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| **Article No.** | **Author** | **Health** **Effect** **or** **Concern** | **Disaster and Date** | **Study Population and Sample Size** | **Study Methodology** | **Aims of Study** | **Results and Discussion Summary** | **Outcome Assessment Instrument** | **Clinical Implications** | **Resource** | **Abstract** |
| **1** | Brock, R. L., et al. (2014). "Partner support and maternal depression in the context of the Iowa floods." J Fam Psychol 28(6): 832-843. | Mental/Maternal Health | Floods, Iowa, 2008 | The 145 study participants were women who (a) were exposed to the flood *during* pregnancy; (b) provided *prenatal* measures of support, stress, and depression; and (c) were in committed relationships and cohabiting with their partners.  | Pre- and post-event, longitudinal design (although only  | The primary purpose of the present study was to apply a multifaceted and multidimensional model of partner support to obtain a more refined framework explaining the role of partner support in maternal depression during the perinatal period and beyond. The Iowa floods of 2008 provided a unique opportunity to investigate factors that exacerbate and mitigate the effects of prenatal maternal stress on birth outcomes, maternal mental health, and child development. First, we aimed to examine the main effects of received support and support adequacy during pregnancy on trajectories of maternal depressive symptoms. Second, we aimed to test the stress-buffering roles of received support and support adequacy to determine whether one or both facets interact with prenatal flood stress to minimize risk for depressive symptoms. The third aim of the present study was to apply the main and/or stress-buffering models of received support and support adequacy identified in Aims 1 and 2 for each of four distinct types of partner support (information, physical comfort, emotional/esteem, and tangible support). | ***When women receive higher levels of support, and the support that they receive meets their needs, risk for depression may decrease.*** The degree to which women were satisfied with the level of support they received from their partners (i.e., more adequate support) was associated with lower levels of maternal depression, and this appears to be more essential than providing frequent support. More frequent informational, esteem/emotional, and tangible support weakens the association between prenatal flood stress and trajectories of maternal depression; however, frequency of received *physical comfort* did not interact with prenatal flood stress. Physical comfort - a dimension of support thatis unique to intimate relationships - appears to be insufficient for coping with stress resulting from a natural disaster. Inadequate support during pregnancy appears to represent and primary and distinct pathway through which maternal depression may develop during the postpartum period and beyond. This pathway appears to be independent from that of prenatal maternal stress. More frequent support (regardless of its adequacy, plays a protective role, minimizing the association between prenatal flood stress and trjectories of depression over time.  | Inventory of Depression and Anxiety Symptoms (IDAS); General Depression Scale; Support in Intimate Relationships Scale-Revised (SIRRS-R); Prenatal Life Experiences Questionnaire (PLEQ); Iowa Flood 100 (IF100 - *not validated*).  | Support should be in the form of advice about how to best cope with a problem (*informational*), *instrumental* support that directly alleviates a problem, or communication of confidence in one's ability to handle a problem (*esteem/emotional*). Following natural disaster, interventions already implemented during pregnancy, including parenting programs and prenatal health care, might be expanded not only to include training in best parenting practices, but to also include skill-based training to strengthen the quality of the interparental relationship. | PubMed, Web of Science | A systematic investigation of the role of prenatal partner support in perinatal maternal depression was conducted. Separate facets of partner support were examined (i.e., received support and support adequacy) and a multidimensional model of support was applied to investigate the effects of distinct types of support (i.e., informational, physical comfort, emotional/esteem, and tangible support). Both main and stress-buffering models of partner support were tested in the context of prenatal maternal stress resulting from exposure to a natural disaster. Questionnaire data were analyzed from 145 partnered women using growth curve analytic techniques. Results indicate that received support interacts with maternal flood stress during pregnancy to weaken the association between stress and trajectories of maternal depression from pregnancy to 30 months postpartum. Support adequacy did not interact with stress, but was associated with levels of depressive symptoms controlling for maternal stress and received support. Results demonstrate the distinct roles of various facets and types of support for a more refined explanatory model of prenatal partner support and perinatal maternal depression. Results inform both main effect and stress buffering models of partner support as they apply to the etiology of perinatal maternal depression, and highlight the importance of promoting partner support during pregnancy that matches support preferences. |
| **2** | Ehrlich, M., et al. (2010). "Loss of resources and hurricane experience as predictors of postpartum depression among women in southern Louisiana." J Women's Health (Larchmt) 19(5): 877-884. | Mental/Maternal Health | Hurricane Katrina, 2005, USA | This project is part of the Katrina Moms Study, a study of 208 women in southern Louisiana who were pregnant during or directly after Hurricane Katrina. | Participants were recruited from various Louisiana hospitals after being admitted for childbirth between March 2006 and 2007. | After a natural disaster, mental disorders often become a long-term public health concern. Previous studies under smaller-scale natural disaster conditions suggest loss of psychosocial resources is associated with psychological distress. The goal of this analysis is to assess the inﬂuence of loss of resources after disaster on postpartum depression (PPD). | Both tangible and nontangible LOR were associated with depression cross-sectionally and prospec-tively. Severe hurricane exposure (high HES) was also associated with depression. Regression analysis showed LOR-associated depression was explained almost entirely by nontangible rather than tangible factors. Consistent with COR theory, however, nontangible LOR explained some of the association between severe hurricane exposure and depression in our models. A similar result was seen prospectively for depression at 12 months, even controlling for depression symptoms at 6 months. | Loss of Resource Scale (LOR); Hurricane Experience Score (HER); Edinburgh Postnatal Depression Scale (EPDS) | This research suggests that in- terventions that focus on restoring psychosocial resources, rather than just restoring tangible possessions and finan- cial status, could reduce the lasting psychological impact of disasters, such as Hurricane Katrina. From a public health perspective, the lasting effects of disaster are likely to be felt through this loss of nontangible resources rather than loss of objects, and the focus of both planning and response should be on protecting and addressing those needs. | PubMed, PsycINFO, Web of Science | BACKGROUND: After a natural disaster, mental disorders often become a long-term public health concern. Previous studies under smaller-scale natural disaster conditions suggest loss of psychosocial resources is associated with psychological distress. METHODS: We examined the occurrence of depression 6 and 12 months postpartum among 208 women residing in New Orleans and Baton Rouge, Louisiana, who were pregnant during or immediately after Hurricane Katrina's landfall. Based on the Conservation of Resources (COR) theory, we explored the contribution of both tangible/financial and nontangible (psychosocial) loss of resources (LOR) on the outcome of depression, measured using the Edinburgh Postnatal Depression Scale (EPDS). We also investigated the influence on depression of individuals' hurricane experience through a Hurricane Experience Score (HES) that includes such factors as witnessing death, contact with flood waters, and injury to self or family members. RESULTS: Both tangible and nontangible LOR were associated with depression cross-sectionally and prospectively. Severe hurricane exposure (high HES) was also associated with depression. Regression analysis showed LOR-associated depression was explained almost entirely by nontangible rather than tangible factors. Consistent with COR theory, however, nontangible LOR explained some of the association between severe hurricane exposure and depression in our models. A similar result was seen prospectively for depression at 12 months, even controlling for depression symptoms at 6 months. CONCLUSIONS: These results suggest the need for preventive measures aimed at preserving psychosocial resources to reduce the long-term effects of disasters. |
| **3** | Harville, E. W., et al. (2009). "Postpartum mental health after Hurricane Katrina: a cohort study." BMC Pregnancy Childbirth 9: 21. | Mental/Maternal Health | Hurricane Katrina, 2005 | All women admitted for childbirth were eligible. Women recruited needed to be 18 or over and speak English; those from Baton Rouge (control group) were required not to have had a severe exposure to Katrina (defined as being forced to evacuate or having a relative die). | Interviews were conducted in 2006–2007 with women who had been pregnant during or shortly after Hurricane Katrina. 292 New Orleans and Baton Rouge women were interviewed at delivery and 2 months postpartum. | Natural disaster is often a cause of psychopathology, and women are vulnerable to post-traumatic stress disorder (PTSD) and depression. Depression is also common after a woman gives birth. However, no research has addressed postpartum women's mental health after natural disaster. | Black women and women with less education were more likely to have had a serious experience of the hurricane. 18% of the sample met the criteria for depression and 13% for PTSD at two months postpartum. Feeling that one's life was in danger was associated with depression and PTSD, as were injury to a family member and severe impact on property. Overall, two or more severe experiences of the storm was associated with an increased risk for both depression (relative risk (RR)). Postpartum women who experience natural disaster severely are at increased risk for mental health problems, but overall rates of depression and PTSD do not seem to be higher than in studies of the general population. | Depression was assessed using the Edinburgh Depression Scale and PTSD using the Post-Traumatic Stress Checklist. Women were asked about their experience of the hurricane with questions addressing threat, illness, loss, and damage.  | [P]lanning to prevent severe exposures for the entire community is the strategy most likely to reduce mental health consequences for postpartum women. | PubMed, Web of Science | BACKGROUND: Natural disaster is often a cause of psychopathology, and women are vulnerable to post-traumatic stress disorder (PTSD) and depression. Depression is also common after a woman gives birth. However, no research has addressed postpartum women's mental health after natural disaster. METHODS: Interviews were conducted in 2006-2007 with women who had been pregnant during or shortly after Hurricane Katrina. 292 New Orleans and Baton Rouge women were interviewed at delivery and 2 months postpartum. Depression was assessed using the Edinburgh Depression Scale and PTSD using the Post-Traumatic Stress Checklist. Women were asked about their experience of the hurricane with questions addressing threat, illness, loss, and damage. Chi-square tests and log-binomial/Poisson models were used to calculate associations and relative risks (RR). RESULTS: Black women and women with less education were more likely to have had a serious experience of the hurricane. 18% of the sample met the criteria for depression and 13% for PTSD at two months postpartum. Feeling that one's life was in danger was associated with depression and PTSD, as were injury to a family member and severe impact on property. Overall, two or more severe experiences of the storm was associated with an increased risk for both depression (relative risk (RR) 1.77, 95% confidence interval (CI) 1.08-2.89) and PTSD (RR 3.68, 95% CI 1.80-7.52). CONCLUSION: Postpartum women who experience natural disaster severely are at increased risk for mental health problems, but overall rates of depression and PTSD do not seem to be higher than in studies of the general population. |
| **4** | Harville, E. W., et al. (2010). "Resilience after hurricane Katrina among pregnant and postpartum women." Women's Health Issues 20(1): 20-27. | Mental/Maternal Health | Hurricane Katrina, 2005 | Women giving birth at Tulane Hospital and Women's Hospital in Louisiana were approached for participation. They needed to have lived in the New Orleans area before Katrina. | 222 pregnant southern Louisiana women and 292 postpartum women completed interviews at delivery and 8 weeks later. | Although disaster causes distress, many disaster victims do not develop long-term psychopathology. Others report beneﬁts after traumatic experiences (posttraumatic growth). The objective of this study was to examine demographic and hurricane-related predictors of resilience and posttraumatic growth. | Many pregnant and postpartum women are resilient from the mental health consequences of disaster, and perceive beneﬁts after a traumatic experience. Thirty-ﬁve percent of pregnant and 34% of the postpartum women were resilient from depression, whereas 56% and 49% were resilient from posttraumatic stress disorder. Re-silience was most likely among White women, older women, and women who had a partner. A greater experience of the storm, particularly injury/illness or danger, was associated with lower resilience. Experiencing damage because of the storm was associated with increased report of some perceived beneﬁts. | Edinburgh Depression Scale; Post-Traumatic Stress Checklist | NA | PubMed | BACKGROUND: Although disaster causes distress, many disaster victims do not develop long-term psychopathology. Others report benefits after traumatic experiences (posttraumatic growth). The objective of this study was to examine demographic and hurricane-related predictors of resilience and posttraumatic growth. METHODS: We interviewed 222 pregnant southern Louisiana women and 292 postpartum women completed interviews at delivery and 8 weeks later. Resilience was measured by scores lower than a nonaffected population, using the Edinburgh Depression Scale and the Post-Traumatic Stress Checklist. Posttraumatic growth was measured by questions about perceived benefits of the storm. Women were asked about their experience of the hurricane, addressing danger, illness/injury, and damage. Chi-square tests and log-Poisson models were used to calculate associations and relative risks for demographics, hurricane experience, and mental health resilience and perceived benefit. FINDINGS: Thirty-five percent of pregnant and 34% of the postpartum women were resilient from depression, whereas 56% and 49% were resilient from posttraumatic stress disorder. Resilience was most likely among White women, older women, and women who had a partner. A greater experience of the storm, particularly injury/illness or danger, was associated with lower resilience. Experiencing damage because of the storm was associated with increased report of some perceived benefits. CONCLUSION: Many pregnant and postpartum women are resilient from the mental health consequences of disaster, and perceive benefits after a traumatic experience. Certain aspects of experiencing disaster reduce resilience, but may increase perceived benefit. |
| **5** | Harville, E. W., et al. (2011). "Combined effects of Hurricane Katrina and Hurricane Gustav on the mental health of mothers of small children." J Psychiatr Ment Health Nurs 18(4): 288-296. | Mental/Maternal Health | Hurricane Katrina, 2005 | Women giving birth at Tulane Hospital and Women's Hospital in Louisiana were approached for participation. They needed to have lived in the New Orleans area before Katrina. | 102 women from Southern Louisiana were interviewed by telephone. | Few studies have assessed the results of multiple exposures to disaster. Our objective was to examine the effect of experiencing Hurricane Gustav on mental health of women previously exposed to Hurricane Katrina. | Women who had a severe experience of both Gustav and Katrina scored higher on the mental health scales, but ﬁnding new ways to cope after Katrina or feeling more prepared was not protective. About half the population had better mental health scores after Gustav than at previous measures. Improvement was more likely among those who reported high social support or low levels of minor stressors, or were younger. Trait resilience mitigated the effect of hurricane exposure. Multiple disaster experiences are associated with worse mental health overall, although many women are resilient. Perceiving beneﬁt after the ﬁrst disaster was not protective. | Edinburgh Depression Scale; Post-Traumatic Stress Checklist | NA | PubMed | Few studies have assessed the results of multiple exposures to disaster. Our objective was to examine the effect of experiencing Hurricane Gustav on mental health of women previously exposed to Hurricane Katrina. A total of 102 women from Southern Louisiana were interviewed by telephone. Experience of the hurricanes was assessed with questions about injury, danger and damage, while depression was assessed with the Edinburgh Depression Scale and post-traumatic stress disorder using the Post-Traumatic Checklist. Minor stressors, social support, trait resilience and perceived benefit had been measured previously. Mental health was examined with linear and log-linear models. Women who had a severe experience of both Gustav and Katrina scored higher on the mental health scales, but finding new ways to cope after Katrina or feeling more prepared was not protective. About half the population had better mental health scores after Gustav than at previous measures. Improvement was more likely among those who reported high social support or low levels of minor stressors, or were younger. Trait resilience mitigated the effect of hurricane exposure. Multiple disaster experiences are associated with worse mental health overall, although many women are resilient. Perceiving benefit after the first disaster was not protective. |
| **6** | Oni, O., et al. (2012). "Impact of coping styles on post-traumatic stress disorder and depressive symptoms among pregnant women exposed to Hurricane Katrina." Am J Disaster Med 7(3): 199-209. | Mental/Maternal Health | Hurricane Katrina, 2005, USA | 192 women (133 from New Orleans and 92 from Batron Rouge) who were pregnant during Hurricane Katrina or became pregnant immediately after the hurricane. | Women were interviewed regarding their hurricane experience, perceived stress, and mental health outcomes. Multivariable regression models were run to determine the effects of coping styles on mental health and the interactions among coping styles, hurricane experience, and perceived stress on mental health. | Experiencing natural disasters such as hurricanes is associated with post-traumatic stress disorder (PTSD) and depression. We examined the role played by perceived stress and coping styles in explaining and modifying this association among pregnant women exposed to Hurricane Katrina. | Coping styles are potential moderators of the effects of stress on mental health of pregnant women. Apart from the positive reframing and humor coping stypes, all coping styles correlated positively with PTSD or depression. The instrumental support, denial, venting, and behavioral disengagement coping styles were significantly associated with worsened PTSD symptoms among those who reported higher perceived stress. Use of a humor coping style seemed to reduce the effect of perceived stress on depressive symptoms, while use of instrumental support and behavioral disengagement were both associated with more symptoms of depression among those who perceived more stress. There were no strong interactinos between coping style and hurricane experience. | Brief COPE, Post-Traumatic Checklist, Edinburgh Depression Scale | The relationships suggest that encouraging positive and reducing counterproductive coping strategies might reduce PTSD and depression symptoms among pregnant women who preceive stress or are exposed to hurricane stress. | PubMed | OBJECTIVE: Experiencing natural disasters such as hurricanes is associated with post-traumatic stress disorder (PTSD) and depression. We examined the role played by perceived stress and coping styles in explaining and modifying this association among pregnant women exposed to Hurricane Katrina. DESIGN: The study comprised 192 women (133 from New Orleans and 59 from Baton Rouge) who were pregnant during Hurricane Katrina or became pregnant immediately after the hurricane. Women were interviewed regarding their hurricane experience, perceived stress, and mental health outcomes. Coping styles was assessed using the Brief COPE, PTSD symptoms using the Post-Traumatic Checklist, and depressive symptoms using the Edinburgh Depression Scale. Multivariable regression models were run to determine the effects of coping styles on mental health and the interactions among coping styles, hurricane experience, and perceived stress on mental health. RESULTS: Apart from the positive reframing and humor coping styles, all coping styles correlated positively with PTSD or depression (p < 0.05). The instrumental support, denial, venting, and behavioral disengagement coping styles were significantly associated with worsened PTSD symptoms among those who reported higher perceived stress (p < 0.05). Use of a humor coping style seemed to reduce the effect of perceived stress on depressive symptoms (p = 0.02 for interaction) while use of instrumental support (p = 0.04) and behavioral disengagement (p < 0.01) were both associated with more symptoms of depression among those who perceived more stress. There were no strong interactions between coping style and hurricane experience. CONCLUSION: Coping styles are potential moderators of the effects of stress on mental health of pregnant women. |
| **7** | Oni, O., et al. (2015). "Relationships Among Stress Coping Styles and Pregnancy Complications Among Women Exposed to Hurricane Katrina." J Obstet Gynecol Neonatal Nurs 44(2): 256-267. | Mental/Maternal Health | Hurricane Katrina, 2005, USA | The study included 146 women (122 from New Orleans and 24 from Baton Rouge), who were pregnant during or immediately after Hurricane Katrina. | Participants were interviewed regarding their hurricane experiences and perceived stress, and coping styles were assessed using the Brief COPE. Medical charts were also reviewed to obtain information about pregnancy outcomes. Logistic regression was performed to determine possible associations. | The purpose of this study was to examine the relationship between maternal stress exposure, stress coping styles, and pregnancy com-plications. | Hurricane exposure was signiﬁcantly associated with induction of labor and current perceived stress. Stress perception signiﬁcantly predisposed to pregnancy-induced hypertension and gestational diabetes. Use of planning, acceptance, humor, instrumental support, and venting coping styles were associated with a signiﬁcantly reduced occurrence of pregnancy complications. Higher rates for gestational diabetes was found among women using the denial coping style. Exposure to disaster-related stress may complicate pregnancy, whereas some coping styles may mitigate its effects. Further research should explore how coping styles may mitigate or exacerbate the effect of major stressors and how positive coping styles can be encouraged or augmented. | Hurricane Experience Scale; 10-item Cohen Perceived Stress Scale (PSS); Carver's Brief COPE | NA | PubMed | OBJECTIVE: To examine the relationship between maternal stress exposure, stress coping styles, and pregnancy complications. DESIGN: Quantitative, cross-sectional, and prospective study. SETTING: Tulane-Lakeside Hospital, New Orleans, LA and Women's Hospital, Baton Rouge, LA. PARTICIPANTS: The study included 146 women (122 from New Orleans and 24 from Baton Rouge), who were pregnant during or immediately after Hurricane Katrina. METHODS: Participants were interviewed regarding their hurricane experiences and perceived stress, and coping styles were assessed using the Brief COPE. Medical charts were also reviewed to obtain information about pregnancy outcomes. Logistic regression was performed to determine possible associations. RESULTS: Hurricane exposure was significantly associated with induction of labor (adjusted odds ratio [aOR] = 1.39; 95% confidence interval [CI] [1.03, 1.86], P = .03) and current perceived stress (aOR = 1.50, CI [1.34, 1.99], P < .01). Stress perception significantly predisposed to pregnancy-induced hypertension (aOR = 1.16, CI [1.05, 1.30], P < .01) and gestational diabetes (aOR = 1.13, CI [1.02, 1.25], P = .03). Use of planning, acceptance, humor, instrumental support, and venting coping styles were associated with a significantly reduced occurrence of pregnancy complications (P < .05). Higher rates for gestational diabetes was found among women using the denial coping style (aOR = 2.25, CI [1.14, 4.45], P = .02). CONCLUSION: Exposure to disaster-related stress may complicate pregnancy, whereas some coping styles may mitigate its effects. Further research should explore how coping styles may mitigate or exacerbate the effect of major stressors and how positive coping styles can be encouraged or augmented. |
| **8** | Paxson, C., et al. (2012). "Five years later: Recovery from post traumatic stress and psychological distress among low-income mothers affected by Hurricane Katrina." Social Science & Medicine 74(2): 150-157. | Mental/Maternal Health | Hurricane Katrina, 2005, USA | Low-income mothers | Longitudinal surveys of 532 low-income mothers from New Orleans were conducted approximately one year before, 7 e19 months after, and 43e54 months after Hurricane Katrina. The surveys collected information on mental health, social support, earnings and hurricane experiences. | Hurricane Katrina, which struck the Gulf Coast of the United States in August 2005, exposed area resi-dents to trauma and extensive property loss. However, little is known about the long-run effects of the hurricane on the mental health of those who were exposed. This study documents long-run changes in mental health among a particularly vulnerable groupdlow income mothersdfrom before to after the hurricane, and identiﬁes factors that are associated with different recovery trajectories. | We ﬁnd that although PTSS has declined over time after the hurricane, it remained high 43e54 months later. PD also declined, but did not return to pre-hurricane levels. At both time periods, psychological distress before the hurricane, hurricane-related home damage, and exposure to traumatic events were associated with PTSS that co-occurred with PD. Hurricane-related home damage and traumatic events were associated with PTSS without PD. Home damage was an especially important predictor of chronic PTSS, with and without PD. Most hurricane stressors did not have strong associations with PD alone over the short or long run. Over the long run, higher earnings were protective against PD, and greater social support was protective against PTSS. These results indicate that mental health problems, particularly PTSS alone or in co-occurrence with PD, among Hurricane Katrina survivors remain a concern, especially for those who experienced hurricane-related trauma and had poor mental health or low socioeconomic status before the hurricane. | Impact of Event Scale-Revised, K6 scale | NA | PubMed | Hurricane Katrina, which struck the Gulf Coast of the United States in August 2005, exposed area residents to trauma and extensive property loss. However, little is known about the long-run effects of the hurricane on the mental health of those who were exposed. This study documents long-run changes in mental health among a particularly vulnerable group-low income mothers-from before to after the hurricane, and identifies factors that are associated with different recovery trajectories. Longitudinal surveys of 532 low-income mothers from New Orleans were conducted approximately one year before, 7 -19 months after, and 43-54 months after Hurricane Katrina. The surveys collected information on mental health, social support, earnings and hurricane experiences. We document changes in post-traumatic stress symptoms (PTSS), as measured by the Impact of Event Scale-Revised, and symptoms of psychological distress (PD), as measured by the K6 scale. We find that although PISS has declined over time after the hurricane, it remained high 43-54 months later. PD also declined, but did not return to pre-hurricane levels. At both time periods, psychological distress before the hurricane, hurricane-related home damage, and exposure to traumatic events were associated with PISS that co-occurred with PD. Hurricane-related home damage and traumatic events were associated with PTSS without PD. Home damage was an especially important predictor of chronic PTSS, with and without PD. Most hurricane stressors did not have strong associations with PD alone over the short or long run. Over the long run, higher earnings were protective against PD, and greater social support was protective against PTSS. These results indicate that mental health problems, particularly PTSS alone or in co-occurrence with PD, among Hurricane Katrina survivors remain a concern, especially for those who experienced hurricane-related trauma and had poor mental health or low socioeconomic status before the hurricane. (C) 2011 Elsevier Ltd. All rights reserved. |
| **9** | Savage, J., et al. (2010). "Post-Katrina perinatal mood and the use of alternative therapies." J Holist Nurs 28(2): 123-132; quiz 133-125. | Mental/Maternal Health | Hurricane Katrina, 2005, USA | 199 pregnant and postpartum women in the greater New Orleans area recruited from hospital-based prenatal classes, postpartum units, and a postpartum database | A convenience sample of 199 postpartal/expectant mothers completed two questionnaires. | The purpose of this cross-sectional, exploratory study is to describe perinatal moods and complementary alternative therapy (CAT) use among childbearing women living in New Orleans, post–Hurricane Katrina. How women coped with the disaster with limited access to mental health services was not known. | The mean EPDS score was 8.47, yet 37% of the postpartum subjects had scores ≥10, indicating risk for depres-sion, while 25% of the women in the prenatal group had scores ≥10. Ninety-five percent of women reported using CATs to improve their mood during pregnancy. Two themes emerged from the qualitative data: (a) Distress and Instability: The Katrina Effect and (b) Life Transitions. Post-Katrina, most women were proactive in seeking ways to improve their mood. Knowing that there are effective, alternative therapies to improve mood during the perinatal period, nurses and other care providers can offer more information about these nonmedical, accessible interventions. | Edinburgh Postnatal Depression Scale; Perinatal Alternative Therapy Index | Health care providers should follow recommendations to screen all expectant and new mothers for perinatal mood changes, and positive coping strate- gies, such as risk assessment, are recommended pre- natally, at the point of initial care, and every trimester thereafter. Health care providers can also screen and assess all pregnant women and partners attending childbirth education classes, 24 to 48 hours after delivery, and at the first postpartum visit with the care provider. Well baby visits provide the family nurse practitioner or pediatrician with addi- tional opportunities to assess new mothers. For those women with at-risk scores, brief counseling incorporating the use of CAT should be conducted including scheduling a subsequent appointment with a follow-up phone call. | PubMed | PURPOSE AND DESIGN: The purpose of this cross-sectional, exploratory study is to describe perinatal moods and complementary alternative therapy (CAT) use among childbearing women living in New Orleans, post-Hurricane Katrina. How women coped with the disaster with limited access to mental health services was not known. METHOD: A convenience sample of 199 postpartal/expectant mothers completed two questionnaires. The Edinburgh Postnatal Depression Scale measured risk for perinatal depression (>10 for depression risk) and the Perinatal Alternative Therapy Index (PATI) obtained subjects' self-perceived overall scores for anxiety and overall mood, frequency and type of use of alternative therapies, and health behaviors. Open-ended questions solicited qualitative data. FINDINGS: The mean EPDS score was 8.47, yet 37% of the postpartum subjects had scores >or=10, indicating risk for depression, while 25% of the women in the prenatal group had scores >or=10. Ninety-five percent of women reported using CATs to improve their mood during pregnancy. Two themes emerged from the qualitative data: (a) Distress and Instability: The Katrina Effect and (b) Life Transitions. CONCLUSION: Post-Katrina, most women were proactive in seeking ways to improve their mood. Knowing that there are effective, alternative therapies to improve mood during the perinatal period, nurses and other care providers can offer more information about these nonmedical, accessible interventions. |
| **10** | Xiong, X., et al. (2008). "Exposure to Hurricane Katrina, post-traumatic stress disorder and birth outcomes." Am J Med Sci 336(2): 111-115. | Mental/Maternal Health | Hurricane Katrina, 2005, USA | 220 women from New Orleans and 81 from Baton Rouge who were pregant during Hurricane Katrina or became pregnant immediately after the hurricane. | We collected data prospectively from a cohort of 301 women from New Orleans and Baton Rouge. Pregnant women were interviewed during pregnancy about their experiences during the hurricane, as well as whether they had experienced symptoms of post-traumatic stress disorder (PTSD) and/or depression. High hurricane exposure was defined as having three or more of the eight severe hurricane experiences, such as feeling that one's life was in danger, walking through floodwaters, or having a loved one die. | Little is known about the effects of natural disasters on pregnancy outcomes. We studied mental health and birth outcomes among women exposed to Hurricane Katrina. | The frequency of low birth weight was higher in women with high hurricane exposure than women without high hurricane exposure. The frequency of preterm birth was higher in women with high hurricane exposure than women without high hurricane exposure. There were no significant differences in the frequency of low birth weight or preterm birth between women with PTSD or depression and women without PTSD or depression. Women who had high hurricane exposure were at an increased risk of having low birth weight infants. Rather than a general exposure to disaster, exposure to specific severe disaster events and the intensity of the disaster experience may be better predictors of poor pregnancy outcomes. To prevent poor pregnancy outcomes during and after disasters, future disaster preparedness may need to include the planning of earlier evacuation of pregnant women to minimize their exposure to severe disaster events. | Post-traumatic Stress Checklist (PCL) - Civilian Version; Ediburgh Depression Scale | In order to reduce poor pregnancy outcomes during and after disasters, future disaster preparedness may include planning of earlier evacuation of pregnant women to safe locations to minimize their direct exposure to severe disaster events. Our data would also suggest, however, that disaster is unlikely to cause a major increase in pregnancy complications among the general, less exposed population. | PubMed, Web of Science | BACKGROUND: Little is known about the effects of natural disasters on pregnancy outcomes. We studied mental health and birth outcomes among women exposed to Hurricane Katrina. METHODS: We collected data prospectively from a cohort of 301 women from New Orleans and Baton Rouge. Pregnant women were interviewed during pregnancy about their experiences during the hurricane, and whether they had experienced symptoms of post-traumatic stress disorder (PTSD) and/or depression. High hurricane exposure was defined as having 3 or more of the 8 severe hurricane experiences, such as feeling that one's life was in danger, walking through floodwaters, or having a loved one die. RESULTS: The frequency of low birth weight was higher in women with high hurricane exposure (14.0%) than women without high hurricane exposure (4.7%), with an adjusted odds ratio (aOR): 3.3; 95% confidence interval (CI): 1.13-9.89; P < 0.01. The frequency of preterm birth was higher in women with high hurricane exposure (14.0%) than women without high hurricane exposure (6.3%), with aOR: 2.3; 95% CI: 0.82-6.38; P > 0.05. There were no significant differences in the frequency of low birth weight or preterm birth between women with PTSD or depression and women without PTSD or depression (P > 0.05). CONCLUSIONS: Women who had high hurricane exposure were at an increased risk of having low birth weight infants. Rather than a general exposure to disaster, exposure to specific severe disaster events and the intensity of the disaster experience may be better predictors of poor pregnancy outcomes. To prevent poor pregnancy outcomes during and after disasters, future disaster preparedness may need to include the planning of earlier evacuation of pregnant women to minimize their exposure to severe disaster events. |
| **11** | Xiong, X., et al. (2010). "Hurricane Katrina experience and the risk of post-traumatic stress disorder and depression among pregnant women." Am J Disaster Med 5(3): 181-187. | Mental/Maternal Health | Hurricane Katrina, 2005, USA | 220 women from New Orleans and 81 from Baton Rouge who were pregant during Hurricane Katrina or became pregnant immediately after the hurricane. | We collected data prospectively from a cohort of 301 women from New Orleans and Baton Rouge. Pregnant women were interviewed during pregnancy about their experiences during the hurricane, as well as whether they had experienced symptoms of post-traumatic stress disorder (PTSD) and/or depression. High hurricane exposure was defined as having three or more of the eight severe hurricane experiences, such as feeling that one's life was in danger, walking through floodwaters, or having a loved one die. | Little is known about the effects of disaster exposure and intensity on the development of mental disorders among pregnant women. The aim of this study was to examine the effect of exposure to Hurricane Katrina on mental health in pregnant women. | The frequency of PTSD was higher in women with high hurricane exposure (13.8%) than women without high hurricane exposure (1.3%). The frequency of depression was higher in women with high hurricane exposure (32.3%) than women without high hurricane exposure (12.3%). Moreover, the risk of PTSD and depression increased with an increasing number of severe experiences of the hurricane. Pregnant women who had severe hurricane experiences were at a significantly increased risk for PTSD and depression. This information should be useful for screening pregnant women who are at higher risk of developing mental disorders after disaster. | Post-traumatic Stress Checklist (PCL) - Civilian Version; Ediburgh Depression Scale | NA | PubMed | OBJECTIVE: Little is known about the effects of disaster exposure and intensity on the development of mental disorders among pregnant women. The aim of this study was to examine the effect of exposure to Hurricane Katrina on mental health in pregnant women. DESIGN: Prospective cohort epidemiological study. SETTING: Tertiary hospitals in New Orleans and Baton Rouge, U.S.A. PARTICIPANTS: Women who were pregnant during Hurricane Katrina or became pregnant immediately after the hurricane. MAIN OUTCOME MEASURES: Post-traumatic stress disorder (PTSD) and depression. RESULTS: The frequency of PTSD was higher in women with high hurricane exposure (13.8 percent) than women without high hurricane exposure (1.3 percent), with an adjusted odds ratio (aOR) of 16.8 (95% confidence interval: 2.6-106.6) after adjustment for maternal race, age, education, smoking and alcohol use, family income, parity, and other confounders. The frequency of depression was higher in women with high hurricane exposure (32.3 percent) than women without high hurricane exposure (12.3 percent), with an aOR of 3.3 (1.6-7.1). Moreover, the risk of PTSD and depression increased with an increasing number of severe experiences of the hurricane. CONCLUSIONS: Pregnant women who had severe hurricane experiences were at a significantly increased risk for PTSD and depression. This information should be useful for screening pregnant women who are at higher risk of developing mental disorders after a disaster. |
| **12** | Adeola, F. O. (2009). "Mental Health & Psychosocial Distress Sequelae of Katrina: An Empirical Study of Survivors." Human Ecology Review 16(2): 195-210. | Mental Health | Hurricane Katrina, 2005 | Random sample of 1,510 subjects aged 18 and above drawn from a sampling frame of approximately 460,000 Hurricane Katrina survivors. | Surveys 1-2 months and again 1 year post-disaster. | The purpose of this research is to assess variation in mental health and psycho-social problems among the population impacted by Hurricane Katrina. Specifically, the study will ex-plore the extent to which the survivors (evacuees or displaced population) of Katrina exhibited psycho-social stress symptoms during the immediate impact phase and one year post-impact phase of the disaster. Furthermore, it will assess the extent to which socio-economic and demographic variables predict psychosocial distress sequelae of Katrina. | Significant racial differences were found in psychological impacts including reported symptoms of sleeplessness, anxiety, depression, and worries about the future. In a series of multivariate analyses including factor analysis and OLS regression models, residency in New Orleans parish prior to the storm, older age, female gender, having dependent children, unemployment, extent of property damage, and financial impacts sustained consistently predict pyschological distress among the surviviors. | Gallup/CNN/USA Today/Red Cross Hurricane Katrina Surivovors Surveys, collected during immediate impact phase (2005) and one year after the disaster (2006). | NA | Web of Science | This study focuses on mental health and psychosocial distress sequelae of Hurricane Katrina cataclysm among survivors. The purpose of this article is to: (1) assess the variation in psychosocial distress among the survivors of Katrina by socio-demographic, structural and situational factors; (2) determine if there are significant racial and gender differences in the extent of psychological stress, especially between Black and White, male and female survivors; and (3) to evaluate the influence of resource loss or financial burden imposed, social support, and perceived victimization on psychosocial distress among survivors. The Gallup/CNN/USA Today survey data collected in 2005 and 2006 from a representative (random) sample of Katrina survivors are used. Among the results, significant racial differences were found in psychological impacts including reported symptoms of sleeplessness, anxiety, depression, and worries about the future. In a series of multivariate analyses including factor analysis and OLS regression models, residency in Orleans parish prior to the storm, older age, female gender; having dependent children, unemployment, extent of property damage, and financial impacts sustained consistently predict psychological distress among the survivors. The theoretical, methodological, and applied policy implications of these findings are discussed. |
| **13** | Amstadter, A. B., et al. (2009). "Association Between COMT, PTSD, and Increased Smoking Following Hurricane Exposure in an Epidemiologic Sample." Psychiatry 72(4): 360-369. | Mental Health | Florida Hurricane Season, 2004 | 614 adults from the 2004 Florida Hurricane Study who returned saliva DNA samples via mail. | Participants completed structured telephone interviews and returned saliva DNA samples via mail within 6-9 months following the 2004 Florida hurricane season.  | The purpose of this study was to examine a possible association of COMT VAl158Met and post-disaster increases in cigarette smoking.  | Hurricane exposure and social support were found to be associated with increased smoking. Increased smoking post-hurricane was reported by 4.4% of participants. PTSD and [genetic predisposition to smoking addiction] were significant predictors of increased smoking post-hurricane. For individuals [who are predisposed to smoking addiction], exposure to even low levels of environmental stress are sufficient to increase smoking behaviors above and beyond the variance accounted for by PTSD, a replicated predictor of smoking. PTSD is the most powerful predictor of increased smoking, with individuals meeting criteria at over 14 times higher risk for increased smoking than individuals without the disorder.  | NA; telephone interview with structured questions. | Our social support finding has public health implications, as instrumental assistance (e.g., food, shelter), emotional support, and simple companionship delivered via churches, synagogus, mosques, senior centers, schools and other public or semi-public institutions may well be among the best and most efficient approaches to community-based intervention following natural disasters such as hurricanes for the great majority of affected individuals who may have low social support. | ProQuest | Tobacco smoking has been found to increase after the experience of a traumatic event and has been associated with posttraumatic stress disorder (PTSD). Initiation and persistence of cigarette smoking is moderately heritable; two recent investigations have implicated the COMT Val158Met (also known as rs4680) polymorphism in smoking age of initiation, dependence, as well as in quantity and frequency of smoking. To examine a possible association of COMT Val158Met and posttrauma increases in cigarette smoking, we studied 614 adults from the 2004 Florida Hurricane Study who returned saliva DNA samples via mail. PTSD was strongly associated with increased smoking. Moreover, each COMT Val158Met 'Met' allele predicted a 2.10-fold risk of smoking post-hurricane, independent of PTSD; follow-up analyses revealed that this finding was primarily driven by European-American males. This study represents the first genetic association study (to our knowledge) of smoking behavior following an acute stressor. [PUBLICATION ABSTRACT] |
| **14** | Benight, C. C. and M. L. Harper (2002). "Coping self-efficacy perceptions as a mediator between acute stress response and long-term distress following natural disasters." J Trauma Stress 15(3): 177-186. | Mental Health | Fire and subsequent flood (two months later), Colorado, 1996 | 50 participants who lived within the affected areas of the fire and floods volunteered to complete a series of psychological questionnaires. | Surveys collected between 3-8 weeks following flood; 90% of original participants completed follow-up surveys 1 year later | The purpose of this study was to test the hypothesis that CSE adn trauma recovery provides a preliminary foundation that indicates self-perceptions of coping capability are related to psychological outcomes. | ASR and Time 1 CSE are important cross-sectional predictors of distress shortly after the disasters (between 2 and 8 weeks). A year later, Time 1 distress and Time 2 CSE perceptions emerge as consistent predictors of subsequent PTSD symptoms and general distress levels. Gender was a significant predictor only for Time 2 PTSD symptoms, with women reporting more symptoms. The best predictor of Time 2 outcomes appears to be Time 1 distress levels. CSE perceptions taken shortly after a trauma may provide one key mechanism by which ASR develops into PTSD symptom reporting. | Stanford Acute Stress Reaction Questionnaire (SASRQ), Natural Disaster Coping Self-Efficacy Scale (NDCSE), Brief Symptom Inventory, Impact of Event Scale (IES), and demographic assesment | Interventions incorporating cognitive behavioral techniques specifically tied to CSE perceptions (e.g., goal setting, cognitive restructuring, reward systems) could be designed to help affected people increase their mastery experiences in dealing with logistical nightmares, material losses, emotional distress, and other major recovery challenges. Promotion of mastery experiences for specific environmental demands in combination with verbal persuasion (i.e., validation and support) could help individuals to navigate the posttrauma environment creating a sense of accomplishment rather than overwhelming defeat. | PubMed, Web of Science | The mediating effect of coping self-efficacy (CSE) perceptions between acute stress responses (ASR) and 1-year distress following two disasters was tested. Between 3 and 8 weeks after the second disaster and again at 1 year, 46 residents completed questionnaires. Posttraumatic Stress Disorder (PTSD) symptoms and global distress served as outcomes. Multiple regression demonstrated that ASR and Time I CSE were significant predictors of both Time 1 outcomes. Time 1 PTSD symptoms and Time 2 CSE were significant factors for Time 2 PTSD symptoms. Gender was significant for Time 2 PTSD symptoms, but not for Time 2 global distress. Longitudinally, Time 1 CSE predicted Time 2 PTSD symptoms, but not general distress. CSE mediated between ASR and both psychological outcomes at Time 2. Coping self-efficacy perceptions provide a possible intervention target. |
| **15** | Boscarino, J. A., et al. (2014). "Mental health outcomes among vulnerable residents after Hurricane Sandy: implications for disaster research and planning." Am J Disaster Med 9(2): 107-120. | Mental Health | Hurricane Sandy, NJ, USA | Adults who were permanent residents in a shore community in Monmouth County, NJ, were eligible and were contacted by random sampling. | Six months following Hurricane Sandy, a cross-sectional survey of 200 adults residing in beach communities directly exposed to the storm located in Monmouth County, NJ, was conducted. | The purpose of this study was to evaluate mental health outcomes among New Jersey shore residents with health impair-ments and disabilities after Hurricane Sandy. | 52.5 percent of participants reported recent hospitalizations, physical limitations, fair to poor health status, multiple chronic health conditions, or physical disabilities. A total of 14.5 percent of residents screened positive for PTSD and 6.0 percent met criteria for depression 6 months after Sandy. In addition, 20.5 percent sought some type of professional counseling after Sandy and 30.5 percent experienced PTSD symptoms, depression, sought professional mental health support, or used psychotropic medications. In multivariate analyses, the best predictors of mental health and service use were having sleep problems, suicidal thoughts, moderate or severe pain, and having high exposure hurricane-related events. Analyses also suggested that noncollege graduates were more likely to receive mental health services, while women were less likely to have depression. Having physical impairments and health conditions were not directly related to adverse mental health outcomes following Sandy, but having sleep problems, pain, or suicidal thoughts were. | Using random-digit dialing (RDD), a tele-phone survey was conducted approximately 6 months after the storm. Experienced and well-trained mental health interviewers conducted the interviews, using computer-assisted telephone interviewing technology. | Those experiencing post-disaster sleep disorders may be good candidates for cognitive behavioral interventions following traumatic exposures. These and other subgroups may be at higher risk for mental health problems in the future. In addition, as access to care improves, we are likely to see increases in mental health services use over time. | PubMed | OBJECTIVE: To evaluate mental health outcomes among New Jersey shore residents with health impairments and disabilities after Hurricane Sandy. DESIGN AND SETTING: Six months following Hurricane Sandy, a cross-sectional survey of 200 adults residing in beach communities directly exposed to the storm located in Monmouth County, NJ, was conducted. MAIN OUTCOME MEASURES: Post-traumatic stress disorder (PTSD), depression, mental health service use, and medication use. RESULTS: The average age of residents surveyed was 59 years (SD = 13.7) and 52.5 percent (95% CI = 45.5-59.4) reported recent hospitalizations, physical limitations, fair to poor health status, multiple chronic health conditions, or physical disabilities. A total of 14.5 percent (95% CI = 10.2-20.1) of residents screened positive for PTSD and 6.0 percent (95% CI = 3.1-10.2) met criteria for depression 6 months after Sandy. In addition, 20.5 percent (95% CI = 15.4-26.7) sought some type of professional counseling after Sandy and 30.5 percent (95% CI = 24.5-37.3) experienced PTSD symptoms, depression, sought professional mental health support, or used psychotropic medications. In multivariate analyses, the best predictors of mental health and service use were having sleep problems, suicidal thoughts, moderate or severe pain, and having high exposure hurricane-related events. Analyses also suggested that noncollege graduates were more likely to receive mental health services (OR = 3.10, p = 0.009), while women were less likely to have depression (OR = 0.12, p = 0.038). CONCLUSION: Having physical impairments and health conditions were not directly related to adverse mental health outcomes following Sandy, but having sleep problems, pain, or suicidal thoughts were. Further research is needed to assess the health status of community residents with serious health impairments over time following disasters. |
| **16** | Brown, J. S., et al. (2010). "After Hurricanes Katrina and Rita: Gender Differences in Health and Religiosity in Middle-Aged and Older Adults." Health Care for Women International 31(11): 997-1012. | Mental Health | Hurricane Katrina, 2005 | The study sample was composed of 59 persons for whom pre-hurricane (baseline), Wave 1, and Wave 2 data were available. There were 31 females (age range 49 to 95 years) and 28 males (age range 47 to 93 years). | 59 participants were evaluated prior to, from 1-3 months after, and 6-13 months after hurricanes. | Our primary aim in this study was to examine changes in health-related quality of life before and after the storms and to compare and contrast these changes among women and men. Our secondary aim was to consider gender differences in social support and religiosity as indicators of psychological well-being in a post-disaster context.  | Analyses of pre- and post-disaster SF-36 scores yielded changes in physical function and bodily pain. Mental health scores were lower for women than men. Gender differences were observed in religious beliefs and religious coping, favoring women. Religious beliefs and religious coping were negatively correlated with phys-ical function, implying that stronger reliance on religiosity as a coping mechanism may be more likely among those who are less physically capable. | Medical Outcomes Study Short Form-36; LHAS religious beliefs and practices questionnaire. | International recovery programs should not focus their efforts only on rebuilding the local infrastructure, but also on helping survivors maintain social networks and religious faith, as these may foster successful post-disaster coping strategies among both men and women. | PubMed, Web of Science | We examined health-related quality of life in adults in the Louisiana Health Aging Study (LHAS) after Hurricanes Katrina and Rita (HK/R) that made landfall on the U.S. Gulf Coast region in 2005. Analyses of pre- and post-disaster SF-36 scores yielded changes in physical function and bodily pain. Mental health scores were lower for women than men. Gender differences were observed in religious beliefs and religious coping, favoring women. Religious beliefs and religious coping were negatively correlated with physical function, implying that stronger reliance on religiosity as a coping mechanism may be more likely among those who are less physically capable. |
| **17** | Cepeda, A., et al. (2010). "Patterns of substance use among Hurricane Katrina evacuees in Houston, Texas." Disasters 34(2): 426-446. | Mental Health | Hurricane Katrina, 2005 | Persons eligible for the study were those living in one of the Katrina­affected areas, reporting substance use six months prior to and/or post Katrina, and/or in drug treatment six months prior to Katrina, more than 18 years but not older than 65, and currently living in the Houston metropolitan area. | Structured interviews with 200 Katrina evacuees currently living in Houston were collected 8-14 months after the disaster. | The purpose of this study was to determine whether African Americans displaced from New Orleans during Hurricane Katrina would be more vulnerable to post­disaster substance use increases given their lack of economic resources, severity of exposure and involve­ment in substance use and other risk behaviours prior to the storm. | An overall moderate increase in substance use was found among this population of displaced low income and substance using disaster victims. Those with the strongest attachment to this community, such as women, young adults and individuals with higher edu­cation, were at elevated risk of increasing their alcohol and tobacco use. Multivariate analysis revealed that rises in alcohol and tobacco use were positively associated with education. Females and younger evacuees were more likely to have increased alcohol and tobacco use. Illict drug use increase was positively associated with resource loss and leaving the city before Katrina. Decreases in alcohol and tobacco and illicit drug use were found to be associated with disaster-related exposure. | Traumatic Stress Schedule (TSS), Resources Questionnaire, Self-reported stubstance use data for alcohol, barbituates, cocaine, crack, ecstasy, marijuana, sedatives, tobacco, and tranquilisers.  | We identified a poor inner city population that was at greatest risk during the disaster situation and was highly dependent on public sector services. The findings from this research point to the impor- tance of developing public health disaster policies that specifically target substance- using populations in need of special drug treatment services (Wang et al., 2007, 2008). | ProQuest | This paper focuses on changing patterns of substance use among low income, African American drug users evacuated from New Orleans, Louisiana, during Hurricane Katrina of August 2005. It examines the relationship between increases and decreases in alcohol and tobacco (AT) use and illicit drug (ID) use after Katrina and pre-disaster and within-disaster factors. Data from structured interviews with 200 Katrina evacuees currently living in Houston were collected 8-14 months after the disaster. Multivariate analysis revealed that rises in AT use were positively associated with education. Females and younger evacuees were more likely to have increased AT use. ID use increase was positively associated with resource loss and leaving the city before Katrina. Decreases in AT and ID use were found to be associated with disaster-related exposure. The paper discusses the specific consequences of disasters on disadvantaged minority substance users and the importance of developing public health disaster policies that target this population. |
| **18** | Chan, C. S. and J. E. Rhodes (2013). "Religious coping, posttraumatic stress, psychological distress, and posttraumatic growth among female survivors four years after Hurricane Katrina." J Trauma Stress 26(2): 257-265. | Mental Health | Hurricane Katrina, 2005 | Participants were from two community colleges in New Orleans and were enrolled in Opening Doors, an education intervention program. Final sample included all female participants, mostly black, with an average age of 25.4 years. | Low-income mothers (N = 386, mean age = 25.4 years, SD = 4.43) were surveyed before, and 1 and 4 years after the storm. | We investigated whether postdisaster religious coping was protective against the long-term negative effects of the disaster, above and beyond per-ceived social support and optimism, two of the more exten-sively studied psychosocial protective factors. | Results from structural regression modeling indicated that negative religious coping was associated with psychological distress, but not PTS. Positive religious coping was associated with PTG. Further analysis indicated signiﬁcant indirect effects of pre- and postdisaster religiousness on postdisaster PTG through positive religious coping. | Impact of Event Scale-Revised (IES-R), Posttraumatic Growth Inventory, Brief-RCOPE, Social Provisions Scale, Life Orientation Test-Revised (LOT-R). | Although relief workers and mental health care providers should take note of the protective role of religion in the lives of survivors, and make efforts to restore faith-based organizations (e.g., to provide a place for and means to worship and practice one’s faith), they should be aware of the potential risk that negative religious coping might pose for long-term symptomatology. | PubMed | Positive and negative religious coping strategies and their relation with posttraumatic stress (PTS), psychological distress, and posttraumatic growth (PTG) were examined in the context of Hurricane Katrina. Positive religious coping was hypothesized to be associated with PTG, whereas negative religious coping was hypothesized to be associated with PTS and psychological distress. Low-income mothers (N = 386, mean age = 25.4 years, SD = 4.43) were surveyed before, and 1 and 4 years after the storm. Results from structural regression modeling indicated that negative religious coping was associated with psychological distress, but not PTS. Positive religious coping was associated with PTG. Further analysis indicated significant indirect effects of pre- and postdisaster religiousness on postdisaster PTG through positive religious coping. Findings underscore the positive and negative effect of religious variables in the context of a natural disaster. |
| **19** | Chan, C. S., et al. (2012). "A prospective study of religiousness and psychological distress among female survivors of Hurricanes Katrina and Rita." Am J Community Psychol 49(1-2): 168-181. | Mental Health | Hurricane Katrina, 2005 | The participants were 386 low-income, predominantly Black, single mothers. | Data were collected before Hurricane Katrina and from 9-19 months after the hurricane. | The purpose of the current study was to examine the protective inﬂuence of religiousness among hurricane survivors. | Psychological distress increased from pre-disaster to post-disaster: the average on the K6 scale increased from 5.56 to 6.69, t(385) = 4.19, p \ .001. The results of the K6 scale indicated that the fraction of the sample with probable mild or moderate mental illness rose from 16.3 to 23.6%, whereas the fraction with probable serious mental illness increased from 6.5 to 14.0%. Results of structural equation modeling indicated that, controlling for level of exposure to the hurricanes, pre-disaster physical health, age, and number of children, pre-disaster religiousness predicted higher levels of post-disaster (1) social resources and (2) optimism and sense of purpose. The latter, but not the former, was associated with better post-disaster psychological outcome. | K6 scale; abbreviated Perceived Stress Scale (PSS4); Social Provisions Scale; Life Orientation Test-Revised (LOT-R), Life Engagement Test | The findings of this study suggest that reli- giousness, specifically its perceived importance and the frequency of religious participation, provides important psychological resources, especially optimism and sense of purpose, that could help to promote more favorable post- disaster outcomes. | PubMed, Web of Science, ProQuest | This prospective study examined the pathways by which religious involvement affected the post-disaster psychological functioning of women who survived Hurricanes Katrina and Rita. The participants were 386 low-income, predominantly Black, single mothers. The women were enrolled in the study before the hurricane, providing a rare opportunity to document changes in mental health from before to after the storm, and to assess the protective role of religious involvement over time. Results of structural equation modeling indicated that, controlling for level of exposure to the hurricanes, pre-disaster physical health, age, and number of children, pre-disaster religiousness predicted higher levels of post-disaster (1) social resources and (2) optimism and sense of purpose. The latter, but not the former, was associated with better post-disaster psychological outcome. Mediation analysis confirmed the mediating role of optimism and sense of purpose. |
| **20** | Davis, T. E., 3rd, et al. (2010). "The psychological impact from hurricane Katrina: effects of displacement and trauma exposure on university students." Behav Ther 41(3): 340-349. | Mental Health | Hurricane Katrina, 2005, USA | 68 students who had been enrolled at Louisiana State University (LSU) prior to the hurricane. All students were enrolled at LSU at the time they participated in an online survey, conducted 3 months following the hurricane. | 68 New Orleans university students participated in an online survey 3 months after Katrina. | The purposes of the current study were to examine the effects of displacement and trauma on college students following a major natural disaster. Specifically, this study examined displaced and nondisplaced undergraduate and graduate students in an effort to determine the impact of Hurricane Katrina on those students most affected. | Results indicated displaced students experienced more trauma exposure and greater subsequent distress, more symptoms of PTSD, and more symptoms of depression. Moreover, traumatic expo-sure and distress from the traumatic exposure were found to fully mediate depressive symptoms and posttraumatic symptoms in the displaced students. | Demographic and Clinical Screener Questionnaire; Depression, Anxiety, and Stress Scales (DASS); Impact of Events Scale-Revised (IES-R); Traumatic Exposure Severity Scale. | Plans should be considered in advance for the possible displacement and housing of students and better avenues for the dissemination of information should be explored. Finally, given the traumatic exposure and subsequent distress in this sample largely focused on the loss of resources, housing damage, and concern for loved ones, these areas should be ones considered for pre- and post- disaster planning, prevention, and intervention at all levels before disasters strike (i.e., by students, families, universities, and governmental agencies alike). | PubMed, Web of Science | The following study examined the reactions of university students to Hurricane Katrina. A group of 68 New Orleans area students who were displaced from their home universities as a result of the hurricane were matched on race, gender, and age to a sample of 68 students who had been enrolled at Louisiana State University (LSU) prior to the hurricane. All students were enrolled at LSU at the time they participated in an online survey, conducted 3 months following the hurricane. The survey included symptom measures of depression, anxiety, stress, posttraumatic stress disorder (PTSD), and other variables. Results indicated displaced students experienced more trauma exposure and greater subsequent distress, more symptoms of PTSD, and more symptoms of depression. Moreover, traumatic exposure and distress from the traumatic exposure were found to fully mediate depressive symptoms and posttraumatic symptoms in the displaced students. |
| **21** | DeSalvo, K. B., et al. (2007). "Symptoms of posttraumatic stress disorder in a New Orleans workforce following Hurricane Katrina." J Urban Health 84(2): 142-152. | Mental Health | Hurricane Katrina, 2005, USA | The sampling frame included all faculty, staff, and administrators who were employed at Tulane University during the week of August 23–27, 2005, and remained employed as of February 1, 2006. | Web-based survey 6 months after Hurricane Katrina of 1,542 employees from the largest employer in New Orleans. | The purpose of this study was to determine rates and predictors of symptoms consistent with a diagnosis of posttraumatic stress disorder (PTSD) in New Orleans residents following Hurricane Katrina. | The prevalence of PTSD symptoms was 19.2%. Predictors of PTSD symptoms in a multivariate-adjusted regression model included female sex, non-black race, knowing someone who died in the storm, not having property insurance, having had a longer evacuation, a much longer work commute compared to before Hurricane Katrina, and currently living in a newly purchased or rented house or in a temporary trailer. Despite universal health coverage and the beneﬁts of an employee assistance program for all employees, only 28.5% of those with PTSD symptoms had talked to a health professional about the events of Hurricane Katrina or issues encountered since the storm. | 17-item PTSD checklist (PCL-17).  | These results suggest an unanswered need for mental health care and counseling for the hundreds of thousands of New Orleans and Mississippi Gulf Coast residents affected by Hurricane Katrina. The strong relationship between female sex, knowing someone who died as a result of the storm, and displacement from pre-Katrina residences and living in temporary trailers with symptoms consistent with a diagnosis of PTSD highlights specific groups in need of immediate targeted interventions, counseling, and resource investment. | PubMed | On August 29, 2005, Hurricane Katrina made landfall resulting in catastrophic damage and flooding to New Orleans, LA, and the Gulf Coast, which may have had significant mental health effects on the population. To determine rates and predictors of symptoms consistent with a diagnosis of posttraumatic stress disorder (PTSD) in New Orleans residents following Hurricane Katrina, we conducted a web-based survey 6 months after Hurricane Katrina made landfall. Participants included 1,542 employees from the largest employer in New Orleans. The prevalence of PTSD symptoms was 19.2%. Predictors of PTSD symptoms in a multivariate-adjusted regression model included female sex, non-black race, knowing someone who died in the storm, not having property insurance, having had a longer evacuation, a much longer work commute compared to before Hurricane Katrina, and currently living in a newly purchased or rented house or in a temporary trailer. Despite universal health coverage and the benefits of an employee assistance program for all employees, only 28.5% of those with PTSD symptoms had talked to a health professional about the events of Hurricane Katrina or issues encountered since the storm. A significant burden of PTSD symptoms was present 6 months following Hurricane Katrina among a large group of adults who had returned to work in New Orleans. Given their key role in the economic redevelopment of the region, there is a tremendous need to identify those in the workforce with symptoms consistent with PTSD and to enhance treatment options. The strong relationship between displacement from one's pre-Katrina residence and symptoms of PTSD suggests a need to focus resource utilization and interventions on individuals living in temporary housing. |
| **22** | Felix, E. D. and W. Afifi (2015). "The Role of Social Support on Mental Health after Multiple Wildfire Disasters." Journal of Community Psychology 43(2): 156-170. | Mental Health | Wildfires, California, 2008-2009 | Most participants lived in either a mandatory evacuation or evacuation warning area in at least one of the ﬁres (63.7%). | Random digit dial methodology was used to recruit participants (N = 402) from residences with a home phone in the three affected cities in California 5-11 months after fires | This study explored the direct or moderating role of social support on MH after multiple wildﬁres, with attention to evacuation status and participant sex. | There were signiﬁcant differences between the evacuated and non-evacuated groups on total ﬁre stress and MH at the time of the ﬁre, with the evacuated group showing greater ﬁre stress and lower MH. Likewise, there was a signiﬁcant sex difference, with females showing greater ﬁre stress and lower MH at the time of the ﬁre. There were no differences between groups on current MH and social support. | Mental Health Inventory (MHI-5); Oslo Social Support Scale | In addition to screening for distress, this study would suggest also considering sex, evacuation status, number of life stressors, and social support in determining risk. Finally, including a measure of MH, and not just psychopathology, can help both to understand the heterogeneity of disaster responses and to guide MH promotion efforts. | Web of Science | Disasters can erode mental health (MH), even if it does not reach mental illness. This study explored the direct or moderating role of social support on MH after multiple wildfires, with attention to evacuation status and participant sex. Participants (N = 402) responded to a random digit dial telephone survey about their disaster exposure, current MH, MH at the time of the fire, social support, and life stressors since the disaster. For the evacuated, social support moderated the relation of fire stress to MH at the time of the fire, with those with high social support having better MH. For current MH, social support had a direct relation to MH, and moderated the influence of life stressors since the disaster for the evacuated and women. For those with a life stressor, current MH was better with high social support, but worse under average or low social support. Social support had a relation to current MH for women, but not men. (C) 2015 Wiley Periodicals, Inc. |
| **23** | Galea, S., et al. (2008). "Financial and social circumstances and the incidence and course of PTSD in Mississippi during the first two years after Hurricane Katrina." J Trauma Stress 21(4): 357-368. | Mental Health | Hurricane Katrina, 2005 | Our sampling frame of interest was adults (18 years of age or older) who were living in the 23 southernmost counties of Mississippi prior to Hurricane Katrina. | Interviews of 810 survivors 18-23 months following Katrina | We conducted a study to document posttraumatic stress dis-order (PTSD), the sentinel psychopathology associated with trau-matic event experiences, after Hurricane Katrina, building on the previous work in three ways. First, we recruited a population-based sample of persons who were living in the areas affected by Hurricane Katrina before the hurricane hit. Second, we assessed PTSD 18–24 months after Hurricane Katrina, allowing us to doc-ument both PTSD onset and progression after this event. Third, we used a comprehensive assessment of PTSD, allowing us to draw inference about dimensions of PTSD that extends previous work. | The prevalence of posttraumatic stress disorder (PTSD) since Hurricane Katrina was 22.5%. The determinants of PTSD were female gender, experience of hurricane-related ﬁnancial loss, postdisaster stressors, low social support, and postdisaster traumatic events. Kaplan-Meier survival curves suggest that exposure to both hurricane-related traumatic events and to ﬁnancial and social stressors inﬂuenced the duration of PTSD symptoms. Ongoing stressors and traumatic events were primarily associated with the risk of PTSD. These stressors and traumatic events were associated with both the incidence and course of PTSD after this disaster. | Crisis Support Scale; Composite International Diagnostic Interview (CIDI); PTSD module of the CIDI. | Postdisaster management plans that mitigate the stressful practical challenges faced by postdisaster survivors may contribute to a reduction in the burden of mental illness after these events. | PubMed, Web of Science | Hurricane Katrina was the most devastating natural disaster to hit the United States in the past 75 years. The authors conducted interviews of 810 persons who were representative of adult residents living in the 23 southernmost counties of Mississippi before Hurricane Katrina. The prevalence of posttraumatic stress disorder (PTSD) since Hurricane Katrina was 22.5%. The determinants of PTSD were female gender, experience of hurricane-related financial loss, postdisaster stressors, low social support, and postdisaster traumatic events. Kaplan-Meier survival curves suggest that exposure to both hurricane-related traumatic events and to financial and social stressors influenced the duration of PTSD symptoms. Postdisaster interventions that aim to improve manipulable stressors after these events may influence the onset and course of PTSD. |
| **24** | Ginexi, E. M., et al. (2000). "Natural disaster and depression: A prospective investigation of reactions to the 1993 Midwest Floods." American Journal of Community Psychology 28(4): 495-518. | Mental Health | Floods (Midwest), 1993 (Iowa) | Sample of Iowa residents randomly selected, including 1541 women and 838 men. | Interviews of 1735 Iowa residents conducted 1 year prior to and 30-90 days after the disaster; half of participants are survivors. | This study sought to examine (a) whether the flood increased depression symptoms and diagnoses among affected persons and (b) what variables, if any, moderated the disaster-psychopathology relationship. | Disaster led to small but true rises in depressive symptoms and diagnoses 60-90 days postflood. The disaster-psychopathology effect was not moderated by predisaster depressive symptoms or diagnostically defined depression; rather, predisaster symptoms and diagnoses uniquely contributed to increases in postdisaster distress. Increases in symptoms as a function of flood impact were slightly greater among respondents with the lowest incomes and among residents living in small rural communities, as opposed to on farms or in cities. | 15-item version of the Center for Epidemioloigc Studies Depression (CES-D) scale; eight-item DIS screening instrument for depression | Perhaps, as Norris and Thompson (1995) suggest, mental health workers in disaster settings might plan and advertise services for distressed, resource-depleted individuals after the emergency period, particularly after national interest in the event has died down. Depressive symptoms appear to be related to the prolonged effects of coping with flood-related losses, and these should be specifically targeted for counseling by mental health professionals many months following a disaster. In addition to individual crisis intervention, response planners may need to focus more on helping disaster-stricken communities build their resources, strengths, and social supports. Our data suggest that this may be especially helpful in small rural communities. | Web of Science | A statewide sample of 1735 Iowa residents, approximately half of whom were victims of the 1993 Midwest Floods, participated in interviews I year prior to, and 30 to 90 days after, the disaster Employing a rigorous methodology including both control-group comparisons and predisaster assessments, we performed a systematic evaluation of the disaster's impact. Overall, the disaster led to true but small rises in depressive symptoms and diagnoses 60-90 days postflood. The disaster-psychopathology effect was not moderated by predisaster depressive symptoms or diagnostically defined depression; rather, predisaster symptoms and diagnoses uniquely contributed to increases in postdisaster distress. However, increases in symptoms as a function of flood impact were slightly greater among respondents with the lowest incomes and among residents living in small rural communities, as apposed to on farms or in cities. Implications for individual- and community-level disaster response are discussed. |
| **25** | Greenough, P. G., et al. (2008). "Burden of disease and health status among Hurricane Katrina-displaced persons in shelters: a population-based cluster sample." Ann Emerg Med 51(4): 426-432. | Mental Health | Hurricane Katrina, 2005 | 499 evacuees residing in American Red Cross shelters in Louisiana | 2-stage 18-cluster sample survey beginning 2 weeks after landfall of Hurricane Katrina. In stage 1, shelters with a population of more than 100 individuals were randomly selected, with probability proportional to size sampling. In stage 2, 30 adult heads of household were randomly chosen within shelters by using a shelter log or a map of the shelter where no log existed. | Anecdotal evidence suggests that the population displaced to shelters from Hurricane Katrina had a signiﬁcant burden of disease, socioeconomic vulnerability, and marginalized health care access. For agencies charged with providing health care to at-risk displaced populations, knowing the prevalence of acute and chronic disease is critical to direct resources and prevent morbidity and mortality. | Two thirds of the sampled population was single, widowed, or divorced; the majority was female (57.6%) and black (76.4%). Socioeconomic indicators of under- and unemployment (52.9%), dependency on beneﬁts or assistance (38.5%), lack of home ownership (66.2%), and lack of health insurance (47.0%) suggested vulnerability. One third lacked a health provider. Among those who arrived at shelters with a chronic disease (55.6%), 48.4% lacked medication. Hypertension, hypercholesterolemia, diabetes, pulmonary disease, and psychiatric illness were the most common chronic conditions. Risk factors for lacking medications included male sex (odds ratio [OR] 1.58; 95% conﬁdence interval [CI] 0.96 to 2.59) and lacking health insurance (OR 2.25; 95% CI 1.21 to 4.20). More than one third (34.5%) arrived at the shelter with symptoms warranting immediate medical intervention, including dehydration (12.0%), dyspnea (11.5%), injury (9.4%), and chest pain (9.7%). | A population-based demographic and health assessment tool was designed to assess the characteristics and health care status of the sheltered population. Key questions elicited information on household sociodemographics, including beneﬁts, home ownership, and employment status; acute symptoms on arrival to the shelter; chronic health problems; unaddressed health-care-related needs; and ability to access health care before evacuation.  | The baseline lack of helath care access and the burden of acute and chronic disease in displaced populations are critical issues to the effective delivery of health care during disaster response efforts. That nearly half our sampled population with known chronic disease was lacking treatment at arrival to shelters represents the kind of vital information that directly affects how disaster health providers prepare for and implement a health response. Stockpiled common medications for chronic disease can be readily available for shelter residents if this requirement is realized early in the response phase. In addition, the prevalence of known psychiatric illness further complicated by a recent stress event will necessitate access to early mental health services either in the shelter or in the local community. A network of skilled local providers can be in place in advance to address the needs of the recently displaced. | PubMed | STUDY OBJECTIVE: Anecdotal evidence suggests that the population displaced to shelters from Hurricane Katrina had a significant burden of disease, socioeconomic vulnerability, and marginalized health care access. For agencies charged with providing health care to at-risk displaced populations, knowing the prevalence of acute and chronic disease is critical to direct resources and prevent morbidity and mortality. METHODS: We performed a 2-stage 18-cluster sample survey of 499 evacuees residing in American Red Cross shelters in Louisiana 2 weeks after landfall of Hurricane Katrina. In stage 1, shelters with a population of more than 100 individuals were randomly selected, with probability proportional to size sampling. In stage 2, 30 adult heads of household were randomly chosen within shelters by using a shelter log or a map of the shelter where no log existed. Survey questions focused on demographics, socioeconomic indicators, acute and chronic burden of disease, and health care access. RESULTS: Two thirds of the sampled population was single, widowed, or divorced; the majority was female (57.6%) and black (76.4%). Socioeconomic indicators of under- and unemployment (52.9%), dependency on benefits or assistance (38.5%), lack of home ownership (66.2%), and lack of health insurance (47.0%) suggested vulnerability. One third lacked a health provider. Among those who arrived at shelters with a chronic disease (55.6%), 48.4% lacked medication. Hypertension, hypercholesterolemia, diabetes, pulmonary disease, and psychiatric illness were the most common chronic conditions. Risk factors for lacking medications included male sex (odds ratio [OR] 1.58; 95% confidence interval [CI] 0.96 to 2.59) and lacking health insurance (OR 2.25; 95% CI 1.21 to 4.20). More than one third (34.5%) arrived at the shelter with symptoms warranting immediate medical intervention, including dehydration (12.0%), dyspnea (11.5%), injury (9.4%), and chest pain (9.7%). Risk factors associated with presenting to shelters with acute symptoms included concurrent chronic disease with medication (OR 2.60; 95% CI 1.98 to 3.43), concurrent disease and lacking medication (OR 2.22; 95% CI 1.36 to 3.63), and lacking health insurance (OR 1.83; 95% CI 1.10 to 3.02). CONCLUSION: A population-based understanding of vulnerability, health access, and chronic and acute disease among the displaced will guide disaster health providers in preparation and response. |
| **26** | Hamama-Raz, Y., et al. (2014). "Gender Differences in Psychological Reactions to Hurricane Sandy Among New York Metropolitan Area Residents." Psychiatr Q. | Mental Health | Hurricane Sandy, NY York, USA | 1,000 participants from affected states identified online. | Online survey of 1,000 people from NY metropolitan area completed four weeks after the storm | The present research provides an evaluation of gender differences regarding posttraumatic stress symptoms, recollections of national disasters and fears of future negative life events. It also aims to explore information seeking and sources of assistance that were utilized during Hurricane Sandy. | Results revealed that recollections of national disaster and fear of future events were found to be signiﬁcantly different among women compared to men. Additionally, women were more inclined toward information seeking through Facebook than men, although no gender differences emerged when examining sources of support. | Impact of Event Scale (IES-R) | Women may experience some different reactions than men, although there are some in common. Professional assistance should consider it in advance when they design an array of therapeutic interventions, as well as formal government assistance, before, through and after the occurrence of a disaster. | PubMed | Hurricane Sandy was a natural disaster of large proportions-a category 3 storm at its peak intensity that struck New York Metropolitan Area on October, 2012. The death and destruction caused by a hurricane can rise numerous of mental health vulnerabilities such as, acute stress disorder, posttraumatic stress disorder, depression, and anxiety. Gender has been identified as one critical variable that can impact vulnerability to adverse effects of trauma, as well as how these reactions are managed. The present research provides an evaluation of gender differences regarding posttraumatic stress symptoms, recollections of national disasters and fears of future negative life events. It also aims to explore information seeking and sources of assistance that were utilized during Hurricane Sandy. An online survey sample of 1,000 people from New York Metropolitan Area completed a battery of self-report questionnaires four weeks after the storm. Results revealed that recollections of national disaster and fear of future events were found to be significantly different among women compared to men. Additionally, women were more inclined toward information seeking through Facebook than men, although no gender differences emerged when examining sources of support. The results indicate that disaster practitioners should tailor gender sensitive interventions. |
| **27** | Jones, R. T., et al. (2003). "Psychosocial correlates of wildfire disaster: Post disaster adult reactions." Fire Technology 39(2): 103-117. | Mental Health | Wildfire, San Diego, 2007 | Forty-six adults, ranging in age from 20 to 69 years old; 30 adults in the victim group and 16 used for comparison. | Participants were recruited via newspaper articles and individual referrals and interviewed one and a half months after the fire. Follow-up was conducted two years post-disaster. | The goal of this study was to compare a group of victims (individuals who were in the area during the fire and lost their homes) to non-victimized subjects (individuals who were in the area during the fire but did not lose their homes). These groups were compared among several psychiatric categories including: posttraumatic stress, depression, and anxiety symptoms. | Victims exhibited greater levels of intrusive and increased arousal symptoms, as measured by the Diagnostic Interview Schedule and Horowitz Impact of Events Scale.Additionally, moderate levels of depression, as measured by the Beck Depression Inventory, and increased state anxiety, as measured by the State-Trait Anxiety Inventory, were reported by the victim group. Adult women report more anxiety and depression than do men. The variable, previous disasters, was not found to be predictive of elevated levels of psychological symptoms. Parents did not fare worse than non-parents. Individuals who were not only present during the fire, but also lost their homes showed elevated levels of psychological symptoms across PTSD, depression, and anxiety categories. Specific to PTSD, intrusive symptoms were not commonly reported. The relatively fewer numbers of avoidance items may be attributed to the volunteer status of participants. | PTSD module of the semi-structured Diagnostic Interview Schedule (DIS); the Horowitz Impact of Events Scale (HIES); the Beck Depression Inventory (BDI); the State-Trait Anxiety Inventory (STAI), and the Fire Questionnaire-Adult Form (FQ-A). | Among several excellent suggestions made by members of the fire community to lessen the probabil- ity, as well as the consequences of wildfire include, preparing families to prevent the consequences of wildfire, enhancing skills amongst firefighters to cope with wildfire, developing cooperative relationships with forestry personnel, and advocating prescribed burning. | Web of Science | Thirty adults' psychosocial maladjustment associated with a wildfire were systematically examined, one and a half months after a major wildfire destroyed 420 homes. The level of psychopathology was determined through the use of standardized assessment instruments, including the Diagnostic Interview Schedule and the Impact of Events Scale. Victims' individual responses were evaluated, relative to a comparison group from the same community, matched for age, gender, socioeconomic status, and fire insurance. Increased levels of posttraumatic stress, depression, and anxiety symptoms were reported significantly more often among victims versus non-victims. Also, females more often reported greater levels of psychological symptoms than males. Parent status and previous disaster experience had no differential impact on victims' reactions. Implications are discussed in light of existing findings in this area of research. |
| **28** | Joseph, N. T., et al. (2014). "Conceptualizing health consequences of Hurricane Katrina from the perspective of socioeconomic status decline." Health Psychol 33(2): 139-146. | Mental Health | Hurricane Katrina, 2005, USA | To be eligible for the study, individuals had to self-identify as African American, be 18 years or older, have been a resident of New Orleans when Hurricane Katrina made landfall, and be a current resident of New Orleans. | 215 African American adults (60% female) living in the Greater New Orleans area at the time of Hurricane Katrina were surveyed 4 years later. | The long-term health impact of acute unemployment and socioeconomic resource deficit has not been shown to be unique from the effects of stable socioeconomic status (SES) and serious life circumstances, such as trauma. This study examined associations between these acute socioeconomic declines and health of hurricane survivors, independent of prehurricane SES and hurricane trauma. | Acute socioeconomic decline following a natural disaster can create long-term health disparities beyond those created by prehurricane stable socioeconomic status level and traumatic hurricane experiences. Acute unemployment was associated with odds of experiencing a cardiometabolic event, major depressive disorder, or chronic pain, whereas acute socioeconomic resource deficit was associated with odds of chronic pain and major depressive disorder. Associations were independent of prehurricane stable socioeconomic status, hurricane trauma, potentially chronic stable socioeconomic status resource deficits, and current unemployment. | Patient Health Questionnaire (PHQ-9); PTSD Checklist-Specific (PCL-S)  | With replication, this study supports public health actions to relieve the burden of acute SES decline among disaster survivors and the general population. | JSTOR | OBJECTIVE: The long-term health impact of acute unemployment and socioeconomic resource deficit has not been shown to be unique from the effects of stable socioeconomic status (SES) and serious life circumstances, such as trauma. This study examined associations between these acute socioeconomic declines and health of hurricane survivors, independent of prehurricane SES and hurricane trauma. METHOD: Participants were 215 African American adults (60% female, mean age = 39 years) living in the Greater New Orleans area at the time of Hurricane Katrina and survey 4 years later. The survey included prehurricane SES measures (i.e., education and neighborhood poverty level); acute unemployment and deficits in access to SES resources following Hurricane Katrina; and posthurricane health events (i.e., cardiometabolic events, chronic pain, posttraumatic stress disorder [PTSD], and major depressive disorder [MDD]). RESULTS: Acute unemployment was associated with odds of experiencing a cardiometabolic event (odds ratio [OR] = 5.65, p < .05), MDD (OR = 2.76, p < .05) and chronic pain (OR = 2.76, p < .05), whereas acute socioeconomic resource deficit was associated with odds of chronic pain (OR = 1.93, p < .001) and MDD (OR = 1.19, p < .05). Associations were independent of prehurricane SES, hurricane trauma, potentially chronic SES resource deficits, and current unemployment. CONCLUSIONS: This study shows that acute socioeconomic decline following a natural disaster can create long-term health disparities beyond those created by prehurricane SES level and traumatic hurricane experiences. Findings suggest that early intervention postdisaster to reduce pervasive socioeconomic disruption may reduce the long-term health impact of disasters. |
| **29** | Kamo, Y., et al. (2011). "Displaced Older Adults' Reactions to and Coping With the Aftermath of Hurricane Katrina." Journal of Family Issues 32(10): 1346-1370. | Mental Health | Hurricane Katrina, 2005, USA | Adults aged 60 or older, who fled New Orleans to Baton Rouge. | Interviews of 122 displaced older adults conducted 6 to 10 months after Katrina, including both open-ended and close-ended questions. | The authors proposed that scholars and practitioners cannot understand how older individuals cope in disaster situations without considering their ecological context. Therefore, the purpose of the study was to assess the pscyhological well-being of adults aged 60 years or older, who fled New Orleans and settled 70 miles away in Baton Rouge. | Older adults who were displaced differed substantially from permanent residents on the composite measure of psychological well-being. Displaced older persons’ psychological well-being was positively related to their age and physical health. Older displaced women coped with displacement better than men. Avoidant coping was negatively related to the older adults’ well-being, whereas spiritual coping showed no effect. The functioning of older persons’ family was positively related to their psychological well-being, whereas dependence on people outside immediate family showed a negative relationship. Income, education, and race were largely unrelated to psychological well-being. | Center for Epidemiologic Studies Depression Scale (CES-D); Brief COPE inventory; Family Functioning Style Scale | Paraprofessionals who work with older adults would benefit from crisis intervention training. In times of crisis, rapid interventions, which include identifying and interpreting the emotions of disaster survivors, helping disas- ter survivors find a sense of control and normalcy in their daily lives, giving them practical information about resources and services, and monitoring their progress, have been shown to be an effective response for reducing the trauma of disaster survivors (Thomas, 2009; Whaley, 2009). To effectively imple- ment this process and avoid exacerbating symptoms associated with PTSD, paraprofessionals and other responders must allow disaster survivors to talk through their situation, respond appropriately without alleviating judgments, and not force individuals to discuss matters that they are not willing or ready to share (Thomas, 2009; Whaley, 2009). | PubMed, ProQuest | Guided by an ecological perspective, the authors examined event, individual, structural/cultural, and family/community factors that shaped the psychological well-being of older adults displaced from New Orleans by Hurricane Katrina. The authors first established the negative effects of displacement on psychological well-being by comparing displaced older adults with permanent Baton Rouge residents. Displaced older persons' psychological well-being was positively related to their age and physical health. Older displaced women coped with displacement better than men. Avoidant coping was negatively related to the older adults' well-being, whereas spiritual coping showed no effect. The functioning of older persons' family was positively related to their psychological well-being, whereas dependence on people outside immediate family showed a negative relationship. Income, education, and race were largely unrelated to psychological well-being. Findings provide implications for future studies regarding the relationship between disaster and psychological well-being and provide practitioners with suggestions for work with older adults displaced by disasters. |
| **30** | Kim, S. C., et al. (2008). "Medium-term post-Katrina health sequelae among New Orleans residents: predictors of poor mental and physical health." J Clin Nurs 17(17): 2335-2342. | Mental Health | Hurricane Katrina, 2005, USA | 222 residents in Gentilly of New Orleans were surveyed. Eligible respondents were: (1) age of 18 years or older; (2) currently living or working in the area; and (3) able to speak and understand English. | 222 residents of Gentilly area of New Orleans completed questionnaires 15 months after Katrina. | To assess the medium-term post-Katrina mental and physical health of New Orleans residents and to determine demographic, social and environmental factors that predict poor mental and physical health. | Approximately half of the New Orleans residents continue to experience poor mental and physical health 15 months after Katrina. Poor mental health was reported by 52% of the respondents. Pre-Katrina depression, post-Katrina depression, poor physical health , feeling unsafe from crime and female gender were signiﬁcant predictor variables of poor mental health. Twenty-four percent of the variance in number of days of poor mental health was explained by the independent variables. Poor physical health was reported by 48% of the respondents. Poor mental health, lack of money to buy food and pre-Katrina arthritis were signiﬁcant predictor variables of poor physical health. Twenty-three percent of the variance in number of days of poor physical health was explained by the independent variables. | Behavioural Risk Factor Surveillance System (BRFSS), MMWR Morbidity and Mortality Weekly Report. | This study's medium-term findings indicate that the Katrina survivors are likely to suffer persistent poor mental and physical health for the foreseeable future unless concerted interventions are instituted. The study results also support focusing post-Katrina efforts to protect the residents from crime, improve mental health services to the depressed and improve food supply to the poor. For the future, longitudinal follow-up studies may help increase the understanding of postdisaster mental and physical health issues and help guide the delivery of sustained aid to disaster survivors. | PubMed | AIMS: To assess the medium-term post-Katrina mental and physical health of New Orleans residents and to determine demographic, social and environmental factors that predict poor mental and physical health. BACKGROUND: Major disasters can have a negative impact on the health of survivors for prolonged periods. Although the initial and short-term impacts of Hurricane Katrina have been well described, the medium-term impacts have not been studied as thoroughly. DESIGN: Cross-sectional survey. METHODS: A convenience sample (n = 222) of residents in Gentilly area of New Orleans completed questionnaires between 16 and 18 December 2006. Multivariate logistic regression and multiple regression models were employed to determine predictors of poor mental and physical health. RESULTS: Poor mental health was reported by 52% of the respondents. Pre-Katrina depression [odds ratio (OR) = 19.1], post-Katrina depression (OR = 7.2), poor physical health (OR = 5.6), feeling unsafe from crime (OR = 4.3) and female gender (OR = 2.6) were significant predictor variables of poor mental health. Twenty-four percent of the variance in number of days of poor mental health was explained by the independent variables (R(2) = 0.24; p < 0.001). Poor physical health was reported by 48% of the respondents. Poor mental health (OR = 3.9), lack of money to buy food (OR = 2.7) and pre-Katrina arthritis (OR = 2.6) were significant predictor variables of poor physical health. Twenty-three percent of the variance in number of days of poor physical health was explained by the independent variables (R(2) = 0.23; p < 0.001). CONCLUSIONS: Approximately half of the New Orleans residents continue to experience poor mental and physical health 15 months after Katrina. The results support focusing post-Katrina efforts to protect residents from crime, improve mental health services to the depressed and improve food supply to the poor. RELEVANCE TO CLINICAL PRACTICE: Identifying predictors of poor mental and physical health may help clinicians and policy makers to focus their efforts in ameliorating the post-disaster health sequelae. |
| **31** | Kissinger, P., et al. (2007). "The effect of the hurricane Katrina disaster on sexual behavior and access to reproductive care for young women in New Orleans." Sex Transm Dis 34(11): 883-886. | Mental Health | Hurricane Katrina, 2005, USA | 164 women 16 to 24 years old who were attending a public family planning clinic in New Orleans, admitted to vaginal douching in the past 6 months. | Women who were attending 2 public family planning clinics and enrolled in a vaginal douching prevention study, were located 5 to 6 months after Katrina and interviewed by telephone to elicit information about sexual behavior and access to reproductive care. | The purpose of this study was to describe changes in sexual behavior and access to reproductive care pre- and postrapid displacement among a cohort of young women receiving family planning services before displacement. | In the 5- to 6-month period after evacuation, the majority of these young women did not have access to family planning ser- vices, despite being originally recruited and followed because of their access to such services. However, there was a significant reduction in risk behavior such as fewer partners, vaginal douch- ing, and self-reported vaginal odor and discharge. This may in part be a result of a change in living situations resulting in less privacy, being separated from their sexual and/or social network, or it could have been a protective measure to prevent pregnancy and STIs for this group of women who had greatly reduced access to care.  | Women were interviewed by telephone and asked questions about their mobility, access to reproductive health care, and sexual risk be- havior since the hurricane. The survey was approved by Tulane Health Sciences Center Institutional Review Board. Twenty-five | This experience can serve as a lesson in preparedness for future disasters. First responders, as well as those who work in the recovery phase of a disaster, should consider the reproductive needs of young impoverished women, including the provision of emergency and regular contraception methods, condoms, and STI services, as well as linking women back into care. | PubMed | OBJECTIVE: The Hurricane Katrina disaster caused rapid displacement of over a million persons in metropolitan New Orleans. The purpose of this study was to describe changes in sexual behavior and access to reproductive care pre- and postrapid displacement among a cohort of young women receiving family planning services before displacement. METHODS: Women 16 to 24 years old, who were attending 2 public family planning clinics and enrolled in a vaginal douching prevention study, were located 5 to 6 months after Katrina and interviewed by telephone to elicit information about sexual behavior and access to reproductive care. RESULTS: Women who were located were interviewed (N = 55). Of these, 96% were black, 62% were employed before the disaster, and the mean age was 22.1 (SD 2.1). In the 5 to 6 months after disaster, 86% lived in 3 or more places, 31% had returned to New Orleans, 17% needed health care but could not access it, 40% had not used birth control, and 2 (4%) experienced an unintended pregnancy as a result of lack of access to care. When compared with baseline, after the hurricane, women were less likely to have attended family planning services, to have used birth control, to have >1 sex partner, to have a vaginal odor or discharge. CONCLUSION: Relief efforts for disasters causing rapid displacement of impoverished women should include reproductive care such as provision of contraception, condoms, and STI services, as well as linking women back into care. |
| **32** | Kulkarni, M. and N. Pole (2008). "Psychiatric distress among Asian and European American survivors of the 1994 Northridge earthquake." Journal of Nervous and Mental Disease 196(8): 597-604. | Mental Health | Earthquake, Northridge, California, USA, 1994 | Respondents were selected to be representative of adults in Los Angeles County using a random digit dialing procedure. 880 respondents who were either Asian American or European American were included. | The authors re-examined a survey of representative survivors of the Northridge, California earthquake. The data for this study were acquired from a public use database from the Survey Research Center at the University of California, Los Angeles. | The purpose of this study was to assess the psychological effects of trauma exposure on Asian Americans. | Asian American participants reported more psychiatric distress and were more than twice as likely to meet caseness criteria on the Brief Symptom Inventory. Ethnic differences remained after accounting for group differences in age, immigrant status, and exposure to the earthquake. Moreover, moderator analyses showed that Asian Americans were not more sensitive to these risk factors but that ethnic differences were explained by the inter-action of ethnicity and having a foreign born parent. Though more work needs to be done to understand the basis of these differences, these ﬁndings challenge model minority myths about Asian Amer-ican people and draw attention to their potential need for greater mental health resources following a natural disaster. | Traumatic Stress Schedule; Brief Symptom Inventory (BSI) | If [the results of this study are] substantiated in future postdisaster studies then this would alert policy-makers to prepare for greater community outreach and mental health ser- vices in Asian Americans communities than previously recog- nized. These issues will only grow in significance if the Asian American population triples over the next half century as it is expected to (U.S. Census Bureau, 2001). | PubMed | Relatively few studies focus on the psychological effects of trauma exposure on Asian Americans. This article presents secondary analyses of a random survey of 118 Asian American and 762 European American survivors of the 1994 Northridge, California earthquake. Asian American participants reported more psychiatric distress and were more than twice as likely to meet caseness criteria on the Brief Symptom Inventory. Ethnic differences remained after accounting for group differences in age, immigrant status, and exposure to the earthquake. Moreover, moderator analyses showed that Asian Americans were not more sensitive to these risk factors but that ethnic differences were explained by the interaction of ethnicity and having a foreign born parent. Though more work needs to be done to understand the basis of these differences, these findings challenge model minority myths about Asian American people and draw attention to their potential need for greater mental health resources following a natural disaster. |
| **33** | Larrance, R., et al. (2007). "Health status among internally displaced persons in Louisiana and Mississippi travel trailer parks." Annals of Emergency Medicine 49(5): 590-601. | Mental Health | Hurricane Katrina, 2005, USA | 336 IDPs were interviewed in either commercial or group travel trailer parks in Louisiana and Mississippi. | Systematic randomized survey of 366 internally displaced persons conducted with structured questionnaires. | We used a global humanitarian aid perspective to assess basic needs, women’s health, mental health, and opinions about the status of internally displaced persons living in travel trailer parks to inform recovery efforts for this population. | Sixteen percent of respondents reported not having enough drinking water, and only 13% of those living in counties and parishes under boil orders were doing so. More than half of households reported an ill adult or child in the previous 2 months. The number of parents reporting problems getting children to school more than tripled after displacement. Intimate partner violence rates postdisplacement were 3 times higher than US baseline rates. Fifty percent of respondents met criteria for major depression. Suicide completion rates after displacement were more than 14 times the baseline rates, and attempt rates were more than 78 times baseline. | Non-validated survey contained 134 questions on respondent demographics, food security, basic needs, domestic and sexual violence, security concerns, reproductive health, mental health, morbidity, mortality, health care assessment, substance use, and opinions about internally displaced person and social status according to previous international assessments. | The findings in this study indicate that humitarian aid has relieved a significant burden of this displaced population’s basic needs, including food, water, and shelter, but that gaps persist. Health services and mental health needs remain largely unaddressed. Humanitarian aid has waned in the months since the last hurricane, leaving the internally displaced population in great need of transitional health and human services programs that remain nonexistent or underfunded. | PubMed | Study objective: We used a global humanitarian aid perspective to assess basic needs, women's health, mental health, and opinions about the status of internally displaced persons living in travel trailer parks to inform recovery efforts for this population. Methods: This was a systematic randomized survey of 366 internally displaced persons, conducted with structured questionnaires. The study setting was commercial and group travel trailer parks in Louisiana and Mississippi. Information was gathered about respondent demographics, food security, basic needs, domestic and sexual violence, security concerns, reproductive health, mental health, morbidity, mortality, health care assessment, substance use, and opinions about internally displaced persons and social status. Results: Respondents were 45.9 (standard deviation 0.8) years of age on average and were mostly white (62%) in Mississippi and mostly black (65%) in Louisiana. Shelter, transportation, security, and lack of financial means were listed as the worst problems since displacement. Sixteen percent of respondents reported not having enough drinking water, and only 13% of those living in counties and parishes under boil orders were doing so. More than half of households reported an ill adult or child in the previous 2 months. The number of parents reporting problems getting children to school more than tripled after displacement. Intimate partner violence rates postdisplacement were 3 times higher than US baseline rates. Fifty percent of respondents met criteria for major depression. Suicide completion rates after displacement were more than 14 times the baseline rates, and attempt rates were more than 78 times baseline. Conclusion: The health burdens identified present a formidable challenge for the health infrastructures in Louisiana and Mississippi without outside assistance. Those planning and leading recovery efforts must understand internally displaced persons in a more global context and tailor programming that follows well-developed international models of rights-based care. |
| **34** | Leon, K. A., et al. (2007). "Perceived stress among a workforce 6 months following hurricane Katrina." Soc Psychiatry Psychiatr Epidemiol 42(12): 1005-1011. | Mental Health | Hurricane Katrina, 2005, USA | The sampling frame for the current study included all faculty, staff, and administrators employed by Tulane University. | A web-based survey that included the four-item Perceived Stress Scale was administered to employees of the largest employer in New Orleans. | The purpose of this study was to determine stress levels among a workforce 6 months after Hurricane Katrina made landfall. | Among 1,542 adult respondents, higher stress scale scores, indicating more stress, were present for women, and for participants with lower income, displaced longer than 3 months, who were more afraid of losing their life during hurricane Katrina and its immediate aftermath, and who knew someone that died during the storm. Additionally, participants who were living in a relative of friend’s house or in a temporary trailer at the time of the survey had higher stress scores compared to their counterparts who had returned to live in their pre-hurricane residence. There was a direct association between higher stress scores and symptoms of post-traumatic stress disorder. Employers and health care providers should be apprised of the need for moni-toring stress and offering counseling opportunities for returning workforces following future large-scale disasters. | Perceived Stress Scale; PTSD Checklist. | Planning for this and future major catastrophes should include resources for helping victims cope with increased perceived stress to mitigate the potential short and long-term health effects. | PubMed | To determine stress levels among a workforce 6 months after hurricane Katrina made landfall, a web-based survey that included the four-item Perceived Stress Scale was administered to employees of the largest employer in New Orleans. An overall Perceived Stress Scale score was obtained by pooling responses for the four items. Among 1,542 adult respondents, 24.1% stated they felt that they were "fairly often" or "very often" unable to control the important things in their life and 21.4% considered that their difficulties were "fairly often" or "very often" piling up so high that they could not overcome them. Also, 6.1% reported that they "almost never" or "never" felt confident about their ability to handle their personal problems and 15.2% indicated that things were "almost never" or "never" going their way. The overall mean Perceived Stress Scale score was 6.3 (standard deviation = 3.1; range = 0-16). Higher stress scale scores, indicating more stress, were present for women, and for participants with lower income, displaced longer than 3 months, who were more afraid of losing their life during hurricane Katrina and its immediate aftermath, and who knew someone that died during the storm. Additionally, participants who were living in a relative of friend's house or in a temporary trailer at the time of the survey had higher stress scores compared to their counterparts who had returned to live in their pre-hurricane residence. There was a direct association between higher stress scores and symptoms of post-traumatic stress disorder. Employers and health care providers should be apprised of the need for monitoring stress and offering counseling opportunities for returning workforces following future large-scale disasters. |
| **35** | Lowe, S. R. and J. E. Rhodes (2013). "Trajectories of psychological distress among low-income, female survivors of Hurricane Katrina." Am J Orthopsychiatry 83(2 Pt 3): 398-412. | Mental Health | Hurricane Katrina, 2005, USA | 386 low-income women who survived Hurricane Katrina. To be eligible for the study, students had to be between the ages of 18 and 34, be parents of at least one dependent child under 19, have a household income under 200% of the federal poverty level, and have a high school diploma or equivalent. | Data were collected in the year prior to the hurricane as well as approximately 1 and 3 years thereafter. Time 1 was before the hurricane; Time 2 was 7-16 months after the hurricane, and Time 3 was approximately three years after the hurricane. | The purpose of this study was to investigate trajectories of psychological distress among low-income, primarily unmarried and African American women who survived Hurricane Katrina | Over half of the participants ﬁt into a trajectory consistent with resilience; that is, they maintained low levels of psychological distress over the course of the study, but experienced an elevation in symptoms at the ﬁrst predi-saster time point followed by a return to predisaster levels. The other trajectories reﬂected a range of psychological responses to disasters and indicated that predisaster functioning had a major inﬂuence on postdisaster psychological outcomes. Degree of exposure to hurricane-related stressors, experiences of human and pet bereavement, per-ceived social support, and socioeconomic status were signiﬁcant predictors of trajectory group membership. Implications for research and policy are discussed. | K6 scale of nonspecific psychological distress; Impact of Event Scale-Revised (IES-R); Hurricane-Related Stressors Scale; Social Provisions Scale. | The psychological trajectories found in our analyses also have implications for postdisaster clinical interventions. Slight elevations in psychological symptoms should be normalized, and communities exposed to disaster should be informed that these symptoms often occur in mild forms (e.g., with low lev- els of frequency and intensity) and, in most instances, dissi- pate over time. At the same time, psychoeducational interventions should provide information on what individuals can do in the event of more intense, persistent psychological symptoms. Additionally, the findings of the study demonstrate that not all survivors are equally vulnerable to postdisaster psycholgical distress and suggest factors predictive of adverse reactions (e.g., higher predisaster psychological symptoms, lower social support). Screening for these factors could help practitioners identify survivors that might be in particular need of mental health services to whom they could deploy empirically supported treatments, address grief responses to human and pet bereavement, and bolster social support networks. Connecting survivors with mental health services also would provide opportunities to address more long-standing stressors and symptom histories that rendered survivors vulnerable to postdisaster psychological distress. | PubMed, PsycINFO, Web of Science | The purpose of this study was to investigate trajectories of psychological distress among low-income, primarily unmarried and African American women who survived Hurricane Katrina (N = 386). Data were collected in the year prior to the hurricane as well as approximately 1 and 3 years thereafter. Using Latent Class Growth Analysis (LCGA), we detected 6 distinct trajectory groups. Over half of the participants fit into a trajectory consistent with resilience; that is, they maintained low levels of psychological distress over the course of the study, but experienced an elevation in symptoms at the first predisaster time point followed by a return to predisaster levels. The other trajectories reflected a range of psychological responses to disasters and indicated that predisaster functioning had a major influence on postdisaster psychological outcomes. Degree of exposure to hurricane-related stressors, experiences of human and pet bereavement, perceived social support, and socioeconomic status were significant predictors of trajectory group membership. Implications for research and policy are discussed. |
| **36** | Mills, M. A., et al. (2007). "Trauma and stress response among Hurricane Katrina evacuees." Am J Public Health 97 Suppl 1: S116-123. | Mental Health | Hurricane Katrina, 2005, USA | Data were collected over 7 days at the Austin Convention Center, which housed ap-proximately 1600 Hurricane Katrina evacuees. Participants were 132 adult evacuees(56% men and 44% women; mean age,43 y; range, 20–80 y) from New Orleans and surrounding parishes. | On days 12 to 19 after Katrina, evacuees at a major emergency shel-ter completed surveys that assessed demographics, Katrina-specific experiences, and ASD symptomatology. | Hurricane Katrina’s impact on public health has been significant and multifaceted, with trauma-related psychological sequelae likely to result in a sizable burden of disease. Data were collected that assessed acute stress dis-order (ASD) prevalence and factors related to ASD symptomatology among shel-tered evacuees. | Sixty-two percent of the sample met ASD threshold criterion. Projections based on the predictive power of ASD to posttraumatic stress disorder suggest that 38% to 49% of the sample will meet PTSD criteria 2 years post-disaster. Female gender, positive psychiatric history, injury, increased life-threat perception, and decreased sense of personal control were significantly related to ASD. Black race was associated with greater symptom severity. Katrina-related trauma and its psychological sequelae will remain a significant public health issue for years to come. The identification of several vulnerability factors related to ASD and PTSD provides a brief sketch of those at greatest risk. | Traumatic Events Questionnaire; ASDS (a self-report inventory consisting of 19 items based on criteria for ASD as defined by DSMM-IV). | Our findings indicate that a large per- centage of evacuees are likely suffering from PTSD, with few resources (e.g., financial, health care, or social) on which to draw. Indi- viduals with limited financial resources or ex- isting health problems are some of society’s most vulnerable in a disaster situation, both in terms of initial exposure and ability to recoup. Thus, the management of complex disaster situations like Hurricane Katrina poses a significant challenge to the existing United States health care system and to mental health care professionals in particular. Accessibility of existing services to displaced people, who are often economically disadvantaged and of a different ethnic or socioeconomic background than service providers, is also a concern. | PubMed | OBJECTIVES: Hurricane Katrina's impact on public health has been significant and multifaceted, with trauma-related psychological sequelae likely to result in a sizable burden of disease. Data were collected that assessed acute stress disorder (ASD) prevalence and factors related to ASD symptomatology among sheltered evacuees. METHODS: On days 12 to 19 after Katrina, evacuees at a major emergency shelter completed surveys that assessed demographics, Katrina-specific experiences, and ASD symptomatology. RESULTS: Sixty-two percent of the sample met ASD threshold criterion. Projections based on the predictive power of ASD to posttraumatic stress disorder (PTSD) suggest that 38% to 49% of the sample will meet PTSD criteria 2 years post-disaster. Female gender (odds ratio [OR] = 4.08), positive psychiatric history (OR=5.84), injury (OR=2.75), increased life-threat perception (OR=1.37), and decreased sense of personal control (OR=1.56) were significantly related to ASD. Black race was associated with greater symptom severity (B=7.85, SE[B]=3.50). CONCLUSIONS: Katrina-related trauma and its psychological sequelae will remain a significant public health issue for years to come. The identification of several vulnerability factors related to ASD and PTSD provides a brief sketch of those at greatest risk. |
| **37** | Polusny, M. A., et al. (2008). "PTSD symptom clusters associated with physical health and health care utilization in rural primary care patients exposed to natural disaster." J Trauma Stress 21(1): 75-82. | Mental Health | Tornadoes, rural Minnesota, 1998 | 300 patients with appointments at rural health clinics were invited to participate. 126 submitted surveys; 105 had been clinic patients prior to the disaster. | One-hundred ﬁve patients completed self-report measures assessing disaster exposure, PTSD symptoms, and self-reported physical health complaints. Objective rates of health care utilization were gathered by a review of medical records. | This study investigated the inﬂuence of exposure to a tornado disaster and disaster-related posttraumatic stress disorder (PTSD) symptomatology on physical health complaints and primary health care utilization among rural medical patients. | Tornado disaster exposure and generalized psychological distress were associated with physical health complaints one year following the disaster. After controlling for age, gender, and levels of predisaster health care utilization, PTSD Cluster C (avoidance) symptoms were associated with increased rates of postdisaster health care utilization. About 14% of primary care patients met probable PTSD di-agnosis one year following the disaster, which is consistent with estimates based on national epidemiological studies (Ozer et al., 2003). Yet, the scale of this disaster was far from the devasta-tion and disruption that can be experienced by hurricane affected communities. Thus, the ﬁndings reported here likely underesti-mate the impact of natural disaster exposure and related PTSD symptoms on a community’s health and health care systems. | Posttraumatic Stress Diagnostic Scale (PDS); Hurricane-Related Traumatic Experiences Questionnaire; Pennebaker Inventory of Limbic Linguidness; Global Severity Index (GSI) | NA | PubMed, Web of Science | This study investigated the influence of exposure to a tornado disaster and disaster-related posttraumatic stress disorder (PTSD) symptomatology on physical health complaints and primary health care utilization among rural medical patients. One-hundred five patients completed self-report measures assessing disaster exposure, PTSD symptoms, and self-reported physical health complaints. Objective rates of health care utilization were gathered by a review of medical records. Tornado disaster exposure and generalized psychological distress were associated with physical health complaints one year following the disaster. After controlling for age, gender, and levels of predisaster health care utilization, PTSD Cluster C (avoidance) symptoms were associated with increased rates of postdisaster health care utilization. Implications of these findings for interventions within the medical system are discussed. |
| **38** | Rateau, M. R. (2009). "Differences in emotional well-being of hurricane survivors: a secondary analysis of the ABC News Hurricane Katrina Anniversary Poll." Arch Psychiatr Nurs 23(3): 269-271. | Mental Health | Hurricane Katrina, 2005, USA | 501 participants selected from FEMA-designated counties through random-digit dialing. | A secondary analysis was performed using the ABC News Hurricane Katrina Anniversary Poll conducted in August 2006. Data were obtained through the Inter-University Consortium for Political and Social Research in June 2008. | The question posed for the analysis was the following: What is the association of long-term emotional well-being with gender, residential property damage, and trust in fellow man for survivors of Hurricane Katrina? | Following ana-lyses, a significantly higher percentage of women (44%) and those who experi-enced residential damage (66.7%) reported long-term negative impact on emotional well-being. Overall, 70.3% of Katrina survivors reported a strength-ening in fellow man following the disaster. These results may serve as begin-ning evidence for appropriate identification and implementation of mental health support for those most in need following disaster. | NA | This finding may hold important practice implications when considering continued research with those at greatest risk for mental health complications after disaster. For instance, from a research perspective, it could be helpful to pursue understanding of the postdisaster challenges faced by women, how their role responsibilities influence their experi- ence, and approaches they use to address their challenges. A researcher could gather the stories of women who had faced a natural disaster to shed light on the everyday experience of getting on with their lives. Stories such as these could provide meaningful guidance for mental health nurses practicing with women who have lived through natural disaster. | Web of Science | Literature suggests that survivors of catastrophic loss may suffer long-term emotional damage. This paper presents a secondary data analysis from the ABC News Hurricane Katrina Poll conducted in August, 2006. Following analyses, a significantly higher percentage of women (44%) and those who experienced residential damage (66.7%) reported long-term negative impact on emotional well-being. Overall, 70.3% of Katrina survivors reported a strengthening in fellow man following the disaster. These results may serve as beginning evidence for appropriate identification and implementation of mental health support for those most in need following disaster. |
| **39** | Reuther, E. T., et al. (2010). "Fear of anxiety as a partial mediator of the relation between trauma severity and PTSD symptoms." J Trauma Stress 23(4): 519-522. | Mental Health | Hurricane Katrina, 2005, USA | Participants were 609 students (166 men, 443 women) attending Louisiana State University (LSU) who scored at least one on the occurrence scale of the Traumatic Exposure Severity Scale (TESS; Elal & Slade, 2005). They ranged in age from 18 to 58 years | Participants completed measures online 3 months following Hurricane Katrina and received class credit for participation. | The current exploratory study examines the relationship between fear of anxiety and symptoms of PTSD in a sample of adults exposed to Hurricane Katrina. | Both the ACQ and BSQ correlated with the IES-R total score. This supports past literature ﬁnding anxiety sensitivity served as a moderator of PTSD symptoms. Additionally, the ACQ was found to signiﬁcantly, but partially mediate the relationship between trauma severity and symptoms of traumatic stress. Further, post hoc analyses revealed this was only true for men. The BSQ was uncorrelated with exposure and was not examined as a mediator. The differential ﬁndings for men and women highlight the importance of gender. Results from the current study suggest that it may be more important to examine fear of anxiety in men with symptoms of traumatic stress, or that fear of anxiety is a more enduring trait in women less likely to change following traumatic exposure. | Agoraphobic Cognitions Questionnaire; Body Sensations Questionnaire; IES-R; TESS | NA | PubMed | Fear of anxiety has previously been found to be a predictor of overall symptoms of posttraumatic stress disorder (PTSD). The current exploratory study examines the relationship between fear of anxiety and symptoms of PTSD in a sample of adults exposed to Hurricane Katrina. Fear of anxiety was found to partially mediate the relationship between the severity of trauma and the severity of PTSD. Further, this mediation was found to operate differently by gender, with the mediation holding true for men but not for women. For both men and women, fear of anxiety was positively correlated with PTSD symptoms. |
| **40** | Rhodes, J., et al. (2010). "The Impact of Hurricane Katrina on the Mental and Physical Health of Low-Income Parents in New Orleans." American Journal of Orthopsychiatry 80(2): 237-247. | Mental Health | Hurricane Katrina, 2005, USA | Participants were initially part of a study of low-income par-ents who had enrolled in two community colleges in the city of New Orleans in 2004–2005. | Participants initially completed a pre-hurricane survey; T2 was between 8-16 months after the hurricane. The analyses in this study draw on a sample of 392 respondents who reported living in an area affected by Hurricane Katrina at the time the hurricane struck. | The purpose of this study was to document changes in mental and physical health among 392 low-income parents exposed to Hurricane Katrina and to explore how hurricane-related stressors and loss relate to post-Katrina well-being. | The prevalence of probable serious mental illness doubled, and nearly half of the respondents exhibited probable post-traumatic stress disorder. Higher levels of hurricane-related loss and stressors were gener-ally associated with worse health outcomes, controlling for baseline sociodemographic and health measures. Higher baseline resources predicted fewer hurricane-associated stres-sors, but the consequences of stressors and loss were similar regardless of baseline resources. Adverse health consequences of Hurricane Katrina persisted for a year or more and were most severe for those experiencing the most stressors and loss. Long-term health and mental health services are needed for low-income disaster survivors, especially those who experience disaster-related stressors and loss. | Social Provisions Scale; K6 scale; Impact of Events Scale-Revised (IES-R); Perceived Stress Scale | The findings also have important implictations for the planning of postdisaster psychological care services. Efforts to iden- tify and provide timely, evidence-based services to those with preexisting psychological vulnerabilities could potentially prevent or attenuate adverse postdisaster outcomes and the pro- gression into more SMI (Schoenbaum et al., 2009). The persis- tence of negative mental and physical health symptoms 1 year after the disaster indicates that long-term treatment is needed. Regrettably, however, many of those in need of care in the months after the hurricane do not receive it (Chan, Lowe, Zwie- bach, & Rhodes, 2008; Schoenbaum et al., 2009; Wang et al., 2008). This is not unusual—even under normal circumstances the majority of low-income adults in the United States with health problems and SMI do not receive adequate care (Wang, Demler, & Kessler, 2002; Young, Klap, Sherbourne, & Wells, 2001). Nonetheless, because survivors of disasters are known to have a higher risk of health and mental health problems, there is compelling reason to target services to members of this group. Most of the participants were single mothers, suggesting that timely intervention could offset problems in younger generations as well. Furthermore, since many survivors of disasters come into contact with service agencies after a disaster, there may be unique opportunities to offer or refer to treatment. The high rates of health and mental health problems among low-income survivors of Hurricane Katrina, coupled with the low rates of care, indicate that this was not successfully accomplished in the case of this natural disaster. | PsycINFO | The purpose of this study was to document changes in mental and physical health among 392 low-income parents exposed to Hurricane Katrina and to explore how hurricane-related stressors and loss relate to post-Katrina well-being. The prevalence of probable serious mental illness doubled, and nearly half of the respondents exhibited probable posttraumatic stress disorder. Higher levels of hurricane-related loss and stressors were generally associated with worse health outcomes, controlling for baseline sociodemographic and health measures. Higher baseline resources predicted fewer hurricane-associated stressors, but the consequences of stressors and loss were similar regardless of baseline resources. Adverse health consequences of Hurricane Katrina persisted for a year or more and were most severe for those experiencing the most stressors and loss. Long-term health and mental health services are needed for low-income disaster survivors, especially those who experience disaster-related stressors and loss. |
| **41** | Richter, R. and T. Flowers (2008). "Gendered dimensions of disaster care: critical distinctions in female psychosocial needs, triage, pain assessment, and care." Am J Disaster Med 3(1): 31-37. | Mental Health | Hurricane Katrina, 2005, USA | 50 adult female Hurricane Katrina evacuees | 50 adult female evacuees were survyed at various times and locations in New Orleans and Houston, and included onsite surveys during community-led events, such as Katrina evacuee food drives, aid distribution events, and job fairs. All surveys were anonymous. | The purpose of this research is to highlight and identify some key gender-specifc issues in disasters including teh following: socially constructed gender risk factors; gender and posttraumatic stress; women and pain (presentaiton and sensitivity); and female-spectific support and services, especially in the areas of breastfeeding and gynecology. | The research showed that the rates of PTSD in women can be double the rates found among men. The clinical manifestations of PTSD can differ greatly among men adn women, with women manifesting symptoms of numbing, avoidance, and higher comorbid mood and anxiety disorders. Postdisaster access to on-site or readily avialable mental health resources could serve to relieve problems such as persistent panic, and optimally, prevent the progression to PTSD. | NA | In the area of women's support and services, proper obstetric care (to reduce inffant and maternal morbidity and mortality) should include: the stockpiling of specific provisions, "pregnancy status" triage, the inclusion of prenatal nutritional and breastfeeding advocacy, as well as other services. Postdisaster gynecological services and supplies should include not only feminine hygiene products, but also provisions for rape, STDs, and contraception. | ProQuest | OBJECTIVE: This research highlights and identifies some critical distinctions in female disaster care including the following: socially constructed gender risk factors; gender and posttraumatic stress; women and pain (presentation and sensitivity); and postdisaster support and services, especially in the arenas of obstetrics and gynecology (breastfeeding, menstruation, contraception, rape, and sexually transmitted disease [STDs]). The research also includes a brief, anonymous survey of 50 adult female Hurricane Katrina evacuees which queried women on their usage of postdisaster health and counseling services. CONCLUSIONS: Our literature review shows a pattern of gender differentiation in all areas of the disaster process-in preparedness, response, physical and psychological impact, risk perception and exposure, recovery, and reconstruction. Some research highlights include: six disaster gender risk factors affecting vulnerability, impact and exposure; heightened risks and differing clinical manifestations of posttraumatic stress disorder and pain presentation; "pregnancy status" triage screening; as well gender-sensitive supplies and services (private breastfeeding and obstetrics and gynecology (OB/GYN) exam areas, birth control, feminine hygiene, and prenatal nutrition advocacy). The results of the small voluntary survey are presented that supports the contention that many gender-sensitive services were needed in posthurricane Katrina clinical settings, but were inadequate or nonexistent. This research not only identified issues, but emphasized feasible interventions, which could significantly reduce pain, suffering, and long-term postdisaster care costs. The research's most important conclusions are the current dearth of gender-disaggregated disaster data, as well as the tremendous need for disaster healthcare planners and providers to take a more cognizant and proactive approach to gender-specific care in triage, psychosocial needs assessment, medical care, and advocacy. |
| **42** | Sareen, H. and K. I. Shoaf (2000). "Impact of the 1994 Northridge earthquake on the utilization and difficulties associated with prescription medications and health aids." Prehosp Disaster Med 15(4): 173-180. | Mental Health | Earthquake, Northridge, California, USA, 1994 | 1,212 participants | 1,212 households completed a 48-minute telephone interview. | The goal of this study was to assess the impact of the 1994 Northridge earthquake on those households that reported usage of medications and/or health aids. | Of the 1,212 completed interviews, 21% of the households had a family member taking a prescription medication or a medication requiring refrigeration. Associated factors included gender, race, age, household income, level of education, presence of children, and the intensity of the earthquake. Only 3% of those that reported medication usage noted problems associated with the use of these medications.  | Questionnaire originally desgined for use following both the Whittier Narrows and the Loma Prieta earthquakes and again for the Northridge earthquake. | The reminders to include extra medications and health aids in disaster kits is a logical preparedness step. Health aids, especially eyeglasses and hearing aids, need to be "disaster-proofed" along with other essential disaster supplies. | PubMed | INTRODUCTION: The medical impacts of disasters have focused on the injuries, illnesses, and deaths related to the disaster. Little has been written about the impact of disasters on persons who use prescription medications or those medications that require refrigeration, or those who require health aids. The objective of this study was an evaluation of the level of utilization of prescription medications and medications that require refrigeration as well as the use of health aids by the population affected by the disaster. METHODS: Following the Northridge earthquake of 1994, a survey of Los Angeles County households was conducted to assess the impact of the earthquake. A total of 1247 households completed the 48 minute telephone interview. As part of the interview, 10 questions assessed the utilization of medications and medical aids by household members and the effects that the earthquake had on those medications and devices. Chi-square, analysis of variance (ANOVA), and logistic regression analysis were applied. RESULTS: Of the 1,212 completed interviews, 21% of the households had a family member taking a prescription medication or a medication requiring refrigeration. Associated factors included gender, race, age, household income, level of education, presence of children, and the intensity of the earthquake (by the Modified Mercalli Index). Only 3% of those that reported medication usage noted problems associated with the use of these medications. Thirty-nine percent of the respondents indicated that someone in the household used a health aid (e.g., eyeglasses, hearing aid, etc.). Usage was related to gender, race, age, household income, level of education, presence of children, and the intensity of the shaking associated with the earthquake. Of these, 6.5% reported difficulty with these aids, usually related to loss or breakage. CONCLUSIONS: Although the proportions of the population requiring prescription or refrigerated medications and/or for those using health aids in Los Angeles seemingly are small, this translates to 630,000 households in which someone requires medications and 1.2 million households with a requirement for health aids. Thus, there are a huge number of persons at risk for serious medical problems related to these medications and devices that could produce profound medical problems during a disaster. However, during and following a moderate earthquake, it does not seem that the consequences will be great. |
| **43** | Sastry, N. and J. Gregory (2013). "The effect of Hurricane Katrina on the prevalence of health impairments and disability among adults in New Orleans: differences by age, race, and sex." Soc Sci Med 80: 121-129. | Mental Health | Hurricane Katrina, 2005, USA | Adults who lived in New Orleans prior to the hurricane | Our analysis used data from the American Community Survey to compare disability rates between the pre-Katrina population of New Orleans with the same population in the year after Katrina (individuals were interviewed for the study even if they relocated away from the city). The comparability between the pre-and post-Katrina samples was enhanced by using propensity weights. | We examined the effects of Hurricane Katrina on disability-related measures of health among adults from New Orleans, U.S.A., in the year after the hurricane, with a focus on differences by age, race, and sex. | We found a signiﬁcant decline in health for the adult population from New Orleans in the year after the hurricane, with the disability rate rising from 20.6% to 24.6%. This increase in disability reﬂected a large rise in mental impairments and, to a lesser extent, in physical impairments. These increases were, in turn, concentrated among young and middle-aged black females. Stress-related factors likely explain why young and middle-aged black women experienced worse health outcomes, including living in dwellings and communities that suffered the most damage from the hurricane, household breakup, adverse outcomes for their children, and higher susceptibility. | NA | Policies to mitigate the negative effects of disasters should also consider their effects on functioning which provides a measure of well-being beyond disability or health status alone. | PubMed | We examined the effects of Hurricane Katrina on disability-related measures of health among adults from New Orleans, U.S.A., in the year after the hurricane, with a focus on differences by age, race, and sex. Our analysis used data from the American Community Survey to compare disability rates between the pre-Katrina population of New Orleans with the same population in the year after Katrina (individuals were interviewed for the study even if they relocated away from the city). The comparability between the pre- and post-Katrina samples was enhanced by using propensity weights. We found a significant decline in health for the adult population from New Orleans in the year after the hurricane, with the disability rate rising from 20.6% to 24.6%. This increase in disability reflected a large rise in mental impairments and, to a lesser extent, in physical impairments. These increases were, in turn, concentrated among young and middle-aged black females. Stress-related factors likely explain why young and middle-aged black women experienced worse health outcomes, including living in dwellings and communities that suffered the most damage from the hurricane, household breakup, adverse outcomes for their children, and higher susceptibility. |
| **44** | Scheeringa, M. S. and C. H. Zeanah (2008). "Reconsideration of harm's way: onsets and comorbidity patterns of disorders in preschool children and their caregivers following Hurricane Katrina." J Clin Child Adolesc Psychol 37(3): 508-518. | Mental Health | Hurricane Katrina, 2005, USA | Participants were found via newspaper advertisements and included parents/caregivers with children ages 3-6 | After being screened for inclusion and exclusion criteria over the phone, caregivers arrived alone at the lab for the first session in which the DEQ and PAPA were collected. Caregivers came with their children for the second session, typically 1 week apart, in which the DIS was collected. Participants were monetarily com-pensated for their participation. Eleven participants did not return for the second visit, so data were available on the DIS for only 59 caregivers. | This study examined posttraumatic stress disorder (PTSD) and comorbid disorders in 70 preschool children (ages 3–6) and their caregivers following Hurricane Katrina. | Caregivers’ rate of PTSD was 35.6%, of which 47.6% was new post-Katrina. No children and only 2 caregivers developed new non-PTSD disorders in the absence of new PTSD symptoms. Differences by race and gender were largely nonsignificant. Children’s new PTSD symptoms corre-lated more strongly to caregivers with new symptoms compared to caregivers with old or no symptoms. | Disaster experiences questionnaire (DES); preschool age psychiatric assessment (PAPA); Diagnostic Interview Schedule (DIS) | For clinical practice, these findings add to the growing body of empirical literature that young children can be severely impacted by life-threatening events (Ghosh- Ippen et al., 2004; Laor et al., 1997; Levendosky et al., 2002; Ohmi et al., 2002; Scheeringa et al., 2003). Further, when new disorders occur, PTSD must be con- sidered as part of the differential diagnosis. Opposi- tional defiant behaviors and separation anxiety in particular show high rates of concurrent onset with PTSD. Symptomatic parents and children need treat- ment following disasters, and fortunately, effective evidence-based treatments are increasingly available (Cohen, Deblinger, Mannarino, & Steer, 2004). Parents may be invaluable aids in helping their children recover and may benefit from the treatments they receive. | PubMed | This study examined posttraumatic stress disorder (PTSD) and comorbid disorders in 70 preschool children (ages 3-6) and their caregivers following Hurricane Katrina. Children's rate of PTSD was 50.0% using age-modified criteria. The rate of PTSD was 62.5% for those who stayed in the city and 43.5% in those who evacuated. Of those with PTSD, 88.6% had at least one comorbid disorder, with oppositional defiant disorder and separation anxiety disorder being most common. Caregivers' rate of PTSD was 35.6%, of which 47.6% was new post-Katrina. No children and only 2 caregivers developed new non-PTSD disorders in the absence of new PTSD symptoms. Differences by race and gender were largely nonsignificant. Children's new PTSD symptoms correlated more strongly to caregivers with new symptoms compared to caregivers with old or no symptoms. |
| **45** | Tally, S., et al. (2013). "The impact of the San Diego wildfires on a general mental health population residing in evacuation areas." Adm Policy Ment Health 40(5): 348-354. | Mental Health | Wildfire, San Diego, 2007 | All clients who received services at the San Diego County Mental Health Services location during the study period. | San Diego County Mental Health system clients completed a questionnaire after the October 2007 wildﬁres. | This study examined the impact of the 2007 San Diego wildﬁres on the effects of increased stress, and the ability to access services, information, and medications, for consumers of public mental health services. | As compared to those not in an evacuation area, those residing in an evacuation area reported signiﬁcantly more impact of the ﬁres. Clients who evacuated were most affected, followed by those in an evacuation area who did not evacuate. Evacuation strongly impacted client-reported emotional effects of the ﬁre, confusion about whether to evacuate, and ability to obtain medications. Gender and clinical diagnosis interacted with evacuation status for some ﬁre impact variables. Loss of control and disruption of routine are discussed as possibly related factors. | NA | The present findings may help focus additional resources towards current clients where most needed. For example, during wildfires, those in evacuation areas (not just those who evacuate) may need additional information regarding the fires and how it affects services to current clients. Furthermore, communication with clients within the evacuation area regarding where to go for additional ser- vices and alternative ways to obtain their medications may be desirable. Finally, it is worth mention here that a large number of clients reported little or no impact from the fires, and indeed demonstrated a great deal of resiliency in a difficult situation. | PubMed, Web of Science | San Diego County Mental Health system clients completed a questionnaire after the October 2007 wildfires. As compared to those not in an evacuation area, those residing in an evacuation area reported significantly more impact of the fires. Clients who evacuated were most affected, followed by those in an evacuation area who did not evacuate. Evacuation strongly impacted client-reported emotional effects of the fire, confusion about whether to evacuate, and ability to obtain medications. Gender and clinical diagnosis interacted with evacuation status for some fire impact variables. Loss of control and disruption of routine are discussed as possibly related factors. |
| **46** | Timpson, S., et al. (2009). "A Psychosocial Comparison of New Orleans and Houston Crack Smokers in the Wake of Hurricane Katrina." Substance Use & Misuse 44(12): 1695-1710. | Mental Health | Hurricane Katrina, 2005, USA | 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. Participants in the Houston study were recruited using targeted sampling and participant referral. New Orleans participants were recruited by an outreach worker. In order to further explore psychological distress and living conditions, a subsample of participants from each site completed in-depth interviews. | 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 Hur-ricane Katrina to African American drug users resident in Houston. | 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. 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. | Self-Rating Form (SRF); Peer Outreach Questionnaire (POQ) | NA | PubMed | 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. |
| **47** | Ursano, R. J., et al. (2014). "Posttraumatic Stress Disorder and Community Collective Efficacy following the 2004 Florida Hurricanes: e88467." PLoS ONE 9(2). | Mental Health | Hurricanes, Florida, USA, 2004 | Public health workers in Florida during the 2004 hurricane season | Anonymous questionnaires were distributed electronically to all Florida Department of Health personnel nine months after the 2004 hurricane season. The collected data were used to assess posttraumatic stress disorder and collective efficacy measured at both the individual and zip code levels. | There is a paucity of research investigating the relationship of community-level characteristics such as collective efficacy and posttraumatic stress following disasters. We examine the association of collective efficacy with probable posttraumatic stress disorder and posttraumatic stress disorder symptom severity in Florida public health workers (n = 2249) exposed to the 2004 hurricane season using a multilevel approach. | Data indicate that higher community-level and individual-level collective efficacy were associated with a lower likelihood of having posttraumatic stress disorder, even after adjusting for individual sociodemographic variables, community socioeconomic characteristic variables, individual injury/damage, and community storm damage. Higher levels of community-level collective efficacy and individual-level collective efficacy were also associated with significantly lower posttraumatic stress disorder symptom severity, after adjusting for the same covariates. Lower rates of posttraumatic stress disorder are associated with communities with higher collective efficacy. Programs enhancing community collective efficacy may be an important part of prevention practices and possibly lead to a reduction in the rate of posttraumatic stress disorder post-disaster. | PTSD Checklist | Programs that enhance neighborhood cohesion by introducing new funds, building new residences, and altering behaviors could have significant implications for prevention practices and possibily lower rates of PTSD post-disaster. Moreover, intervening at the community level is often cost-effective and practical, and may reach individuals who may not seek or have available individual interventions post-disaster. | PubMed, PubMed | There is a paucity of research investigating the relationship of community-level characteristics such as collective efficacy and posttraumatic stress following disasters. We examine the association of collective efficacy with probable posttraumatic stress disorder and posttraumatic stress disorder symptom severity in Florida public health workers (n = 2249) exposed to the 2004 hurricane season using a multilevel approach. Anonymous questionnaires were distributed electronically to all Florida Department of Health personnel nine months after the 2004 hurricane season. The collected data were used to assess posttraumatic stress disorder and collective efficacy measured at both the individual and zip code levels. The majority of participants were female (80.42%), and ages ranged from 20 to 78 years (median = 49 years); 73.91% were European American, 13.25% were African American, and 8.65% were Hispanic. Using multi-level analysis, our data indicate that higher community-level and individual-level collective efficacy were associated with a lower likelihood of having posttraumatic stress disorder (OR = 0.93, CI = 0.88-0.98; and OR = 0.94, CI = 0.92-0.97, respectively), even after adjusting for individual sociodemographic variables, community socioeconomic characteristic variables, individual injury/damage, and community storm damage. Higher levels of community-level collective efficacy and individual-level collective efficacy were also associated with significantly lower posttraumatic stress disorder symptom severity (b = -0.22, p<0.01; and b = -0.17, p<0.01, respectively), after adjusting for the same covariates. Lower rates of posttraumatic stress disorder are associated with communities with higher collective efficacy. Programs enhancing community collective efficacy may be an important part of prevention practices and possibly lead to a reduction in the rate of posttraumatic stress disorder post-disaster. |
| **48** | Wu, Z. H., et al. (2015). "Sleep Quality Among Low-Income Young Women in Southeast Texas Predicts Changes in Perceived Stress Through Hurricane Ike." Sleep. | Mental Health | Hurricane Ike, Texas, 2008 | 296 women aged 18-31 who experienced Hurricane Ike, Sept 2008, recruited from community-based family planning clinics in southeast Texas | Cohen’s Perceived Stress Scale (PSS) was administered every two months from 6 months before to 12 months after Hurricane Ike. Sleep quality was assessed one month after Hurricane Ike using the Pittsburg Sleep Quality Index (PSQI). Hurricane Ike stressors (e.g., property damage, subjective stressors) and pre-Ike lifetime major life events and emotional health (e.g., emotional dysregulation, self-control) were also assessed. | To document the time course of perceived stress among women through the period of a natural disaster, to determine the effect of sleep quality on this time course, and to identify risk factors that predict higher levels of perceived stress. | Over the entire period of 18 months (6 months before and 12 months after the hurricane), perceived stress was significantly higher among poor sleepers compared to good sleepers, and only good sleepers showed a significant decrease in perceived stress after Hurricane Ike. In addition, a higher level of perceived stress was positively associated with greater Ike damage among poor sleepers, whereas this correlation was not observed among good sleepers. In the final multivariate longitudinal model, Ike-related subjective stressors as well as baseline major life events and emotional dysregulation among poor sleepers predicted higher levels of perceived stress over time; among good sleepers, additional factors such as lower levels of self-control and having a history of a psychiatric disorder also predicted higher levels of perceived stress. Sleep quality after Hurricane Ike, an intense natural disaster producing substantial damage, impacted changes in perceived stress over time. Our findings suggest the possibility that providing victims of disasters with effective interventions to improve sleep quality could help to reduce their perceived stress over time. | Cohen's Perceived Stress Scale (PSS); Pittsburg Sleep Quality Index (PSQI) | Conventional, traditional preparedness measures may be sufficient for low-income women with good sleep habits and without any pre-disaster emotional needs. However, additional targeted inventions could be useful for good sleepers who may have experienced more major life events and those with greater emotional needs (i.e., higher levels of emotional dysregulation and lower levels of self-control). For poor sleepers, a systematic, comprehensive preparedness and intervention is recommended. | PubMed | Study Objectives: To document the time course of perceived stress among women through the period of a natural disaster, to determine the effect of sleep quality on this time course, and to identify risk factors that predict higher levels of perceived stress. Design: Longitudinal study from 2006-2012. Setting: Community-based family planning clinics in southeast Texas. Participants: There were 296 women aged 18-31 y who experienced Hurricane Ike, September 2008. Measurements and Results: Cohen Perceived Stress Scale (PSS) was administered every 2 mo from 6 mo before to 12 mo after Hurricane Ike. Sleep quality was assessed 1 mo after Hurricane Ike using the Pittsburg Sleep Quality Index (PSQI). Good sleep was defined as a PSQI summary score < 5, and poor sleep as a score >/= 5. Hurricane Ike stressors (e.g., property damage, subjective stressors) and pre-Ike lifetime major life events and emotional health (e.g., emotional dysregulation, self-control) were also assessed. Results: Over the entire period of 18 mo (6 mo before and 12 mo after the hurricane), perceived stress was significantly higher among poor sleepers compared to good sleepers, and only good sleepers showed a significant decrease in perceived stress after Hurricane Ike. In addition, a higher level of perceived stress was positively associated with greater Ike damage among poor sleepers, whereas this correlation was not observed among good sleepers. In the final multivariate longitudinal model, Ike-related subjective stressors as well as baseline major life events and emotional dysregulation among poor sleepers predicted higher levels of perceived stress over time; among good sleepers, additional factors such as lower levels of self-control and having a history of a psychiatric disorder also predicted higher levels of perceived stress. Conclusions: Sleep quality after Hurricane Ike, an intense natural disaster producing substantial damage, impacted changes in perceived stress over time. Our findings suggest the possibility that providing victims of disasters with effective interventions to improve sleep quality could help to reduce their perceived stress over time. |
| **49** | Anastario, M. P., et al. (2008). "Using mental health indicators to identify postdisaster gender-based violence among women displaced by Hurricane Katrina." J Womens Health (Larchmt) 17(9): 1437-1444. | IPV/GBV | Hurricane Katrina, 2005 | 195 female IDPs living in travel trailer parks in Louisiana and Mississippi 248 days after Hurricane Katrina. Women were on average 43.3 years old. 46.9% of participants had experienced GBV at some point during their lifetime, and 17.5% experienced PDGBV.  | Post-event, cross-sectional design | The purpose of this study was to develop a method to identify women with increased odds for postdisaster exposure to GBV (PDGBV) that did not employ direct verbal screening. Alternative methods of GBV detection that can safely and accurately identify and determine the prevelance of women who have recently experienced GBV can also facilitate timely introduction to healthcare services. | On average, women who experienced PDGBV had been in the trailer park 11.5 days less, were less often Caucasian (41.2% in PDGBV, 46.8% in non-PDGBV), and were less often divorced (26.5%) compared with those who did not experienced PDGBV (31.3%). Women with PDGBV experience were more often married (35.3%) than those without PDGBV (18.8%). Women who experienced PDGBV were on average 5 years younger than those without, and further analysis revealed that the relationship between age and risk for exposure was not linear, such that the likelihood of PDGBV increased with age from 18 to its peak risk at age 36 and declined with age from 37 to 85. Four symptoms reliably differentiated women with PDGBV exposure from women without PDGBV. The adjusted odds of exposure were 2.5 times more likely among women with sleeping problems in comparison to those without sleeping problems. In addition, the odds of exposure were 3.8 times higher among women with appetite dysregulation, 2.3 times higher among women with low self-esteem, and 2.7 times higher among women with suicidal ideation in comparison to those without suicidal ideation. We also found that severity of depression, defined by total number of depressive symptoms on the PHQ-9, was associated with PDGBV exposure, such that the odds of PDGBV increased 1.2 with each depressive symptom. | Quantitative survey containing 134 closed-ended questions and health needs assessment items; Patient Health Questionnaire-9 (PHQ-9); GBV questions derived from standardized violence screening items that have been used in previously published data. | The use of computerized screening in waiting rooms and the use of self-completed questionnaires . . . have shown efficacy as methods that are preferred by patients and that increase the likelihood of self-reported abuse. Clinical identification has implications for referrals to social workers as well as relocation and security strategies employed by government organizations to help address violence. This model may be useful for identifying women with exposure to PDGBV in settings where direct questioning may not be safe and reliable. | PubMed | OBJECTIVE: Assessment of gender-based violence (GBV) among internally displaced persons (IDPs) is at best difficult. In complex humanitarian disasters, GBV inquiry can sometimes be dangerous and may lead to underestimation of the true prevalence. We developed a method of identifying women who have greater odds of having been exposed to postdisaster GBV (PDGBV) using mental health indicators. METHODS: We systematically random sampled IDPs living in travel trailer parks in Louisiana and Mississippi and interviewed respondents using a health needs assessment survey during an 8-week period in April and May 2006. Women (n = 194) were screened for GBV and symptoms of depression. RESULTS: Women were on average 43.3 years old (range 18-85). Of the nine symptoms assessed with the Patient Health Questionnaire-9 (PHQ-9), four were associated with PDGBV. Among women with sleep dysregulation, the odds of PDGBV were 2.5 times higher in comparison with women without sleep dysregulation (95% CI 1.2-5.1). Appetite dysregulation increased the odds by 3.8 (95% CI 1.4-10.3), low self-esteem increased the odds by 2.3 (95% CI 1.2-4.6), and suicidal ideation increased the odds by 2.7 (95% CI 1.1-6.7). The internal consistency reliability of this symptom cluster was higher among women with PDGBV. Women screening positive on all four symptoms were 2.7 times more likely to have experienced PDGBV (95% CI 1.03-7.1). CONCLUSIONS: Several but not all symptoms of depression indicated exposure to PDGBV. Sleeping dysregulation, appetite dysregulation, low self-esteem, and suicidal ideation should be considered secondary indicators useful for identifying the prevalence of PDGBV exposure among female IDPs. This model may be useful for identifying women with exposure to PDGBV in settings where direct questioning may not be safe and reliable. |
| **50** | Anastario, M., et al. (2009). "Increased gender-based violence among women internally displaced in Mississippi 2 years post-Hurricane Katrina." Disaster Med Public Health Prep 3(1): 18-26. | IPV/GBV | Hurricane Katrina, 2005 | A total of 420 female IDPs living in travel trailer parks in Mississippi were surveyed, with 106 being surveyed in 2006 and --> *data are not consistent for number of women surveyed.* | Post-event, cross-sectional design | Assessments of change in the rates of GBV following a disaster are lacking, leaving stakeholders in disaster planning with inadequate information on the nature of GBV relative to baseline conditions, especially within a protracted phase of displacement following a disaster. We assessed rates of GBV over time in a population of female IDPs displaced by the 2005 Gulf Coast hurricane season. | Female IDPs are particularly vulnerable to GBV in the acute phase following a disaster and displacement and to IPV in the protracted phase of displacement. We documented increases in the incidence of GBV in the IDP population in Mississippi displaced by the 2005 Gulf Coast hurricane season. The increase in GBV incidence was more specifically driven by a rise in first-time occurrences of IPV among IDPs. Further research is needed to understand the specific time-variant factors that increase the incidence of IPV following a disaster, as well as the nature of underreporting of both lifetime and recent rates in IDP settings. Women who reported post-disaster IPV in our sample were 10.4 times more likely to report symptoms of MDD than women without postdisaster IPV. The overall prevalence of GBV increased 3.2%, from 4.4% in 2006 to 7.6% in 2007, and lifetime GBV increased 8.4%, from 35.3% in 2006 to 43.7% in 2007. The prevalence of recent SV decreased 2.9%, from 3.9% in 2006 to 1.0% in 2007. Lifetime SV decreased 8.5%, from 33.5% in 2006 to 25.0% in 2007. The prevalence of recent IPV increased by 5.1%, from 2.5% in 2006 to 7.6% in 2007. Lifetime IPV significnatly increased by 21.9%, from 12.5% in 2006 to 34.4% in 2007. | The same questionnaire was administered in both 2006 and 2007. The surveys included questions on respondent demographics, intimate partner and sexual violence, and mental health; PHQ-9; suicidal ideation and suicidal attempts questions were also given. | By testing for changes in the rates of GBV among women in the years following Hurricanes Katrina and Rita, stakeholders in disaster planning and health services will be better able to respond to the protection and subsequent health issues that arise among women exposed to GBV in displaced settings. Women are particularly vulnerable to the sequelae of abuse, most often experiencing severe and life-threatening injuries. The provision of services that can address the scale of such health consequences in tandem with social services and programming to mitigate IPV in accord with the United Nations Security Council's Resolution 1325 and World Health Organization guidelines is warranted in this internally displaced population.  | PubMed | OBJECTIVES: Although different types of gender-based violence (GBV) have been documented in disaster-affected populations, no studies have documented a quantitative increase in rates of GBV among populations living in protracted displacement after a disaster. We aimed to assess the change in rates of GBV after Hurricane Katrina among internally displaced people (IDPs) living in travel trailer parks in Mississippi. METHODS: The study design included successive cross-sectional randomized surveys, conducted in 2006 and 2007, among IDPs in Mississippi using a structured questionnaire. We sampled 50 travel trailer parks in 9 counties in Mississippi in 2006, and 69 parks in 20 counties in 2007. A total of 420 female respondents comprised the final sample. We measured respondent demographics, forms of GBV including sexual and physical violence further subtyped by perpetrator, suicidal ideation, suicide attempt, and Patient Health Questionnaire-9-assessed depression. RESULTS: Respondents had a mean age of 42.7 years. The crude rate of new cases of GBV among women increased from 4.6/100,000 per day to 16.3/100,000 per day in 2006, and remained elevated at 10.1/100,000 per day in 2007. The increase was primarily driven by the increase in intimate partner violence. GBV experience was significantly associated with increased risk for poor mental health outcomes. CONCLUSIONS: Overall, the rate of GBV, particularly intimate partner violence, increased within the year following Hurricane Katrina and did not return to baseline during the protracted phase of displacement. Disaster planning efforts should incorporate plans to decrease the incidence of GBV following a disaster, and to ensure adequate services to people with postdisaster GBV experience. |
| **51** | Fagen, J. L., et al. (2011). "Why not the University of New Orleans? Social disorganization and sexual violence among internally displaced women of Hurricane Katrina." J Community Health 36(5): 721-727. | IPV/GBV | Hurricane Katrina, 2005 | 237 women participated in the pre-Katrina study and 215 women participated in the post-Katrina study. The participants were undergraduate students at the University of New Orleans (UNO) in the spring semester prior to Hurricane Katrina (2005) and the spring semester following Hurricane Katrina (2006).  | Pre- and post-event, cross-sectional design | The aim of this investigation is to explore the connection between violence against women and natural disasters. We assessed the prevalence of sexual violence experienced by women students at the University of New Orleans (UNO) before and after Hurricane Katrina. We hypothesized that, due to the displacement that occurred following disaster, there would be a higher prevalence of sexual aggression against women after Katrina than there was before Katrina. | Our analyses yielded no significant differences in any of the measures of sexaul violence toward women (nine CORE survey items) pre to post Katrina, so our hypothesis was not supported. Potential reasons for the lack of increased violence may include the fact that the college campus is physically located from the city's urban center, and generally has very low crime rates; that students at the university feel a strong sense of community, which promotes a sense of social cohesion; and that, following Katrina, students spent more time in the workforce, which may have given some a sense of empowerment and/or combatted the attenuation of social values. | CORE Alcohol and Drug survey, Long Form | Those in charge of disaster preparedness planning may consider schools and universities, or even work environments, as buffers to social attenuation (and thus sexual violence against women) after disaster strikes. These structures may be used to strengthen whole networks of social ties, and not just among university students. According to Walsh, "strong connections, with trust that others will be there for them when needed, counteract feelings of insecurity, helplessness, and meaninglessness." We would add that primary prevention at the community level is also essential. This cna include pre-disaster education for the public, training for school, business, and civic employees, and empowerment programs for women who might be vulnerable in a post-disaster environment. Finally, it is recommended that every disaster preparedness team should (1) be trained in gender-based violence, (2) seek mutual agreements between disaster aid organizations and domestic violence shelters, (3) incorporate domestic violence services in their plans, (4) secure domestic violence counselors in case of a disaster, and (5) produce public service announcements (PSAs) about domestic violence. | PubMed, Web of Science, ProQuest, PsycINFO | Researchers have reported that natural disasters lead to an increase in sexual violence against women and this is echoed by the current situation in Haiti. This is a social pattern throughout the world during periods of war, as well as natural disasters such as tsunamis, famine, and hurricanes. This article examines the prevalence of sexual violence experienced by women students at the University of New Orleans (UNO) before and after Hurricane Katrina using the CORE Alcohol and Drug Survey. Two hundred and thirty seven women participated in the pre-Katrina study and 215 women participated in the post-Katrina study. We hypothesized that, due to the trauma of this disaster, there would be a higher prevalence of sexual aggression against women after Katrina than there was before Katrina. Our analyses yielded no significant differences in any of the measures of sexual violence toward women (nine CORE survey items) pre to post Katrina, so our hypothesis was not supported. We suggest that social organization and cultural attenuation--often indicators of sexual assault in FEMA Greenfield communities--were mitigated by social cohesion found on the UNO campus post-Katrina. |
| **52** | Frasier, P. Y., et al. (2004). "Disaster down East: using participatory action research to explore intimate partner violence in eastern North Carolina." Health Educ Behav 31(4 Suppl): 69s-84s. | IPV/GBV | Hurricane Floyd, North Carolina, 1999 | 785 English-speaking women were recruited from 12 blue-collar workplaces with at least 50 permanent employees in four eastern North Carolina counties directly affected by Hurricane Floyd. 58% of the women were between age 30 and 49, and 88% had completed high school or beyond. | Post-event, cross-sectional design | We investigated the relationship of IPV to the flood experience - manifested as perceived stress, post-traumatic stress disorder (PTSD) symptoms, psychological distress and somatic complaints, and perceived health - along with selected coping behaviors (smoking, alcohol abuse, and eating to cope with stress) that were previously found to be related to IPV victims and to chronic disease. | Baseline data indicated that IPV rates were higher among blue-collar women in eastern North Carolina than national population-based rates suggest. IPV victims reported higher levels of perceived stress, psychological distress, somatic complaints, and post-traumatic stress disorder (PTSD) symptoms than did nonvictimized coworkers. As for teh relationship of the flood to IPV, no significant increase in IPV incidence occurred after a flood. Regardless of their flood experience, however, IPV victims consistently reported greater stress, PTSD symptoms, and somatic and psychological problems. Moreover, IPV victims may be at higher risk for stress-mediated chronic illnesses and for using negative coping behaviors. | Demographic information; adaptation of Cohen's Perceived Stress Scale; adaptation of Abuse Assessment Screen | Women who seek services potentially may have more problems. Risk factors for chronic disease must be examined carefully so that ever-abused women, regardless of flood impact, can be offered targeted interventions that focus on stress management and positive coping skills and, when appropriate, individual counseling. | PubMed | In the aftermath of Hurricane Floyd in 1999, a Community Advisory Committee requested assistance from its university partners (University of North Carolina) to address stress and increased risk for intimate partner violence (IPV). Collected from 12 study work sites, baseline data indicated that IPV rates were higher among blue-collar women in eastern North Carolina than national population-based rates suggest. IPV victims reported higher levels of perceived stress, psychological distress, somatic complaints, and post-traumatic stress disorder (PTSD) symptoms than did nonvictimized coworkers. As for the relationship of the flood to IPV, no significant increase in IPV incidence occurred after the flood. Regardless of their flood experience, however, IPV victims consistently reported greater stress, PTSD symptoms, and somatic and psychological problems. Moreover, IPV victims may be at higher risk for stress-mediated chronic illnesses and for using negative coping behaviors. This study uses an established trusting relationship between researchers and community members to explore community needs and inform intervention design. |
| **53** | Fredman, S. J., et al. (2010). "Associations among disaster exposure, intimate relationship adjustment, and PTSD symptoms: can disaster exposure enhance a relationship?" J Trauma Stress 23(4): 446-451. | Mental Health | Floods (Midwest), 1993 (St. Louis, Missouri) | 205 women who were either married or cohabiting at the time of the flood and for at least 6 months before the flood. | Post-event, cross-sectional design (9 months after disaster) | The goal of this study was to test the fit of a model accounting for the associations among [variables including dimensions of disaster exposure, intimate relationship variables, and PTSD symptoms in the wake of natural disaster] in a sample of women exposed to severe flooding. We specifically hypothesized that the treat/harm and loss characteristics of disaster exposure were related, but separate, constructs in predicting lower levels of relationship adjustment. Lower relationship adjustment was in turn predicted to be associated with higher levels of PTSD symptoms. | Bivariately, threat/harm and loss exposure dimensions were related to each other but differentially related to relationship adjustment and PTSD symptoms. Results from structural equation modeling revealed a positive and significant direct association between threat/harm and PTSD symptoms. Conversely, loss was not significantly associated with PTSD symptoms, but was positively and significantly associated with relationship adjustment. Relationship adjustment was negatively and significantly related to PTSD symptoms. These data suggest that some aspects of disaster exposure can have a mobilizing and positive effect on intimate relationships. In turn, positive intimate relationships may buffer individuals against PTSD symptoms. | Diagnostic Interview Schedule Disaster Supplement; Dyadic Adjustment Scale; National Women's Study PTSD module | The current study underscores previous calls for prevention strategies focused on marshalling people’s own naturally occurring resources, including intimate relationships, to buffer against negative psychological sequelae of natural disaster exposure (Monnier & Hobfoll, 2000). | PubMed | This study examined associations among disaster characteristics, relationship adjustment, and posttraumatic stress disorder (PTSD) symptomatology 9 months postdisaster in 205 women exposed to extensive flooding. Bivariately, threat/harm and loss exposure dimensions were related to each other but differentially related to relationship adjustment and PTSD symptoms. Results from structural equation modeling revealed a positive and significant direct association between threat/harm and PTSD symptoms. Conversely, loss was not significantly associated with PTSD symptoms, but was positively and significantly associated with relationship adjustment. Relationship adjustment was negatively and significantly related to PTSD symptoms. These data suggest that some aspects of disaster exposure can have a mobilizing and positive effect on intimate relationships. In turn, positive intimate relationships may buffer individuals against PTSD symptoms. |
| **54** | Harville, E. W., et al. (2011). "Experience of Hurricane Katrina and reported intimate partner violence." J Interpers Violence 26(4): 833-845. | IPV/GBV | Hurricane Katrina, 2005 | Participants were recruited from Tulane Lakeside Hospital, Metairie, LA, and Women’s Hospital, Baton Rouge, LA, after being admitted for childbirth between the dates of March 2006 and May 2007. A total of 123 women completed the surveys.  | Post-event, cross-sectional design (6 months postpartum, with births between March 2006 and May 2007) | In this study we examine the relationship between experience of Hurricane Katrina and reported relationship aggression and violence in a cohort of postpartum women. We hypothesized that women who had a more severe experience of Hurricane Katrina would be at increased risk for reported conflict and IPV. Intimate partner violence (IPV) has been associated with stress, but few studies have examined the effect of natural disaster on IPV. In this study, the authors examine the relationship between experience of Hurricane Katrina and reported relationship aggression and violence in a cohort of 123 postpartum women.  | Most participants report that they and their partners had explained themselves to each other, showed each other respect, and also insulted, swore, or shouted during conflicts with each other. A few participants report physical violence, sexual force, or destroying property, though in each case at least 5% endorse that it had happened at least once in the last 6 months. Another few report that they and their partners had carried out these actions. Experiencing damage due to the storm is associated with increased likelihood of most conflict tactics. Strong RRs are seen for the relationship between damage due to the storm and aggression or violence, especially being insulted, sworn, shouted, or yelled at (adjusted relative risk [aRR] = 1.23, 95% CI = 1.02-1.48); pushed, shoved, or slapped (aRR = 5.28, 95% CI = 1.93-14.45); or being punched, kicked, or beat up (aRR = 8.25, 95% CI = 1.68-40.47). Results suggest that certain experiences of the hurricane are associated with an increased likelihood of violent methods of conflict resolution. Relief and medical workers may need to be aware of the possibility of increased IPV after disaster. | Conflict Tactics Scales-2-short form; Edinburgh Postnatal Depression Scale; PTSD checklist; Daily Stress Inventory | Future studies should investigate the effects of disaster on IPV in a larger population, exploring more in-depth the partner, the relationship, the postpartum experience, as well as history of IPV in the relationship. However, on the basis of this study, relief and medical workers may need to be aware of the possibility of increased IPV after disaster and be available for treatment and referral when necessary. | PubMed, Web of Science | Intimate partner violence (IPV) has been associated with stress, but few studies have examined the effect of natural disaster on IPV. In this study, the authors examine the relationship between experience of Hurricane Katrina and reported relationship aggression and violence in a cohort of 123 postpartum women. Hurricane experience is measured using a series of questions about damage, injury, and danger during the storm; IPV was measured using the Conflict Tactics Scale (CTS-2). Multiple log-poisson regression was used to calculate relative risks (RRs), adjusted for potential confounders. Most participants report that they and their partners had explained themselves to each other, showed each other respect, and also insulted, swore, or shouted during conflicts with each other. A few participants report physical violence, sexual force, or destroying property, though in each case at least 5% endorse that it had happened at least once in the last 6 months. Another few report that they and their partners had carried out these actions. Experiencing damage due to the storm is associated with increased likelihood of most conflict tactics. Strong RRs are seen for the relationship between damage due to the storm and aggression or violence, especially being insulted, sworn, shouted, or yelled at (adjusted relative risk [aRR] = 1.23, 95% CI = 1.02-1.48); pushed, shoved, or slapped (aRR = 5.28, 95% CI = 1.93-14.45); or being punched, kicked, or beat up (aRR = 8.25, 95% CI = 1.68-40.47). Results suggest that certain experiences of the hurricane are associated with an increased likelihood of violent methods of conflict resolution. Relief and medical workers may need to be aware of the possibility of increased IPV after disaster. |
| **55** | Lowe, S. R., et al. (2012). "Changes in Marital and Partner Relationships in the Aftermath of Hurricane Katrina: An Analysis With Low-Income Women." Psychol Women Q 36(3): 286-300. | IPV/GBV | Hurricane Katrina, 2005 | 40 low-income, mostly African American women who survived Hurricane Katrina. Participants were initially part of a study of low-income parents in community colleges in New Orleans, examining the impact of scholarship funding on a variety of outcomes. In the current study, we included data from qualitative face-to-face interviews with a subsample of participants and conducted after Hurricane Katrina between April 2006 and March 2007. A total of 57 posthurricane interviews were completed, 40 of which included discussions of changes in their intimate relation-ships. | Qualitative face-to-face interviews conducted with a subsample of participants between April 2006 and March 2007. | The purpose of this study was to investigate the impact of Hurricane Katrina on the marital and partner relationships of 40 low-income women, the majority of whom identified as African American (n=35, 87.5%), through qualitative analyses of in-depth interviews. | As a framework for understanding the processes underlying participants’ negative and positive outcomes, the authors drew on the family stress model. Consistent with the model, participants reported that the hurricane led to external stressors, including unemployment and prolonged separations, and that these stressors, in turn, undermined both individual functioning and relational processes (e.g., communication and support). Conversely, participants reporting positive changes experienced new employment opportunities, a greater sense of perspective, and high levels of effective communication and support in their relationships. Relationship strain was attributed to nega-tive hurricane-related changes, including disruptions in employment and prolonged separations. These processes, in turn, undermined both individual functioning and relation-ship processes and precipitated relationship termination for some of the participants. Nearly half the participants reported that their relationships had become stronger since the hurricane, often despite initial strain. The same variables and processes that undermine relation-ships can also account for instances of relationship growth. That is, just as economic strain (through its negative impact on individual and relational functioning) yields negative rela-tionship outcomes, economic improvements can have posi-tive effects on individual functioning and relationship processes, thereby promoting positive relationship outcomes.  | None | Based on the findings, policies that reduce the economic strain of low-income families in the aftermath of disasters and empirically supported, culturally sensitive, clinical interventions for individuals and couples are recommended. This study highlights the need for policies that address the struc-tural roots of individual and relational dysfunction in the aftermath of disasters. Extending unemployment benefits, enforcing antidiscrimination laws, expanding access to diverse training and educational opportunities, providing child care, and increasing earnings and work supports could help promote postdisaster adjustment among low-income women and their families  | PsycINFO, Web of Science, Web of Science | Little is known about the impact of natural disasters on marital and partner relationships. In this study, the authors aimed to fill this gap by investigating the changes in such relationships in a sample of 40 low-income, mostly African American women who survived Hurricane Katrina. Through in-depth interviews, participants described how the hurricane affected their intimate relationships. The authors found that, although many participants reported negative changes in their relationships, others reported that their relationships grew stronger, often despite initial strain. As a framework for understanding the processes underlying participants' negative and positive outcomes, the authors drew on the family stress model. Consistent with the model, participants reported that the hurricane led to external stressors, including unemployment and prolonged separations, and that these stressors, in turn, undermined both individual functioning and relational processes (e.g., communication and support). Conversely, participants reporting positive changes experienced new employment opportunities, a greater sense of perspective, and high levels of effective communication and support in their relationships. Based on the findings, policies that reduce the economic strain of low-income families in the aftermath of disasters and empirically supported, culturally sensitive, clinical interventions for individuals and couples are recommended. |
| **56** | Picardo, C. W., et al. (2010). "Physically and sexually violent experiences of reproductive-aged women displaced by Hurricane Katrina." J La State Med Soc 162(5): 282, 284-288, 290. | IPV/GBV | Hurricane Katrina, 2005 | Sixty-six English-speaking women aged 18-49 years residing in Louisiana Federal Emergency Management Agency (FEMA) housing were screened for physical and sexual abuse seven to nine months after Hurricane Katrina, using modified 30x7 cluster sampling methodology. | 20-question descriptive survey (open-ended, qualitative) conducted 7-9 months after Hurricane Katrina | The purpose of this descriptive study was to sample women of reproductive age displaced by Hurricane Katrina and to learn about their experiences with physical and sexual violence the year leading up to Hurricane Katrina and seven to nine months after displacement. | Almost 25% of the women screened in this study reported being hit or verbally threatened since Hurricane Katrina. Most of these cases of abuse were with new partners or an increase in or new violence with the same partner they had leading up to Hurricane Katrina. Twenty-three percent of women reported being hit or verbally threatened since Hurricane Katrina. Abuse had increased for 33% and decreased for 13% of women. Twenty percent of abused women were with a new partner, while 13% reported new abuse with the same partner. Four women reported sexual abuse since Hurricane Katrina. Compared to before the storm, the frequency of sexual abuse was the same for two women, and one reported new abuse with the same partner. | None | The results of this study support the need for further evaluation of and sensitivity to the issue of potentially escalating violence against women after natural disasters. They also support the need for services to be available following disasters. Information about safe havens for women who are abused should be available as food, clothing, and other necessities are distributed after disasters. Relief workers should be aware that abuse exists and where to refer women who require additional support. Although during the aftermath of disasters organizing such efforts may prove most challenging, any services available may prove crucial to women experiencing physical and sexual abuse. Future studies may also be designed to tease out the effects of various FEMA park characteristics which might increase or decrease IPV with the goal of organizing parks in the future which would reduce conflicts and create a sense of community.  | PubMed | PURPOSE: Measure the frequency of physical and sexual abuse in a sample of reproductive aged women displaced by Hurricane Katrina, and compare those experiences to the year before Hurricane Katrina. METHODS: Sixty-six English-speaking women aged 18-49 years residing in Louisiana Federal Emergency Management Agency (FEMA) housing were screened for physical and sexual abuse seven to nine months after Hurricane Katrina, using modified 30x7 cluster sampling methodology. FINDINGS: Twenty-three percent (95% confidence interval [CI], 14, 34%) of women reported being hit or verbally threatened since Hurricane Katrina. Abuse had increased for 33% (95% CI, 13, 63%) and decreased for 13% (95% CI, 4, 37%) of women. Twenty percent (95% CI, 6, 51%) of abused women were with a new partner, while 13% (95% CI, 4, 39%) reported new abuse with the same partner. Four women reported sexual abuse since Hurricane Katrina. Compared to before the storm, the frequency of sexual abuse was the same for two women, and one reported new abuse with the same partner. CONCLUSIONS: Physical abuse was not uncommon among displaced women following Hurricane Katrina. Increasing and new abuse were the most commonly reported experiences. Violence against women should not be overlooked as a continued, and perhaps escalating, occurrence requiring attention following displacement after disasters of such magnitude as Hurricane Katrina. |
| **57** | Schumacher, J. A. P., et al. (2010). "Intimate Partner Violence and Hurricane Katrina: Predictors and Associated Mental Health Outcomes." Violence and Victims 25(5): 588-603. | IPV/GBV | Hurricane Katrina, 2005 | Participants were 445 married or cohabiting persons who were living in the 23 southernmost counties of Mississippi at the time of Hurricane Katrina. | Post-event, cross-sectional design (February 27, 2007-July 31, 2007) | The present study sought to establish the prevalence and correlates of IPV in a population-representative sample of residents of Mississippi before and after the hurricane. We also aimed to assess whether IPV victimization was associated with poorer mental health among residents of Mississippi. | The percentage of women reporting psychological victimization increased from 33.6% prior to Hurricane Katrina to 45.2% following Hurricane Katrina. Reports of physical victimization increased from 4.2% to 8.3% for women. Thus, there was a 35% increase in the prevalence of psychological victimization and a 98% increase in physical victimization for women. Signiﬁcant predictors of post-Katrina victimization included pre-Katrina victimization, age, educational attainment, marital status, and hurricane-related stressors. Reports of IPV were associated with greater risk of post-Katrina depression and posttraumatic stress disorder. | PTSD module of the *Composite International Diagnostic Interview* (CIDI); Patient Health Questionnaire-9 (PHQ-9) | Data from the ﬁrst population-based study to document IPV following a large-scale natural disaster suggest that IPV may be an important but often overlooked public health concern following disasters. Information about IPV resources should be disseminated to affected populations so that women and men who experience IPV for the first time following a disaster will know where to turn for help and information. Similarly, shelters, hotlines, and other existing resources should be appropriately staffed to handle a potential influx of inquiries. | PubMed, PubMed, Web of Science | This study sought to establish the prevalence and correlates of intimate partner violence (IPV) victimization in the 6 months before and after Hurricane Katrina. Participants were 445 married or cohabiting persons who were living in the 23 southernmost counties of Mississippi at the time of Hurricane Katrina. Data for this study were collected as part of a larger, population-based, representative study. The percentage of women reporting psychological victimization increased from 33.6% prior to Hurricane Katrina to 45.2% following Hurricane Katrina (p < .001). The percentage of men reporting psychological victimization increased from 36.7% to 43.1% (p = .01). Reports of physical victimization increased from 4.2% to 8.3% for women (p = .01) but were unchanged for men. Significant predictors of post-Katrina victimization included pre-Katrina victimization, age, educational attainment, marital status, and hurricane-related stressors. Reports of IPV were associated with greater risk of post-Katrina depression and posttraumatic stress disorder. Data from the first population-based study to document IPV following a large-scale natural disaster suggest that IPV may be an important but often overlooked public health concern following disasters. [PUBLICATION ABSTRACT] |
| **58** | Taft, C. T., et al. (2009). "Posttraumatic Stress Disorder Symptoms, Relationship Adjustment, and Relationship Aggression in a Sample of Female Flood Victims." J Fam Violence 24(6): 389-396. | IPV/GBV | Floods (Midwest), 1993 (Illinois & Missouri) | Participants were 205 female adult flood victims who were representative of the flood population in Monroe County, Illinois and St. Louis, Missouri.  | Post-event, cross-sectional design (6-10 months post-disaster) | The purpose of this study was to test a model examining the inter-relationships among posttraumatic stress disorder (PTSD) symptoms, intimate relationship adjustment, and intimate relationship aggression in a sample of 205 adult female flood victims. The study aimed to test the following hypotheses: (a) physical aggression victimiza-tion would evidence direct and indirect associations with physical aggression perpetration through its relationships with higher PTSD symptoms and poorer relationship adjustment; and (b) poorer relationship adjustment would partially mediate the effects of PTSD symptoms on the relationship aggression outcomes. Partial (not full) mediation was proposed due to the likelihood that several other unmeasured variables likely help account for the association between PTSD symptoms and relationship aggression. | At the bivariate level, higher PTSD symptoms were associated with higher physical and psychological aggression victimization, poorer relationship adjustment, and higher physical and psychological aggression perpetration. Results from structural equation modeling (SEM) analyses indicated that relationship aggression victimization influenced aggression perpetration directly, and in the case of physical aggression, indirectly through its relationship with PTSD symptoms and relationship adjustment. The influence of PTSD symptoms on physical aggression perpetration was fully explained by poorer relationship adjustment. The data suggest inter-relationships between victimization experiences, PTSD symptomatology, poorer relationship functioning, and higher aggression perpetration. Thus, in addition to a focus on individual functioning post-disaster, prevention and treatment programs for this population should also place a focus on relationship and family functioning. | National Women's Study PTSD module; Dyadic Adjustment Scale; Verbal Aggression subscales of the Conflict Tactics Scale | The data suggest inter-relationships between victimization experiences, PTSD symptomatology, poorer relationship function-ing, and higher aggression perpetration. Thus, in addition to a focus on individual functioning post-disaster, prevention and treatment programs for this population should also place a focus on relationship and family functioning. | PubMed, ProQuest | This study tested a model examining the interrelationships among posttraumatic stress disorder (PTSD) symptoms, intimate relationship adjustment, and intimate relationship aggression in a sample of 205 adult female flood victims. At the bivariate level, higher PTSD symptoms were associated with higher physical and psychological aggression victimization, poorer relationship adjustment, and higher physical and psychological aggression perpetration. Results from structural equation modeling (SEM) analyses indicated that relationship aggression victimization influenced aggression perpetration directly, and in the case of physical aggression, indirectly through its relationship with PTSD symptoms and relationship adjustment. The influence of PTSD symptoms on physical aggression perpetration was fully explained by poorer relationship adjustment. These findings extend prior work from other traumatized populations documenting associations between variables reflecting PTSD symptomatology and indices of relationship functioning, and indicate a need for further investigation in this area of inquiry. |