Katrina as an impetus to spur change in their lives:

It's a fresh start. Fresh start, new beginnin', you know. More opportunities for to get alotta things that, you know, that I lost. And it'll get better. And right now, I'm at peace with myself. I got peace of mind with myself, you know, because when you're doin' drugs, believe me, when you're doin' drugs, it's all you wanna do. You don't wanna eat, you don't wanna sleep, you don't wanna take a bath, you don't wanna do shit. All you wanna do is get loaded. And right now, that don't fit in my lifestyle because I got too much things ... too many things to do and too many people to go see, being with that shit just slow me down, or get in my way right now. [...] Katrina changed me a lot, because Katrina made me feel like, man, I was here today, but look where I am now. And it's like, you got to be focused on life itself right now. If you're not focused on life itself right now, then you just throw it all, because to go through the shit I've been through in the last ninety days. (male New Orleans evacuee)

Many respondents in this study described how certain traumatic events such as homelessness, incarceration, or a diagnosis of HIV had produced positive outcomes, noting how these incidents had changed their perspectives or led to new opportunities.

The mean scores recorded for the psychosocial scales among participants in this study are higher than the norms published for these measures by the TCU group. Both New Orleans and Houston participants had higher levels of depression, anxiety, and risk taking. They also had higher levels of social conformity, decision-making ability, and self-esteem.

Discussion

There were few differences between these two groups of crack cocaine users. They engaged in high levels of crack cocaine use, had multiple sex partners and engaged in vaginal sex a similar number of times. The majority of both groups never used condoms while having sex, and for those who did, use was inconsistent. The major differences between them were related to having employment and housing. While the Houston sample had higher levels of employment, more of the New Orleans sample had their own housing. When they were interviewed, few of the New Orleans people had had time to find jobs yet. At the time however they were receiving assistance and housing. In spite of having obtained housing in Houston, significantly more of the New Orleans people perceived themselves as homeless. Even though most of the Houston people were living in someone else's home (74%), only a quarter of them reported that they believed that they were homeless.

As in the existing research on disasters and PTSD, we expected to find higher levels of distress among those who survived an ordeal such as Hurricane Katrina. However, the comparison of psychological measures between the Houston residents and the New Orleans evacuees reveals similar levels of depression and anxiety in both groups, while the evacuees report higher levels of self-esteem. Two important themes that emerged from the narratives of study participants could account for these results: a) the persistent trauma experienced by minority crack cocaine users in all urban settings, and b) the sense of optimism and hope stemming from the new opportunities for a fresh start for the New Orleans evacuees. As noted, the mean scores recorded for the psychosocial scales among participants in this study were higher than the norms published for these measures by the TCU group. Exploration of the nature of these differences should be topic for further research.

Similarities in the quantitative and qualitative data from both New Orleans evacuees and Houston residents reveal that inner-city minority crack cocaine users everywhere experience psychological distress as a result of their living conditions. Research documents how the socioeconomic context of "disadvantaged" neighborhoods contributes to depression and other mental disorders among residents (Cutrona et al., 2005; Ross, 2000; Silver, Mulvey, and Swanson, 2002). Most of the Houston residents in this study wanted to get out of the neighborhoods in which they currently lived because of these factors. However, persistent poverty and personal experiences of discrimination perpetuate social isolation so that the residents of inner-city ghettos ordinarily have an extremely difficult time escaping these conditions (Massey and Denton, 1993; Wacquant and Wilson, 1989). For many of the participants in this study, Katrina is but one more event in a long history of brutality and neglect (Rhodes, Mitchell, and Rick, 2006; Romero-Daza, Weeks, and Singer, 2003; Singer, Scott, Wilson, Easton, and Weeks, 2001).

Hurricane Katrina represented a significant life event for the population of New Orleans, yet from those dark storm clouds emerged a "silver lining" for many former residents of that city. The persistent accounts of violence and social disorder in both study groups gave way to expressions of hope among evacuees who found themselves living in higher income neighborhoods than before, and in cities that appeared to provide more opportunities for socioeconomic mobility (see also DeParle, 2006). What emerged from respondent narratives is the idea that Houston appears to be a better place to live than New Orleans. This sentiment undoubtedly stems from the outpouring of support that Houston residents and the local government provided following the disaster. The gratitude expressed by evacuees was compounded by their feelings of abandonment in New Orleans. Their portrayal of New Orleans reflected popular conceptions of corruption and incompetence in the management of local affairs, adding another layer to their perception of social disorder. This stands in stark contrast with evacuees' perceptions of civility and good governance in Houston.

With vouchers for one year of rent and utilities in their hands and promises of employment, most of the evacuees we interviewed set out to create new “lifestyles” that did not involve crack cocaine. There were also some adjustments in social behavior and attitudes among the New Orleans respondents that may provide a foundation for long-term recovery and lasting well-being. Kiecolt (1994) provides a theoretical model where a critical event precipitates self-change through the enhancement of conditioning factors (e.g., social support, access to resources, self-efficacy). For crack cocaine users from New Orleans, this meant: a) acquiring a more sympathetic identity (“Katrina evacuee”) that facilitates social integration and mobility; b) reuniting family members; and c) acquiring financial resources to establish households in neighborhoods of their choosing. Emotional and financial support from one’s social network of family and friends is crucial in coping with disasters and other stressful situations (Elliot and Pais, 2006; Norris and Krzysztof, 1996), and those evacuees who had support appeared to be faring better than those who were essentially on their own.

The evidence for higher self-esteem among persons displaced from New Orleans seems to stem from their sense of being delivered from the consequences of the natural disaster coupled with the bleak conditions of their previous neighborhoods. The resilience observed among these older crack cocaine users is not entirely unexpected since “many individuals who experience a major loss report greater self-worth after realizing that they were successfully able to cope under exceedingly difficult circumstances” (Miller, 2003, p. 240). Rather than compounding feelings of distress, prior exposure to trauma may “inoculate” persons from additional suffering (Rhodes et al., 2006), especially among those who have developed successful coping strategies (Norris et al., 2002). Having survived this traumatic episode to find themselves in better conditions, evacuees from New Orleans are thankful for “a new lease on life,” hoping that they can sustain the good fortune that has emerged from tragedy. Meanwhile, Houston crack users can only dream of finding a way out of their depressing predicament.

Study’s Limitations

Overall there are a number of limitations in this study. As with all interview studies of substance use the validity of self-reported behavior can be an issue. However, several steps were taken in order to minimize error. People who were obviously high were asked to come back another time. Also, if the persons had difficulty answering the questions on the brief screening questionnaire, they were not given the full interview. Questions regarding their drug use and sexual behaviors were limited to the past week and the past 30 days in order to enhance their memory of events. The timing of this study may have had an impact as well. We started recruitment about a month after the Hurricane and for many the immediate traumatic effects had been alleviated. Recruitment was stopped approximately three months later while hope was still high and people were receiving benefits. Both samples were predominately male and the number of qualitative interviews for the New Orleans sample was low. One of the strengths of the study was that crack cocaine use was validated by a biological test.

Conclusion

This study documents that people react differently to traumatic stress, and thus, require different forms of support at different times. Hurricane Katrina did not result in an increase in psychological distress among African American crack cocaine users from New Orleans because they had seen it all before: the indifferent authorities, loss, violence, and feelings of hopelessness and abandonment that followed in the wake of this disaster was a microcosm of what many had experienced throughout their lives. They had already learned how to cope with such trauma by turning to family and friends as well as using drugs. While there is evidence that some evacuees increased their drug use immediately after the hurricane, they

reverted back to previous drug-use patterns once the particular stressor (lost relative, lack of private residence, etc.) had been addressed. Moreover, while many people would consider permanent involuntary relocation to a new environment in negative terms, this process represented a welcome opportunity for those who were not happy living in the “depressed” conditions of an urban ghetto.

The timing of this research had an effect on the findings. We began recruitment five weeks after Hurricane Katrina, after many of the immediate psychological manifestations of trauma and uncertainty had subsided. By then, most evacuees had re-established contact with dispersed relatives and had begun to settle in their new accommodations, looking forward to the opportunity for a new life. Recruitment was ended 13 weeks after the disaster, while optimism was still high and the government continued to distribute benefits. Yet by December 2005, the patience and generosity of native Houstonians was beginning to wane. Stories of increases in violent crimes and the burden on local resources focused on people marked as “Katrina evacuees” are straining public sympathy. Following accounts of widespread fraud and corruption in the disbursement of financial aid, there is now talk of rescinding people’s housing vouchers, prompting fears that people will once again be turned out onto the streets.

No one knows how this change in public attitude will affect the people in this study who expressed hopefulness at the beginning of their unintended relocation, but now find themselves in situations where they are once again pushed to the margins of society. As a result of loss of personal records in the flooding, many are finding it difficult to secure employment, housing, or social services. Compassionate neighbors may come to look upon these new arrivals with increasing resentment as they compete for jobs or bring additional police surveillance to bear on communities where evacuees are concentrated. These secondary stressors, coupled with a continuing uncertainty regarding a possible return to New Orleans, may prolong feelings of anxiety and distress (Bourque et al., 2006). There may also be a delayed reaction in terms of impaired psychosocial functioning if people’s optimistic expectations remain unfulfilled.

This research shows that we still have a limited understanding of how people cope with traumatic events. This is due, in part, to the continuing focus on those who exhibit PTSD and other mental health problems, ignoring the majority of people who are resilient in the face of disasters (Bonanno, 2004). If we were to examine the processes of resilience in conjunction with impaired psychosocial functioning, we would have a much better idea of how to develop appropriate interventions for different situations.

Acknowledgments

This research was supported by a grant from the National Institute on Drug Abuse. The opinions expressed herein are solely those of the authors.

Biography

Sandra Timpson, Ph.D., is a faculty associate in the Center for Health Promotion and Research at the University of Texas School of Public Health. Dr. Timpson has 10 years of experience as project director on six research grants. She has worked on the development and implementation of behavioral interventions.

Eric A. Ratliff, Ph.D., is an anthropologist and a postdoctoral fellow at the Center for Health Promotion and Prevention Research at the University of Texas School of Public Health in Houston. He is currently studying close relationships and HIV risk practices among inner-city drug users.

Michael Ross, MA, MS, Ph.D., DrMedSc, MPH, MHPed, DipTertEd, DipSTD, DipAppCrim, is professor of Public Health and professor of Infectious Diseases in the Center for Health Promotion and Prevention Research at the University of Texas—School of Public Health. He is the author of more than 400 scientific papers and chapters, including 13 books on STDs, HIV/AIDS, TB, homosexuality, psychology, drug use, and AIDS-related burnout.

Mark Williams, Ph.D., is professor of Behavioral Sciences at the University of Texas School of Public Health in Houston, Texas. Dr. Williams has been awarded a number of NIDA-sponsored funded research grants. He has written extensively on STDs, HIV, and drug use epidemiology, network structures and their relationship to HIV infection, and cognitive and emotive models of HIV risk reduction.

John Atkinson, DrPH, is a senior research associate within the Center for Health Promotion and Prevention Research at the University of Texas School of Public Health in Houston. His research interests include HIV sex and drug use behaviors in indigent populations.

Anne Bowen, Ph.D., is a clinical psychologist with significant training and experience in HIV prevention, drug use and prevention, and behavioral medicine. She has extensive experience with direct observation, interviewing, qualitative and survey research, research design, and intervention development and evaluation.

Sheryl McCurdy, Ph.D., is an assistant professor in the Center for Health Promotion at the University of Texas School of Public Health. Her degree is in Sociomedical Sciences. She has done extensive research with heroin injectors in Tanzania.

Glossary

Casual sex partner	A person that an individual has sex with but has no strong feelings for.
Main sex partner	A primary sex partner such as a spouse or a lover.

New sex partner

A person that an individual has recently met and had sex with.

References

- Agar M. Stories, background knowledge and themes: problems in the analysis of life history narrative. *American Ethnologist* 1980;7(2):223–239.
- Back S, Dansky BS, Coffey SF, Saladin ME, Sonne S, Brady KT. Cocaine dependence with and without posttraumatic stress disorder: a comparison of substance use, trauma history and psychiatric comorbidity. *American Journal on Addictions* 2000;9(1):51–62. [PubMed: 10914293]
- Bonanno GA. Loss, trauma, and human resilience: have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist* 2004;59(1):20–28. [PubMed: 14736317]
- Booth RE, Watters J, Chitwood D. HIV risk-related sex behaviors among injection drug users, crack smokers, and injection drug users who smoke crack. *American Public Health Journal* 1993;83:1144–1148.
- Bourque LB, Siegel JM, Kano M, Wood MM. Weathering the storm: the impact of hurricanes on physical and mental health. *Annals of the American Academy of Political and Social Science* 2006;604:129–151.
- Brodie M, Weltzien E, Altman D, Blendon RJ, Benson JM. Experiences of Hurricane Katrina evacuees in Houston shelters: implications for future planning. *American Journal of Public Health* 2006;96(8):1402–1408. [PubMed: 16571686]
- Centers for Disease Control and Prevention. Assessment of health-related needs after Hurricane Katrina and Rita—Orleans and Jefferson Parishes, New Orleans Area, Louisiana, October 17–22, 2005. Vol. 55. CDC; Atlanta: Jan 20. 2006 Morbidity and Mortality Weekly Report; p. 38–41.
- Cutrona CE, Russell DW, Brown P, Adama C, Lee A, Hessling RM, et al. Neighborhood context, personality, and stressful life events as predictors of depression among African American women. *Journal of Abnormal Psychology* 2005;114(1):3–15. [PubMed: 15709807]
- David D, Mellman T, Mendoza L, Kulick-Bell R, Ironson G, Schneiderman N. Psychiatric morbidity following Hurricane Andrew. *Journal of Traumatic Stress* 1996;9(3):607–612.
- DeParle J. Katrina's tide carries many to hopeful shores. *New York Times* April 23;2006 :A1, A18.
- Elliot JR, Pais J. Race, class, and Hurricane Katrina: social differences in human responses to disaster. *Social Science Research* 2006;35(2):295–321.
- Garrison C, Bryant E, Addy S, Spurrier P, Freedy J, Kilpatrick D. Posttraumatic stress disorder in adolescents after Hurricane Andrew. *Journal of the American Academy of Child & Adolescent Psychiatry* 1995;34(9):1193–1201. [PubMed: 7559314]
- Goenjian AK, Molina L, Steinberg AM, Fairbanks LA, Alvarez ML, Goejian HA, et al. Posttraumatic Stress and depressive reactions among Nicaraguan adolescents after Hurricane Mitch. *American Journal of Psychiatry* 2001;158:788–794. [PubMed: 11329403]
- Ironson G, Wynings C, Schneiderman N, Baum A, Rodriguez M, Greenwood D, et al. Psychosomatic Medicine 1997;59(2):128–141. [PubMed: 9088048]
- Kiecolt KJ. Stress and the decision to change oneself: a theoretical model. *Social Psychology Quarterly* 1994;57(1):49–63.
- Knight, K.; Holcom, M.; Simpson, DD. TCU psychosocial functioning and motivation scales: manual on psychometric properties. Texas Christian University, Institute of Behavioral Research; Fort Worth: 1994. Also available at: <http://www.ibr.tcu.edu/pubs/datacoll/motivation.html>
- Kohn R, Levav I, Garcia I, Machuca M, Tamashiro R. Prevalence, risk factors and aging vulnerability for psychopathology following a natural disaster in a developing country. *International Journal of Geriatric Psychiatry* 2005;20:835–841. [PubMed: 16116578]
- Massey, D.; Denton, N. American apartheid: segregation and the making of the underclass. Harvard University Press; Cambridge: 1993.
- Miller ED. Reconceptualizing the role of resiliency in coping and therapy. *Journal of Loss and Trauma* 2003;8(4):239–246.

- Mishler, EG. Research interviewing: context and narrative. Harvard University Press; Cambridge: 1991.
- Norris, FH. The effects of natural disasters. Department of Veterans Affairs; Washington, DC: 2005a. A National Center for Post-Traumatic Stress Disorder Fact Sheet
- Norris FH. Range, magnitude and duration of the effects of disasters on mental health: review update 2005. *Research Education Disaster Mental Health* 2005b;1–23.
- Norris FH, Friedman MJ, Watson PJ. 60,000 disaster victims speak: part II: summary and implication of the disaster mental health research. *Psychiatry* 2002;65(3):240–260. [PubMed: 12405080]
- Norris FH, Krzysztof K. Received and perceived social support in times of stress: a test of the social support deterioration deterrence model. *Journal of Personality and Social Psychology* 1996;71(3): 498–511. [PubMed: 8831159]
- Norris FH, Perilla JL, Riad JK, Kaniasty K, Lavizzo EA. Stability and change in stress, resources, and psychological distress following natural disaster: findings from Hurricane Andrew. *Anxiety, Stress, and Coping* 1999;12:363–396.
- Perilla J, Norris F, Lavizzo E. Ethnicity, culture, and disaster response: identifying and explaining ethnic differences in PTSD six months after Hurricane Andrew. *Journal of Social & Clinical Psychology* 2002;21(1):20–45.
- Rhodes J, Mitchell F, Rick S. Posttraumatic stress disorder after Hurricane Katrina. *Journal for Nurse Practitioners* 2006;2(1):18–26.
- Roberts CA. Drug use among inner-city African American women: the process of managing loss. *Qualitative Health Research* 1999;9(5):620–638. [PubMed: 10558371]
- Romero-Daza N, Weeks M, Singer M. “Nobody gives a damn if I live or die”: violence, drugs, and street-level prostitution in inner-city Hartford, Connecticut. *Medical Anthropology* 2003;22(3): 233–259. [PubMed: 12893541]
- Ross CE. Neighborhood disadvantage and adult depression. *Journal of Health and Social Behavior* 2000;41(2):177–187.
- Ross M, Williams M. Sexual behavior in drug users. *Annual Review of Sex Research* 2001;12:290–310.
- Sattler D, Sattler J, Kaiser C, Hamby B, Adams M, Love L, et al. Hurricane Andrew: psychological distress among shelter victims. *International Journal of Stress Management* 1995;2(3):133–143.
- Silver E, Mulvey EP, Swanson JW. Neighborhood structural characteristics and mental disorder: Faris and Dunham revisited. *Social Science & Medicine* 2002;55(8):1457–1470. [PubMed: 12231022]
- Simpson DD, Knight K, Ray S. Psychosocial correlates of AIDS-risk drug use and sexual behaviors. *AIDS Education & Prevention* 1993;5:121–130. [PubMed: 8323854]
- Singer M, Scott G, Wilson S, Easton D, Weeks M. “War stories”: AIDS prevention and the street narratives of drug users. *Qualitative Health Research* 2001;11(5):589–611. [PubMed: 11554190]
- Thompson MP, Norris FH, Hanacek B. Age differences in the psychological consequences of Hurricane Hugo. *Psychology and Aging* 1993;8(4):606–616. [PubMed: 8292289]
- Timpson SC, Williams ML, Bowen AM, Keel KB. Condom use behaviors in HIV-infected African American crack cocaine users. *Substance Abuse* 2003;24:211–220. [PubMed: 14574087]
- Voelker R. Katrina’s impact on mental health likely to last years. *Journal of the American Medical Association* 2005;294(13):1599–1560. [PubMed: 16204652]
- Voelker R. Post-Katrina mental health needs prompt group to compile disaster medicine guide. *Journal of the American Medical Association* 2006;295(3):259–260. [PubMed: 16418453]
- Wacquant LJD, Wilson WJ. The cost of racial and class exclusion in the inner city. *Annals of the American Academy of Political and Social Science* 1989;501:8–25.
- Watkins KE, Hunter SB, Wenzel SL, Tu W, Paddock SM, Griffin A, et al. Prevalence and characteristics of clients with co-occurring disorders in outpatient substance abuse treatment. *American Journal of Drug and Alcohol Abuse* 2004;30(4):749–764. [PubMed: 15624547]
- Watters J, Biernacki P. Targeted sampling: options for the study of hidden populations. *Social Problems* 1989;36:416–430.

Table 1

Demographic characteristics

	New Orleans (<i>N</i> = 54)	Houston (<i>N</i> = 162)	<i>p</i>
Mean (<i>SD</i>) age	35.8 (10.0)	33.6 (7.2)	NS
Mean (<i>SD</i>) number of years of schooling	11.7 (1.8)	11.5 (1.8)	NS
Gender/Male	70%	68%	NS
Single	76%	83%	NS
Unemployed	85%	52%	<.01
Has an income from a job	4%	41%	<.01
Has own housing	63%	24%	<.01
Living with someone else	24%	74%	<.01
Considers self homeless	50%	25%	<.01

Table 2

Drug use, sexual behavior, and psychosocial measures

	New Orleans (<i>N</i> = 54)	Houston (<i>N</i> = 162)	<i>p</i>
Crack use more than once a day	59%	83%	<.01
Methamphetamine use	19%	9%	<.05
Injection drug use	53%	6%	<.01
Marijuana	75%	55%	<.05
Had a main sex partner	54%	59%	NS
Had a casual sex partner	50%	85%	<.01
Had a new sex partner in the past week	30%	36%	NS
Never use condoms	63%	63%	NS
HIV positive	7%	3%	NS
Mean (<i>SD</i>)/Times used crack in the past month	74.7 (109.9)	60.8 (78.3)	NS
Mean (<i>SD</i>)/Times had sex in the past week	7.4 (10.3)	8.9 (8.1)	NS
Mean (<i>SD</i>)/Depression scale	3.0 (0.9)	3.3 (0.9)	NS
Mean (<i>SD</i>)/Anxiety scale	2.9 (0.9)	3.2 (0.9)	NS
Mean (<i>SD</i>)/Social conformity scale	3.5 (0.7)	3.5 (0.7)	NS
Mean (<i>SD</i>)/Decision making scale	3.1 (0.8)	3.1 (0.7)	NS
Mean (<i>SD</i>)/Risk taking scale	3.1 (0.9)	3.3 (0.8)	NS
Mean (<i>SD</i>)/Self-esteem scale	3.5 (0.9)	3.1 (0.9)	<.05