

A Review of Childhood Abuse, Health, and Pain-Related Problems: The Role of Psychiatric Disorders and Current Life Stress

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The current article reviews recent research demonstrating the relationship between childhood physical and sexual abuse and adult health problems. Adult survivors of childhood abuse have more health problems and more painful symptoms. We have found that psychiatric disorders account for some, but not all, of these symptoms, and that current life stress doubles the effect of childhood abuse on health problems. Possible etiologic factors in survivors' health problems include abuse-related alterations in brain functioning that can increase vulnerability to stress and decrease immune function. Adult survivors are also more likely to participate in risky behaviors that undermine health or to have cognitions and beliefs that amplify health problems. Psychiatric disorders, although not the primary cause of difficulties, do have a role in exacerbating health and pain-related problems. We conclude by outlining treatment recommendations for abuse survivors in health care settings.

KEYWORDS *child abuse, health psychiatric disorders, stress*

Over the past decade, researchers have documented the relationship between childhood abuse and a number of serious health problems. The initial studies, which collected data primarily from samples of women seeking medical

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treatment, noted that adult survivors of childhood abuse had more medical problems than their nonabused counterparts (Sachs-Ericsson, Blazer, Plant, & Arnow, 2005). These medical problems included diabetes (Kendall-Tackett & Marshall, 1999), gastrointestinal problems (Drossman, Talley, Leserman, Olden, & Barreiro, 1995; Leserman, 2005), and obesity (Williamson, Thompson, Anda, Dietz, & Felitti, 2002). Abuse has been related to gynecological problems, headaches, arthritis, and breast cancer for women (Golding, 1994, 1999; Golding, Wilsnack, & Learman, 1998; Stein & Barrett-Connor, 2000) and thyroid disease for men (Stein & Barrett-Connor, 2000). Furthermore, childhood sexual abuse has been found to be associated with chronic fatigue, bladder problems, asthma, and heart problems, including ischemic heart disease (Dong et al., 2004; Romans, Belaise, Martin, Morris, & Raffi, 2002). Not surprisingly, abuse survivors also use more health care services (Biggs, Aziz, Tomenson, & Creed, 2003; Finestone et al., 2000).

Findings from epidemiological studies have been similar. For example, Golding and colleagues found that lifetime sexual abuse negatively impacts women's overall health (Golding, 1994, 2003; Golding, Cooper, & George, 1997). Similarly, Thompson, Kingree, and Desai (2004) found that childhood physical abuse increased health problems for men and women. A nationally representative survey of adults noted an increased odds ratio of gastrointestinal problems and migraine headaches for survivors of physical abuse (Goodwin, Hoven, Murison, & Hotopf, 2003). Researchers in a large Canadian study (Chartier, Walker, & Naimark, 2007) also found a moderate association between childhood abuse and multiple health problems, poor or fair self-rated health, pain that interferes with activities, disability due to physical health problems, and frequent emergency department and health professional visits.

Using data from the National Comorbidity Survey (NCS; Sachs-Ericsson et al., 2005), we found that childhood sexual and physical abuse increased prevalence of serious health problems for both men and women, even after we controlled for current psychiatric problems and family-of-origin issues, such as family-of-origin income, early parental loss, and parental psychiatric problems. Individuals who had been either sexually or physically abused were 1.5 to 2 times more likely to have a serious health problem than their nonabused counterparts. After controlling for the influence of family-of-origin variables and participants' current psychiatric diagnoses, we found that the relationship between childhood abuse and several health problems remained significant. These problems included blindness or deafness; heart problems; and lupus, thyroid, or autoimmune problems (Cromer & Sachs-Ericsson, 2006).

ABUSE AND CHRONIC PAIN SYNDROMES

In clinical settings, abuse survivors report more chronic pain (Kendall-Tackett, 2001), including generalized pain (Finestone et al., 2000; C. Green,

Flowe-Valencia, Rosenblum, & Tait, 2001; Kendall-Tackett, 2001; Kendall-Tackett, Marshall, & Ness, 2003), pelvic pain and vulvodynia (Harlow & Stewart, 2005; Lampe et al., 2003; Lathe, Mignini, Gray, Hills, & Khan, 2006), fibromyalgia (Boisset-Pioro, Esdaile, & Fitzcharles, 1995), chronic musculoskeletal pain (Kopec & Sayre, 2004), headache (Golding, 1999), and irritable bowel syndrome and gastrointestinal illnesses (Drossman et al., 2000; Leserman, 2005; Leserman et al., 1996; Talley, Fett, & Zinsmeister, 1995). Similarly, epidemiological studies have documented that several painful medical conditions (e.g., painful gynecological problems, headaches, arthritis, musculature pain, tender-point pain, back pain, and generally distressing physical symptoms) are more common among abuse survivors (Golding, 1994, 1999; Goodwin et al., 2003; Linton, 2002; McBeth, Macfarlane, Benjamin, Morris, & Silman, 1999; Romans et al., 2002).

In our research with the NCS sample, we examined a wide range of medical problems and the degree of reported pain associated with each of these conditions, and we compared individuals with a history of physical or sexual abuse to those with no abuse history. We found that individuals who experienced abuse reported more pain in relation to their current health problems than those without abuse experiences (Sachs-Ericsson, Kendall-Tackett, & Hernandez, 2007).

ADDITIVE AFFECT OF ABUSE EXPERIENCES AND OTHER CHILDHOOD ADVERSITIES

Children who experience one type of abuse are likely to experience other types. For example, Felitti and colleagues (1998) found that when respondents experienced one type of childhood adversity, the probability of having experienced another was approximately 80. Unfortunately, experiencing more than one type of childhood abuse compounds the effects, leading to even poorer health outcomes (e.g., Arnow, Hart, Hayward, Dea, & Barr Taylor, 2000; Diaz, Simantov, & Rickert, 2000; Felitti et al., 1998; Golding et al., 1997; Kessler, 2000; Kessler, Davis, & Kendler, 1997; Thompson, Arias, Basile, & Desai, 2002; Walker et al., 1999). Kessler argued that researchers often look at one type of childhood adversity, such as physical abuse, and assume subsequent problems are related to that, ignoring the possibility that physical abuse often co-occurs within a cluster of other childhood difficulties that may account for the symptoms they see. More recently, Finkelhor, Ormrod, and Turner (2007) found that poly-victimization was more likely to predict trauma symptoms than a single type of victimization.

Researchers have documented the fact that family characteristics associated with childhood abuse can also contribute to the development of subsequent health-related problems. These include parental psychopathology, family conflict, low socioeconomic status, parental loss or absence, and parental

divorce (Felitti et al., 1998; Fleming, Mullen, & Bammer, 1997; Kenny & McEachern, 2000; Molnar, Buka, & Kessler, 2001; Romans, Martin, Anderson, O'Shea, & Mullen, 1995; Sidebotham, Golding, & the ALSPAC Study Team, 2001; Zuravin & Fontanella, 1999). In order to understand the implications of each type of specific childhood abuse adversity on health, it is important for researchers to try to distinguish the influence of each from other co-occurring childhood adversities.

In our work, we found that several family-of-origin variables were clearly associated with adult health problems (Sachs-Ericsson et al., 2005). Specifically, parents' psychiatric disorders, parental abandonment, parental divorce, low levels of parental education, and family conflict were all associated with subsequent health problems in adults. However, even after we controlled for these family-of-origin factors, there remained a significant relationship between childhood abuse and health status, with abuse survivors reporting more health problems and pain. Thus, our work supports the conclusion that childhood sexual and physical abuse have an effect on adult health problems and pain reports above and beyond family-of-origin factors.

WHY CHILD ABUSE MAKES PEOPLE SICK: ETIOLOGICAL PATHWAYS BETWEEN ABUSE AND HEALTH OUTCOMES

As we described in the section above, childhood abuse can have major negative effects on health. The intriguing question then becomes this: Why is this so? Why does child abuse make people sick? Early abuse experiences may have an impact on adult health outcomes via several pathways (Kendall-Tackett, 2003). Direct injury is the most obvious way that abuse could be related to health, but it does not account for all health effects (Leserman et al., 1997). For example, sexual abuse may also result in sexually transmitted diseases (Hillis, Anda, Felitti, Nordenberg, & Marchbanks, 2000) or unwanted pregnancy (Dietz et al., 1999), which may lead to subsequent health problems in adulthood. Similarly, physical abuse can lead to physical injuries, including traumatic brain injury (Banks, 2007).

Behavior can also impact health. Abuse survivors, as well as persons who have experienced other types of childhood adversities, are more likely to participate in high-risk behaviors (Kendall-Tackett, 2002, 2003). Most of these behaviors and problems are associated with the leading causes of morbidity and mortality in the United States (Anderson, Kochanek, & Murphy, 1997). For example, abuse survivors are more likely to abuse substances, drive while intoxicated, smoke, compulsively overeat, be severely obese, avoid exercise, and engage in risky sexual behavior (Felitti et al., 1998; Fleming, Mullen, Sibthorpe, & Bammer, 1999; Kaplan et al., 1998; Nichols & Harlow, 2004; Springs & Friedrich, 1992; Walker et al., 1999; Williamson et al., 2002).

Moreover, childhood abuse may increase the risk of health problems through comorbid psychiatric disorders and the impact of early abuse experiences on the developing brain. Early life stress has been found to influence immune functioning and sensitivity to stress, which may in turn contribute to increased health problems. Problems related to psychiatric disorders include low self-esteem, poor coping skills, disturbed self-identity, poor interpersonal skills, insecure attachment styles, and increased vulnerability to stress (Becker-Lausen & Mallon-Kraft, 1997; Romans et al., 2002; Waldinger, Schulz, Barsky, & Ahern, 2006). Individuals with a history of sexual assault were found to have less contact with and to have received less support from friends and family (Golding, Wilsnack, & Cooper, 2002). Social support, in turn, has repeatedly been shown to be a major protective factor against psychiatric disorders, particularly depression (Plant & Sachs-Ericsson, 2004), and has also been shown to influence health outcomes (Israel, Farquhar, Schulz, James, & Parker, 2002; Lett et al., 2005).

Early Abuse, Stress, and the Developing Brain

Abuse experiences may also result in physiological alterations, including changes in the developing brain (Heim & Nemeroff, 2002; Kendall-Tackett, 2002, 2003). These trauma-related changes can contribute to increased physiological reactivity to current stressors. For example, Thakkar and McCanne (2000) found that women with a history of abuse reported more physical symptoms in response to daily stress than women with no abuse history.

Another physiologic sequela of early life stress is enhanced sensitivity of the hypothalamic–pituitary–adrenal axis (Kendall-Tackett, 2002). These alterations have been observed in individuals with posttraumatic stress disorder (PTSD) and women who have experienced childhood sexual abuse (Yehuda, Boissoneau, Lowy, & Giller, 1995). Ongoing activation of the hypothalamic–pituitary–adrenal axis may result in an individual having abnormally low levels of cortisol or becoming cortisol resistant (Kendall-Tackett, 2008). In either case, immune function is impaired, increasing the chance of illness (Altemus, Cloitre, & Dhabhar, 2003; Heim & Nemeroff, 2002).

Abuse, Stress Reactivity, and the Immune System

In our research, we found that current stressful life events moderated the relationship between childhood abuse and adult health problems. Specifically, the presence of stress more than doubled the effect of physical or sexual abuse on health problems (Cromer & Sachs-Ericsson, 2006). Our findings are consistent with past research on the relationship between childhood abuse and the sensitization of stress-responsive neurobiological systems. Childhood abuse can also dysregulate the immune system, which can increase

psychiatric morbidity among individuals with abuse histories. Specifically, individuals with PTSD (resulting from childhood sexual abuse) displayed several markers of increased immune activation (Wilson, Calhoun, & Bernat, 1999). Moreover, depression, which is highly comorbid with childhood abuse, has also been associated with impaired immune functioning, with increased cytokine secretion, and with dysregulation of cortisol, implicated as mechanisms by which the immune system becomes less effective (Connor & Leonard, 1998; Kendall-Tackett, 2008; Maes, Bosmans, & Meltzer, 1995). This paradigm of immune dysregulation among individuals with childhood abuse is consistent with research findings that indicate that autoimmune problems are more frequent in individuals with a history of childhood abuse (Dallam, 2005). Thus, it seems that immunological research, in conjunction with research on childhood abuse, is a promising area for future investigation.

The Role of Psychiatric Disorders in Health Outcomes

What is the role of psychiatric disorders in adult survivors' health symptoms? Abuse survivors have higher rates of psychiatric problems (e.g., Kendler et al., 2000), which has been found to be related to health status (e.g., Schnurr & Spiro, 1999). Indeed, some have hypothesized that psychiatric problems may mediate the influence of childhood abuse on health problems (Golding, 1994; Verona & Sachs-Ericsson, 2005). However, several studies have found that the influence has been relatively minimal. For example, in their meta-analysis, Golding and colleagues (1997) concluded that depression did not markedly change the influence of abuse on subjective health. Nor did psychiatric disorders mediate the association between child abuse and pain reports (Walsh, Jamieson, MacMillan, & Boyle, 2007). In our research with the NCS sample, we found that lifetime psychiatric disorders partially mediated the relationship between abuse and the occurrence of the 1-year prevalence of serious health problems, but the effects were relatively minimal. Nonetheless, our work with the NCS data has shown that psychiatric disorders contribute to the relationship between abuse and health (Sachs-Ericsson et al., 2005, 2007).

The Mechanism Underlying Abuse and Pain Sensitivity

Abuse survivors also report experiencing more pain in relation to their health problems (Sachs-Ericsson, Verona, Joiner, & Preacher, 2006). Several theories have been put forth to account for increased pain in abuse survivors. Childhood abuse may contribute to a negative attributional style (Sachs-Ericsson et al., 2006), an inability to manage stress (Kendall-Tackett, 2001), and limited social support (Golding et al., 2002)—each of which may exacerbate pain. Researchers have suggested that trauma-related alterations in neurosensory

processing may amplify pain (Arnold et al., 2000; Drossman, 1994), and childhood abuse lowers pain thresholds (Scarinci, McDonald-Haile, Bradley, & Richter, 1994).

What is interesting is that results of an experimental study suggested that individuals with a history of childhood abuse may have a decreased sensitivity to experimentally induced pain; however, these individuals also had more difficulties related to chronic pain. As the authors noted, their findings highlight the complexity of the relationship between abuse history and pain, thereby illustrating the need for further investigation of pain-related correlates of abuse (Fillingim & Edwards, 2005).

Some of this increased pain may be due to depression. Depression is common among adult survivors of abuse (Goldberg, 1994; Levitan et al., 1998; Molnar et al., 2001; Roosa, Reinholtz, & Angelini, 1999; Turner & Muller, 2004; Zuravin & Fontanella, 1999) and among patients with chronic pain (Faucett, 1994; Fishbain, Cutler, Rosomoff, & Rosomoff, 1997; Magni, Moreschi, Rigatti-Luchini, & Merskey, 1994; McWilliams, Cox, & Enns, 2003). Moreover, past research has shown that depression increases pain reports among individuals with health problems (Hernandez & Sachs-Ericsson, 2006).

From a physiological standpoint, pain and depression are quite similar and may, in fact, become mutually maintaining conditions (Meagher, 2004). Specifically, depression is associated with a neurochemical imbalance of neurotransmitters (Bair, Robinson, Katon, & Kroenke, 2003; Fava, 2003), including serotonin, norepinephrine, and dopamine (Andrews & Pinder, 2000; Blackburn-Munro & Blackburn-Munro, 2001). Analgesic effects are produced by serotonin and norepinephrine through descending pain pathways, and these effects may be disrupted by decreased levels of these neurotransmitters (Andrews & Pinder, 2000). The pain modulation system influences affect and attention to peripheral stimuli and plays a role in suppressing minor signals coming from the body (Blackburn-Munro & Blackburn-Munro, 2001; Stahl, 2002). These signals may be less suppressed when serotonin and norepinephrine are depleted (Bair et al., 2003). Thus, the association between pain and depression may be due, in part, to the neurochemical impact depression plays in the pain response (Blackburn-Munro & Blackburn-Munro, 2001).

Emotionally negative mood states may also reduce tolerance to aversive stimuli (Meagher, Arnau, & Rhudy, 2001; Zelman, Howland, Nichols, & Cleeland, 1991). The motivational priming model proposes that negative emotional states enhance pain perception, whereas pleasant affective states attenuate it. Specifically, studies have shown that negative affect decreased pain tolerance to aversive stimuli whereas positive affect increased tolerance to aversive stimuli (Meagher et al., 2001; Zelman et al., 1991). Thus, negative emotions seem to magnify patients' experiences of pain.

Abuse, pain, and depression. In our research, abuse survivors reported more pain in relation to their health problems than did their nonabused counterparts (Sachs-Ericsson et al., 2007). We also hypothesized that because childhood abuse is associated with higher rates of depression, and depression is associated with more reported pain, depression would mediate the relationship between childhood abuse and adult pain reports. Indeed, we did find higher rates of pain and higher rates of depression among abuse survivors. We initially found that depression did mediate the relationship between childhood abuse and pain reports. However, after we controlled for differences between abused and nonabused participants on specific health problems (which were greater among the abused participants), depression did not mediate the relationship. Thus, we concluded that the higher rate of depression found among abuse survivors was not the primary factor for their increased pain reports. Rather, childhood abuse and depression independently contributed to pain reports (Sachs-Ericsson et al., 2007). Thus, both depression and pain, common sequelae of childhood abuse, need to be appropriately addressed within the context of medical and psychological treatments.

TREATMENT IMPLICATIONS

This review has highlighted the connection between childhood abuse and poor health in adult survivors. The ongoing costs of childhood abuse—both personal and societal—are enormous and provide the impetus for understanding the mechanisms by which events in childhood can lead to poor health (Schnurr & Green, 2004). The first step in attenuating the physical health consequences of abuse is to identify abuse survivors when they present in medical or mental health settings (Schnurr & Green, 2004). From a mind–body perspective, the accurate diagnosis of both physical and mental illnesses is a key step in improving a patient’s overall health. Mental health professionals need to consider both the patient’s physical and mental health in the context of an overall treatment plan. Medical personnel also need to understand the possible health implications of an abuse history and its psychiatric sequelae (Schnurr & Green, 2004).

Universal screening for depression, with follow-up referrals, may prove to be the most cost-effective way of detecting depression in medical settings (B. L. Green & Kimmerling, 2004; Schoenbaum et al., 2001). It is also possible that similar methods could aid in the identification of other psychiatric disorders that are commonly associated with childhood abuse, such as PTSD and other anxiety disorders. Abuse survivors with chronic pain will also need an integrative approach to treatment that addresses both their physical health complaints and any depression or other psychiatric disorder that may be magnifying their symptoms. Any treatment that ignores both components will be incomplete. Screening for pain can initially be completed

with the use of a one- or two-item pain measure, such as asking patients to rate their current level of pain on a scale from 0 to 10, with 0 being *no pain* and 10 being *intense pain*.

Mental health professionals must also be aware that some of their patients may be at risk for serious health problems. One helpful step may be for clinicians to assess a patient's general physical health history in conjunction with his or her mental health history. Furthermore, mental health practitioners may wish to refer their patients to a non-psychiatric physician to aid in the detection of any potential medical problems (DeVellis & DeVellis, 2001). Mental health care can be an important adjunct to medical care and should specifically address psychological and behavioral variables that may contribute to or exacerbate medically related conditions, such as risky health behaviors or catastrophizing cognitions related to physical symptoms.

Recommendations for Treatment

In health care settings, sensitivity to the needs of abuse survivors can enhance the effectiveness of their care (Monahan & Forgash, 2000; Schachter, Radomsky, Stalker, & Teram, 2004). Some issues specifically related to caring for an abuse survivor include increasing the patient's sense of safety; approaching the disclosure of childhood abuse in an open and empathic manner; and being sensitive to abuse-related issues, such as boundaries, the effects of trauma on the body, and the potential for flashback triggers. Schachter and colleagues found that a general approach is to treat the clinician-patient relationship as a collaborative partnership, which encourages patients to be more in control of deciding a treatment course. If patients are educated about their illnesses and their available treatment options, they are more likely to comply with treatment. If both patients and care providers are aware of the physical and mental health consequences of childhood abuse, then abuse survivors are more likely to receive appropriate—and effective—care.

In addition to the more general implications discussed above, there are several specific treatment guidelines and recommendations. These include monitoring health-risk behaviors and helping patients both reduce current life stress and strengthen their social support.

As we described, abuse survivors are more likely to participate in high-risk behaviors that increase their risk of illness and premature mortality (Kendall-Tackett, 2001). With regard to treatment, it is important for primary care physicians to screen and monitor these behaviors, given their connection to many medical problems. Mental health professionals should also screen and monitor these behaviors as they may represent poor coping skills used to deal with trauma-associated psychological distress (Davis, Combs-Lane, & Smith, 2004; Springs & Friedrich, 1992). These ineffective coping methods can be replaced during therapy with strategies that are healthier from both a mental and physical health standpoint. Risky health

behaviors, such as smoking or substance use, are not easily addressed in treatment. Rather, they require dedicated treatment programs to increase the individual's motivation to reduce risky behaviors, develop skills for dealing with life stressors, and, just as important, directly address the psychiatric symptoms often associated with individuals who engage in risky health behaviors. Others believe that individuals who engage in risky health behaviors will make significant strides in making effective changes when they are enrolled in specialized treatments. These specialized programs target the specific needs of subgroups of individuals, such as those who experience high negative affect or those who abuse substances, rather than expect any single treatment approach to be a panacea (Brown, 2003; Shiffman, 1993).

Another specific treatment recommendation is to help abuse survivors reduce current life stress. A growing body of literature indicates that current life stress can exacerbate the relationship between trauma and poor health (e.g., Cromer & Sachs-Ericsson, 2006). Moreover, stress is an important factor in the onset and relapse of most psychiatric disorders (Rende & Plomin, 1992). Education on this relationship can empower patients, and a proportion of treatment should help abuse survivors lower their stress levels.

Yet another specific recommendation for treating abuse survivors is to strengthen their social support networks. Abuse survivors often have low levels of social support, and this can dramatically impair their health (Biggs, Aziz, Tomenson, & Creed, 2004). Supportive disclosures of assaults can act as a buffer against increased health problems (Kimerling & Calhoun, 1994), and social support is also an important buffer against psychiatric disorders, and in particular depression (Joiner, Coyne, & Haslam, 2000; Petty, Sachs-Ericsson, & Joiner, 2004). Several psychotherapy protocols focus on increasing interpersonal skills and social support, thereby reducing reactivity to stress. For example, dialectical behavior therapy focuses on building interpersonal relationships, increasing stress tolerance, and developing self-soothing behaviors (Comtois & Linehan, 2006). Exposure-based therapies, which are effective for treating anxiety disorders, help abuse survivors with health problems function more effectively (Leserman, 2005). However, as Leserman noted, the field needs more research examining psychological treatments that might be effective specifically for treating physical health problems associated with sexual abuse history.

Our research suggests that childhood abuse and depression independently contribute to pain experiences for individuals in chronic pain. If an abuse survivor has comorbid pain and depression, addressing one problem without the other would not adequately meet his or her treatment needs. Many of the same recommendations described above for increasing social skills, increasing social support networks, and decreasing stress are also applicable to the treatment of comorbid pain and depression among individuals with a history of abuse. Additionally, both depression and chronic pain can be treated with antidepressants, which will help alleviate both pain

and depression. Furthermore, health and pain-related problems can be treated with exercise, physical and occupational therapy, stress management, and activity pacing. Patients' catastrophizing beliefs about their health can be addressed with the use of cognitive-behavioral psychotherapy. Indeed, our research suggests that childhood abuse directly contributes to the development of a negative attributional style (Sachs-Ericsson et al., 2006). Therapy that specifically addresses this style has been found to be helpful in reducing chronic pain (Kendall-Tackett et al., 2003).

Barriers to Care

Those seeking to provide adequate and compassionate health care for abuse survivors may face several barriers. They may lack adequate assessment tools, have limited resources, and find that discussing abuse with patients is difficult or uncomfortable. Clinicians facing these barriers may be tempted to write off patients as "difficult" without understanding the role of previous trauma and the difficulties that that history can create in the patient-provider relationship (Havig, 2008). Abuse survivors often feel quite vulnerable in health care settings, and this can lead to negative patient-provider interactions. These negative interactions can exacerbate patients' psychological and health-related problems.

In a study of sexual abuse survivors, Havig (2008) found that patients were most responsive when health care providers provided an atmosphere of openness, professionalism, sensitivity, and concern. Havig concluded that providers should initiate active and routine inquiry regarding abuse. Furthermore, providers should be prepared to listen to the experiences of survivors without revictimizing, blaming, dismissing, or judging them. This will facilitate an enhanced understanding of patient needs and provide patients with the opportunity to engage in more positive health behaviors.

As Schnurr and Green (2004) noted, the association between trauma, mental health, and medical problems has "systems" and policy implications. The above recommendations, when taken altogether, may seem daunting given the current health care system. However, in order to be their most effective, primary care practitioners and mental health clinicians need to collaborate on the delivery of care for abuse survivors. An integrated care model can more effectively accomplish the preceding treatment recommendations. This collaborative model can substantially reduce health care use, increase treatment adherence, and lead to better recovery for abuse survivors (e.g., Kimerling & Calhoun, 1994).

Conclusions and Future Research

Our research, based on a large representative epidemiological sample, has extended past research by demonstrating a relationship between childhood

sexual and physical abuse and increased rates of health problems. We have found that abuse survivors also have higher rates of chronic pain. Furthermore, our work has shown that current life stressors moderate the relationship between abuse and health problems, such that stress exacerbates health problems in abuse survivors.

Whereas several researchers have speculated that abuse-related health problems may be due to psychiatric disorders, we have found that psychiatric disorders have a relatively small influence on the relationship between abuse, health problems, and pain reports. From our data, it appears that health problems, chronic pain, and psychiatric disorders are all sequelae of past abuse. That conclusion should change the way that experts approach the treatment of patients. Each of these problems needs to be addressed in treatment. Addressing one problem and not the other would likely be insufficient in adequately meeting an individual's treatment needs.

The continuing influence of childhood abuse on adult health functioning, as well as the impact of current stress, underscores the significant public health concern surrounding childhood abuse. Various mechanisms most likely underlie the association between childhood abuse and poor health. Future research that identifies and elaborates on these underlying mechanisms will play an important role in extending understanding of the negative health sequelae of childhood abuse.

REFERENCES

- Altemus, M., Cloitre, M., & Dhabhar, F. S. (2003). Enhanced cellular immune response in women with PTSD related to childhood abuse. *American Journal of Psychiatry, 160*, 1705–1707.
- Anderson, R. N., Kochanek, K. D., & Murphy, S. L. (1997). Report of final mortality statistics, 1995. *Monthly Vital Statistics Report, 45*(11, Suppl. 2). Hyattsville, MD: National Center for Health Statistics.
- Andrews, J., & Pinder, R. (2001). Antidepressants of the future: A critical assessment of the chemistry and pharmacology of novel antidepressants in development. In B. E. Leonard (Ed.), *Antidepressants* (pp. 123–146). Boston: Birkhauser.
- Arnow, B., Hart, S., Hayward, C., Dea, R., & Barr Taylor, C. (2000). Severity of child maltreatment, pain complaints and medical utilization among women. *Journal of Psychiatric Research, 34*, 413–421.
- Bair, M. J., Robinson, R. L., Katon, W., & Kroenke, K. (2003). Depression and pain comorbidity: A literature review. *Archives of Internal Medicine, 163*, 2433–2445.
- Banks, M. (2007). Overlooked but critical: Traumatic brain injury as a consequence of interpersonal violence. *Trauma, Violence & Abuse, 8*, 290–298.
- Becker-Lausen, E., & Mallon-Kraft, S. (1997). Pandemic outcomes: The intimacy variable. In G. K. Kantor & J. S. Jasinski (Eds.), *Out of darkness: Current perspectives on family violence* (pp. 49–57). Newbury Park, CA: Sage.

- Biggs, A.-M., Aziz, Q., Tomenson, B., & Creed, F. (2003). Do childhood adversity and recent social stress predict health care use in patients presenting with upper abdominal or chest pain? *Psychosomatic Medicine*, *65*, 1020–1028.
- Biggs, A.-M., Aziz, Q., Tomenson, B., & Creed, F. (2004). Effect of childhood adversity on health related quality of life in patients with upper abdominal or chest pain. *Gut*, *53*, 180–186.
- Blackburn-Munro, G., & Blackburn-Munro, R. (2001). Chronic pain, chronic stress and depression: Coincidence or consequence? *Journal of Neuroendocrinology*, *13*, 1009–1023.
- Boisset-Piolo, M., Esdaile, J., & Fitzcharles, M. (1995). Sexual and physical abuse in women with fibromyalgia syndrome. *Arthritis & Rheumatism*, *38*, 235–241.
- Brown, R. A. (2003). Comorbidity treatment. In D. B. Abrams, R. S. Niaura, R. A. Brown, K. M. Emmons, M. G. Goldstein, & P. M. Monti (Eds.), *The tobacco dependence treatment handbook: A guide to best practices* (pp. 178–229). New York: Guilford Press.
- Chartier, M. J., Walker, J. R., & Naimark, B. (2007). Childhood abuse, adult health, and health care utilization: Results from a representative community sample. *American Journal of Epidemiology*, *165*, 1031–1038.
- Comtois, K., & Linehan, M. (2006). Psychosocial treatments of suicidal behaviors: A practice-friendly review. *Journal of Clinical Psychology*, *62*, 161–170.
- Connor, T. J., & Leonard, B. E. (1998). Depression, stress and immunological activation: The role of cytokines in depressive disorders. *Life Sciences*, *62*, 583–606.
- Cromer, K., & Sachs-Ericsson, N. (2006). The association between childhood abuse, PTSD and the occurrence of adult health problems: Moderation via current life stress. *Journal of Traumatic Stress*, *19*, 967–971.
- Dallam, S. J. (2005). Health issues associated with violence against women. In K. A. Kendall-Tackett (Ed.), *Handbook of women, stress & trauma* (pp. 159–180). New York: Taylor & Francis.
- Davis, J. L., Combs-Lane, A. M., & Smith, D. W. (2004). Victimization and health risk behaviors: Implications for prevention programs. In K. A. Kendall-Tackett (Ed.), *Health consequences of abuse in the family: A clinical guide for evidence-based practice* (pp. 179–195). Washington, DC: American Psychological Association.
- DeVellis, B. M., & DeVellis, R. F. (2001). Self-efficacy and health. In A. Baum, T. A. Evenson, & J. E. Singer (Eds.), *Handbook of health psychology*. Mahwah, NJ: Erlbaum.
- Diaz, A., Simantov, E., & Rickert, V. I. (2000). Effect of abuse on health: Results of a national survey. *Archives of Pediatric Adolescent Medicine*, *156*, 811–817.
- Dietz, P. M., Spitz, A. M., Anda, R. F., Williamson, D. F., McMahon, P. M., Santelli, J. S., et al. (1999). Unintended pregnancy among adult women exposed to abuse or household dysfunction during their childhood. *Journal of the American Medical Association*, *282*, 1359–1364.
- Dong, M., Giles, W. H., Felitti, V. J., Dube, S. R., Williams, J. E., Chapman, D. P., et al. (2004). Insights into causal pathways for ischemic heart disease: Adverse Childhood Experiences Study. *Circulation*, *110*, 1761–1766.
- Drossman, D. A. (1994). Physical and sexual abuse and gastrointestinal illness: What is the link? *American Journal of Medicine*, *97*, 105–107.

- Drossman, D. A., Leserman, J., Li, Z., Keefe, F., Hu, Y. J. B., & Toomey, T. C. (2000). Effects of coping on health outcome among women with gastrointestinal disorders. *Psychosomatic Medicine, 62*, 309–317.
- Drossman, D. A., Talley, N. J., Leserman, J., Olden, K. W., & Barreiro, M. A. (1995). Sexual and physical abuse and gastrointestinal illness: Review and recommendations. *Annals of Internal Medicine, 123*, 782–794.
- Faucett, J. (1994). Depression in painful chronic disorders: The role of pain and conflict about pain. *Journal of Pain Symptom Management, 9*, 520–526.
- Fava, M. (2003). The role of the serotonergic and noradrenergic neurotransmitter systems in the treatment of psychological and physical symptoms of depression. *Journal of Clinical Psychiatry, 64*(Suppl. 13), 26–29.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., et al. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine, 14*, 245–258.
- Fillingim, R., & Edwards, R. (2005). Is self-reported childhood abuse history associated with pain perception among healthy young women and men? *Clinical Journal of Pain, 21*, 387–397.
- Finestone, H., Stenn, P., Davies, F., Stalker, C., Fry, R., & Koumanis, J. (2000). Chronic pain and health care utilization in women with a history of childhood sexual abuse. *Child Abuse & Neglect, 24*, 547–556.
- Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2007). Poly-victimization and trauma in a national longitudinal cohort. *Development and Psychopathology, 19*(1), 149–166.
- Fishbain, D., Cutler, R., Rosomoff, H., & Rosomoff, R. (1997). Chronic pain-associated depression: Antecedent or consequence of chronic pain? A review. *Clinical Journal of Pain, 13*, 116–137.
- Fleming, J., Mullen, P., & Bammer, G. (1997). A study of potential risk factors for sexual abuse in childhood. *Child Abuse & Neglect, 21*, 49–58.
- Fleming, J., Mullen, P. E., Sibthorpe, B., & Bammer, G. (1999). The long-term impact of childhood sexual abuse in Australian women. *Child Abuse & Neglect, 23*, 145–159.
- Goldberg, R. (1994). Childhood abuse, depression, and chronic pain. *Clinical Journal of Pain, 10*, 277–281.
- Golding, J. M. (1994). Sexual assault history and physical health in randomly selected Los Angeles women. *Health Psychology, 13*, 130–138.
- Golding, J. M. (1999). Sexual-assault history and long-term physical health problems: Evidence from clinical and population epidemiology. *Current Directions in Psychological Science, 8*(6), 191–194.
- Golding, J. M. (2003). Sexual-assault history and long-term physical health problems: Evidence from clinical and population epidemiology. *Directions in Psychological Science, 8*, 191–194.
- Golding, J. M., Cooper, M. L., & George, L. K. (1997). Sexual assault history and health perceptions: Seven general population studies. *Health Psychology, 16*, 417–425.
- Golding, J., Wilsnack, S., & Cooper, M. (2002). Sexual assault history and social support: Six general population studies. *Journal of Traumatic Stress, 15*(3), 187–197.

- Golding, J. M., Wilsnack, S. C., & Learman, L. A. (1998). Prevalence of sexual assault history among women with common gynecologic symptoms. *American Journal of Obstetrics and Gynecology*, *179*, 1013–1019.
- Goodwin, R. D., Hoven, C. W., Murison, R., & Hotopf, M. (2003). Association between childhood physical abuse and gastrointestinal disorders and migraine in adulthood. *American Journal of Public Health*, *93*, 1065–1067.
- Green, B. L., & Kimmerling, R. (2004). Trauma, posttraumatic stress disorder, and health status. In P. Schnurr & B. L. Green (Eds.), *Trauma and health: Physical health consequences of exposure in extreme stress* (pp. 129–155). Washington, DC: American Psychological Association.
- Green, C., Flowe-Valencia, H., Rosenblum, L., & Tait, A. (2001). The role of childhood and adulthood abuse among women presenting for chronic pain management. *Clinical Journal of Pain*, *17*, 359–364.
- Harlow, B. L., & Stewart, E. G. (2005). Adult-onset vulvodynia in relation to childhood violence victimization. *American Journal of Epidemiology*, *161*, 871–880.
- Havig, K. (2008). The health care experiences of adult survivors of child sexual abuse: A systematic review of evidence on sensitive practice. *Trauma Violence Abuse*, *9*(1), 19–33.
- Heim, C., & Nemeroff, C. B. (2002). Neurobiology of early life stress: Clinical studies. *Seminars in Clinical Neuropsychiatry*, *7*, 147–159.
- Hernandez, A., & Sachs-Ericsson, N. (2006). Ethnic differences in pain reports and the moderating role of depression in a community sample of Hispanic and Caucasian participants with serious health problems. *Psychosomatic Medicine*, *68*, 121–128.
- Hillis, S. D., Anda, R. F., Felitti, V. J., Nordenberg, D., & Marchbanks, P. A. (2000). Adverse childhood experiences and sexually transmitted diseases in men and women: A retrospective study. *Pediatrics*, *106*, E11.
- Israel, B. A., Farquhar, S. A., Schulz, A. J., James, S. A., & Parker, E. A. (2002). The relationship between social support, stress, and health among women on Detroit's east side. *Health Education & Behavior*, *29*, 342–360.
- Joiner, T., Coyne, J. C., & Haslam, N. (2000). The interactional nature of depression. *Journal of Cognitive Psychotherapy*, *14*, 413–415.
- Kaplan, S. J., Pelcovitz, D., Salzinger, S., Weiner, M., Mandel, F. S., & Lesser, M. L. (1998). Adolescent physical abuse: Risk for adolescent psychiatric disorders. *American Journal of Psychiatry*, *155*, 954–959.
- Kendall-Tackett, K. (2001). Chronic pain: The next frontier in child maltreatment research. *Child Abuse & Neglect*, *25*, 997–1000.
- Kendall-Tackett, K. A. (2002). The health effects of childhood abuse: Four pathways by which abuse can influence health. *Child Abuse & Neglect*, *26*, 715–729.
- Kendall-Tackett, K. A. (2003). *Treating the lifetime health effects of childhood victimization*. Kingston, NJ: Civic Research Institute.
- Kendall-Tackett, K. A. (2008). *Non-pharmacologic treatments for depression in new mothers: Omega-3s, exercise, bright light therapy, social support, psychotherapy and St. John's Wort*. Amarillo, TX: Hale Publishing.
- Kendall-Tackett, K. A., & Marshall, R. (1999). Victimization and diabetes: An exploratory study. *Child Abuse & Neglect*, *23*, 593–596.

- Kendall-Tackett, K. A., Marshall, R., & Ness, K. E. (2003). Chronic pain syndromes and violence against women. *Women and Therapy, 26*, 45–56.
- Kendler, K. S., Bulik, C. M., Silberg, J., Hettema, J. M., Myers, J., & Prescott, C. A. (2000). Childhood sexual abuse and adult psychiatric and substance use disorders in women: An epidemiological and cotwin control analysis. *Archives of General Psychiatry, 57*, 953–959.
- Kenny, M. C., & McEachern, A. G. (2000). Racial, ethnic, and cultural factors of childhood sexual abuse: A selected review of the literature. *Clinical Psychology Review, 20*, 905–922.
- Kessler, R. C. (2000). The long-term effects of childhood adversities on depression and other psychiatric disorders. In T. O. Harris (Ed.), *Where inner and outer worlds meet* (pp. 227–244). London: Routledge.
- Kessler, R. C., Davis, C. G., & Kendler, K. S. (1997). Childhood adversity and adult psychiatric disorder in the US National Comorbidity Survey. *Psychological Medicine, 27*, 1101–1119.
- Kimerling, R., & Calhoun, K. S. (1994). Somatic symptoms, social support, and treatment seeking among sexual assault victims. *Journal of Consulting and Clinical Psychology, 62*, 333–340.
- Kopec, J., & Sayre, E. (2004). Traumatic experiences in childhood and the risk of arthritis: A prospective cohort study. *Canadian Journal of Public Health, 95*, 361–365.
- Lampe, A., Doering, S., Rumpold, G., Soelder, E., Krismer, M., Kantner-Rumplmair, W., et al. (2003). Chronic pain syndromes and their relation to childhood abuse and stressful life events. *Journal of Psychosomatic Research, 54*, 361–367.
- Lathe, P., Mignini, L., Gray, R., Hills, R., & Khan, K. (2006). Factors predisposing women to chronic pelvic pain: Systematic review. *British Medical Journal, 332*, 749–755.
- Leserman, J. (2005). Sexual abuse history: Prevalence, health effects, mediators, and psychological treatment. *Psychosomatic Medicine, 67*, 906–915.
- Leserman, J., Drossman, D. A., Li, Z., Toomey, T. C., Nachman, G., & Glogau, L. (1996). Sexual and physical abuse history in gastroenterology practice: How types of abuse impact health status. *Psychosomatic Medicine, 58*, 4–15.
- Leserman, J., Li, Z., Drossman, D. A., Toomey, T. C., Nachman, G., & Glogau, L. (1997). Impact of sexual and physical abuse dimensions on health status: Development of an abuse severity measure. *Psychosomatic Medicine, 59*, 152–160.
- Lett, H. S., Blumenthal, J. A., Babyak, M. A., Strauman, T. J., Robins, C., & Sherwood, A. (2005). Social support and coronary heart disease: Epidemiologic evidence and implications for treatment. *Psychosomatic Medicine, 67*, 869–878.
- Levitan, R. D., Parikh, S. V., Lesage, A. D., Hegadoren, K. M., Adams, M., Kennedy, S. H., et al. (1998). Major depression in individuals with a history of childhood physical or sexual abuse: Relationship to neurovegetative features, mania, and gender. *American Journal of Psychiatry, 155*, 1746–1752.
- Linton, S. J. (2002). A prospective study of the effects of sexual or physical abuse on back pain. *Pain, 96*, 347–351.
- Maes, M., Bosmans, E., & Meltzer, H. Y. (1995). Immunoendocrine aspects of major depression. Relationships between plasma interleukin-6 and soluble interleukin-2 receptor, prolactin and cortisol. *European Archives of Psychiatry and Clinical Neuroscience, 245*, 172–178.

- Magni, G., Moreschi, C., Rigatti-Luchini, S., & Merskey, H. (1994). Prospective study on the relationship between depressive symptoms and chronic musculoskeletal pain. *Pain, 56*, 289–297.
- McBeth, J., Macfarlane, G., Benjamin, S., Morris, S., & Silman, A. (1999). The association between tender points, psychological distress, and adverse childhood experiences: A community-based study. *Arthritis & Rheumatism, 42*, 1397–1404.
- McWilliams, L., Cox, B., & Enns, M. (2003). Mood and anxiety disorders associated with chronic pain: An examination in a nationally representative sample. *Pain, 106*, 127–133.
- Meagher, M. W. (2004). Links between traumatic family violence and chronic pain: Biopsychosocial pathways and treatment implications. In K. A. Kendall-Tackett (Ed.), *Health consequences of abuse in the family: A clinical guide for evidence-based practice* (pp. 155–177). Washington, DC: American Psychological Association.
- Meagher, M. W., Arnau, R. C., & Rhudy, J. L. (2001). Pain and emotion: Effects of affective picture modulation. *Psychosomatic Medicine, 63*, 79–90.
- Molnar, B., Buka, S., & Kessler, R. (2001). Child sexual abuse and subsequent psychopathology: Results from the National Comorbidity Survey. *American Journal of Public Health, 91*, 753–760.
- Monahan, K., & Forgash, C. (2000). Enhancing the health care experiences of adult female survivors of childhood sexual abuse. *Women's Health, 30*(4), 27–41.
- Nichols, H. B., & Harlow, B. L. (2004). Childhood abuse and risk of smoking onset. *Journal of Epidemiology & Community Health, 58*, 402–406.
- Petty, C., Sachs-Ericsson, N., & Joiner, T. (2004). Interpersonal dysfunction: Cause or result of depressive disorders. *Journal of Affective Disorders, 81*(2), 115–122.
- Plant, E. A., & Sachs-Ericsson, N. (2004). Racial and ethnic differences in depression: The roles of social support and meeting basic needs. *Journal of Consulting and Clinical Psychology, 72*, 41–52.
- Rende, R., & Plomin, R. (1992). Diathesis-stress models of psychopathology: A quantitative genetic perspective. *Applied & Preventive Psychology, 1*(4), 177–182.
- Romans, S., Belaise, C., Martin, J., Morris, E., & Raffi, A. (2002). Childhood abuse and later medical disorders in women: An epidemiological study. *Psychotherapy & Psychosomatics, 71*(3), 141–150.
- Romans, S., Martin, J., Anderson, J., O'Shea, M., & Mullen, P. (1995). Factors that mediate between child sexual abuse and adult psychological outcome. *Psychological Medicine, 25*, 127–142.
- Roosa, M., Reinholtz, C., & Angelini, P. (1999). The relation of child sexual abuse and depression in young women: Comparisons across four ethnic groups. *Journal of Abnormal Child Psychology, 27*(1), 65–76.
- Sachs-Ericsson, N., Blazer, D., Plant, E. A., & Arnow, B. (2005). Childhood sexual and physical abuse and the one-year prevalence of medical problems in the National Comorbidity Study. *Health Psychology, 24*, 32–40.
- Sachs-Ericsson, N., Kendall-Tackett, K., & Hernandez, A. (2007). Childhood abuse, chronic pain and depression in the National Comorbidity Survey. *Child Abuse & Neglect, 3*, 531–547.
- Sachs-Ericsson, N., Verona, E., Joiner, T., & Preacher, K. (2006). Parental verbal abuse and the mediating role of self-criticism in adult internalizing disorders. *Journal of Affective Disorders, 93*(1–3), 71–78.

- Scarinci, I. C., McDonald-Haile, J., Bradley, L. A., & Richter, J. E. (1994). Altered pain perception and psychosocial features among women with gastrointestinal disorders and history of abuse: A preliminary model. *American Journal of Medicine*, *97*, 108–118.
- Schachter, C. L., Radomsky, N. A., Stalker, C. A., & Teram, E. (2004). Women survivors of child sexual abuse: How can health professionals promote healing? *Canadian Family Physician*, *50*, 405–412.
- Schnurr, P., & Green, B. L. (2004). Understanding relationships among trauma, post-traumatic stress disorder, and health outcomes. *Advances in Mind-Body Medicine*, *20*(1), 18–29.
- Schnurr, P. P., & Spiro, A. (1999). Combat exposure, posttraumatic stress disorder symptoms, and health behaviors as predictors of self-reported physical health in older veterans. *Journal of Nervous and Mental Disorders*, *187*, 353–359.
- Schoenbaum, M., Unutzer, J., Sherbourne, C., Duan, N., Rubenstein, L. V., Miranda, J., et al. (2001). Cost-effectiveness of practice-initiated quality improvement for depression: Results of a randomized controlled trial. *Journal of the American Medical Association*, *286*, 1325–1330.
- Shiffman, S. (1993). Assessing smoking patterns and motives. *Journal of Consulting and Clinical Psychology*, *61*, 732–742.
- Sidebotham, P., Golding, J., & the ALSPAC Study Team. (2001). Child maltreatment in the “children of the nineties”: A longitudinal study of parental risk factors. *Child Abuse & Neglect*, *25*, 1177–1200.
- Springs, F. E., & Friedrich, W. N. (1992). Health risk behaviors and medical sequelae of childhood sexual abuse. *Mayo Clinic Proceedings*, *67*, 527–532.
- Stahl, S. (2002). Does depression hurt? *Journal of Clinical Psychiatry*, *63*, 273–274.
- Stein, M. B., & Barrett-Connor, E. (2000). Sexual assault and physical health: Findings from a population-based study of older adults. *Psychosomatic Medicine*, *62*, 838–843.
- Talley, N. J., Fett, S. L., & Zinsmeister, A. R. (1995). Self-reported abuse and gastrointestinal disease in outpatients: Association with irritable bowel-type symptoms. *American Journal of Gastroenterology*, *90*, 366–371.
- Thakkar, R., & McCanne, T. (2000). The effects of daily stressors on physical health in women with and without a childhood history of sexual abuse. *Child Abuse & Neglect*, *24*, 209–221.
- Thompson, M. P., Arias, I., Basile, K. C., & Desai, S. (2002). The association between childhood physical and sexual victimization and health problems in adulthood in a nationally representative sample of women. *Journal of Interpersonal Violence*, *17*, 1115–1129.
- Thompson, M. P., Kingree, J. B., & Desai, S. (2004). Gender differences in long-term health consequences of physical abuse of children: Data from a nationally representative survey. *American Journal of Public Health*, *94*, 599–604.
- Turner, H. A., & Muller, P. A. (2004). Long-term effects of child corporal punishment on depressive symptoms in young adults: Potential moderators and mediators. *Journal of Family Issues*, *25*, 761–782.
- Verona, E., & Sachs-Ericsson, N. (2005). The intergenerational transmission of externalizing behaviors in adult participants: The mediating role of childhood abuse. *Journal of Consulting and Clinical Psychology*, *73*, 1135–1145.

- Waldinger, R. J., Schulz, M. S., Barsky, A. J., & Ahern, D. K. (2006). Mapping the road from childhood trauma to adult somatization: The role of attachment. *Psychosomatic Medicine*, *68*, 129–135.
- Walker, E. A., Gelfand, A., Katon, J., Koss, M., Von Korff, M., Bernstein, D., et al. (1999). Adult health status of women with histories of childhood abuse. *American Journal of Medicine*, *107*, 332–339.
- Walsh, C. A., Jamieson, E., MacMillan, H., & Boyle, M. (2007). Child abuse and chronic pain in a community survey of women. *Journal of Interpersonal Violence*, *22*, 1536–1554.
- Williamson, D. F., Thompson, T. J., Anda, R. F., Dietz, W. H., & Felitti, V. (2002). Body weight and obesity in adults and self-reported abuse in childhood. *International Journal of Obesity*, *26*, 1075–1082.
- Wilson, A. E., Calhoun, K. S., & Bernat, J. A. (1999). Risk recognition and trauma-related symptoms among sexually revictimized women. *Journal of Consulting and Clinical Psychology*, *67*, 705–710.
- Yehuda, R., Boissoneau, D., Lowy, M. T., & Giller, E. L. (1995). Dose-response changes in plasma cortisol and lymphocyte glucocorticoid receptors following dexamethasone administration in combat veterans with and without posttraumatic stress disorder. *Archives of General Psychiatry*, *52*, 583–593.
- Zelman, D., Howland, E., Nichols, S., & Cleeland, C. (1991). The effects of induced mood on laboratory pain. *Pain*, *46*, 105–111.
- Zuravin, S. J., & Fontanella, C. (1999). The relationship between child sexual abuse and major depression among low-income women: A function of growing up experiences? *Child Maltreatment*, *4*(1), 3–12.