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Exciting Discoveries on the Health Effects of Family Violence: Where We Are, Where We Need to Go

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In the twenty years since the founding of JIV, there have been exciting new discoveries on the long-term physical health effects of family violence. As exciting as these discoveries have been, we still know little about why *the experience of family violence makes people sick. Some of the most promising areas of study on this topic will be in neuroscience, sleep studies, and cognitive variables such as hostility. Once we understand mechanisms, we can design interventions that can ameliorate these effects.*

The past twenty years have dramatically increased our understanding of the short and long-term effects of family violence. For me, the most exciting development has been what we've learned about the health effects of abuse and trauma. Based on several recent studies, we know that abuse survivors go to the doctor more often, are more likely to use the emergency department, see specialists, use pharmacy services, and have surgery—in our study, twice as often—than their non-abused counterparts (Campbell & Kendall-Tackett, in press; Hulme, 2000; Kendall-Tackett, 2003; Kendall-Tackett, Marshall & Ness, 2000). The burning question is why this occurs. Why are abuse survivors more likely to be sick?

Studies on the Health Effects of Abuse

In documenting the high incidence of illness in abuse survivors, researchers have studied two distinct types: functional illness, such as irritable bowel syndrome, and organic illness, such as diabetes and cancer (Dallam, in press). These studies are described below.

Of the functional chronic pain syndromes, irritable bowel syndrome has been studied the most with regard to past abuse. In samples of patients in treatment for irritable bowel, abuse survivors can comprise 50 to 70 percent (Drossman et al., 1996; Drossman et al., 2000; Leserman et al., 1996). Abuse survivors can also suffer from chronic pain in other parts of the body. Abuse has been related to chronic or recurring headaches, pelvic pain, back pain, or more generalized pain syndromes (Kendall-Tackett, Marshall & Ness, 2003). These findings have been true for both survivors of childhood abuse and for those abused as adults. Patients with these conditions often have marked physiological abnormalities in brain structure and function that are apparent using technology such as PET (positron emission tomography) scans, CT scans and MRIs of the brain (Bremner, in press; Toner et al., 2000).

Health researchers have also examined the connection between family violence and organic illness. There have been several important studies addressing this question. The most notable is the Adverse Childhood Experiences (ACE) study (Fellit et al., 2001). Felitti and colleagues (2001) found that men and women in a large HMO sample who had experienced four or more adverse childhood experiences (ACEs) were significantly more likely to have the following diseases: ischemic heart disease, cancer, diabetes, stroke, skeletal fractures, chronic obstructive pulmonary disease (COPD), chronic bronchitis, and hepatitis. This study was important because it documented a connection between childhood experience and "real" diseases related to mortality. Suddenly, the health effects of family violence were taken more seriously.

What We Need to Learn

What we need know on this topic can be summed up in one word: mechanisms. We do no know why family violence makes its victims sick. But we have some intriguing possibilities, which I describe below.

Neuroscience Research

One important line of research has been in neuroscience. Over the past 20 years, we have learned a tremendous amount about how abuse and trauma alter the brain. For example, several researchers have documented that abuse survivors, particularly those with PTSD, have changes in brain structures such as the hippocampus, anterior frontal cortex, and temporal lobe (Bremner, in press). Bremner (in press) notes that abused children with PTSD have smaller corpus callosi, and their overall brain volumes are also smaller.

The next question we need to ask is: what does this mean? How do these changes translate into mental and physical health problems for people who have them? There is some preliminary evidence that these brain changes correspond to verbal memory deficits, depression, and even borderline personality disorder in adult survivors (Bremner, in press; Vythilingam et al., 2002). But do these brain changes *cause* these problems or merely co-occur with them?

Neuroscience research outside the family violence field has found that patients with conditions such as irritable bowel syndrome have significantly different brain-activation patterns—such as lack of firing of the anterior cingulate cortex (ACC) in response to stimuli-- compared to their well counterparts (Silverman et al., 1997; Toner et al., 2000). The ACC is associated with pain control. When this is not working in response to stimuli, people experience increased amounts of pain. The anterior cingulate cortex has also been found to have aberrant patterns in adult survivors, particularly when processing emotionally laden words (Bremner et al., 2003). Could changes in the ACC be the link between trauma and pain?

Sleep Studies

Another area of interest is sleep. To what extent are health-related effects due to sleep problems and trauma's influence on sleep quality? Abuse survivors often have poor sleep quality. For example, Hulme (2000) in her primary care sample found that 52% of sexually abused women reported that they could not sleep at night (compared to 24% of non-abused women), 36% reported nightmares (compared to 13%), and 53% reported intrusive thoughts of past events (compared to 18%). Aberrant sleep patterns are also common in patients who are depressed or who have PTSD (Kendall-Tackett, 2003). Depression and PTSD may mediate some of the abuse-related health effects because they lead to poor quality sleep. Perhaps a closer look at the types of sleep problems that abuse survivors have will help us to better understand mechanisms by which abuse impairs health.

Hostility

In my mind, some of the more promising research has to do with the cognitive variables related to past abuse. Hostility is one example of a cognitive variable with health implications. Abuse survivors, not surprisingly, are prone to hostility and mistrust of others (Hulme, 2000; Teegen, 1999). Given their experiences, this is certainly understandable. However, the family violence field has not considered how hostility can be related to health problems in adult survivors, and this could be a fruitful area of study. There is a large literature looking specifically at the devastating impact of hostility on health in the general population. For example, a recent review noted that those high in hostility were more prone to cardiac ischemia and constriction of the coronary arteries. Not surprisingly, people high in trait hostility are at higher risk for cardiac events (Smith & Ruiz, 2002). A recent study of teens also found that those high in hostility at time 1 had increased risk for two or more symptoms of metabolic syndrome—the precursor of type II diabetes—at time 2. The symptoms of metabolic syndrome include high body-mass index (BMI), high triglycerides, high HDL cholesterol, insulin resistance, and mean arterial blood pressure. Hostility could be one potent mechanism that increases the risk of health problems, such as type II diabetes, in abuse survivors (Raikkonen, Matthews & Salomon, 2003).

Interestingly, preliminary evidence indicates that abuse survivors' hostile and mistrusting worldview may have a physiological basis. Bremner (in press) has noted that there may be trauma-related brain changes associated with the tendency to misread the intentions of others. Biology might influence what was once thought of as a purely psychological phenomenon. We also know that hostile beliefs also tend to respond well to cognitive therapy. An intriguing question is whether these types of interventions could reverse some of the brain changes associated with past abuse.

Most Promising Methodological Innovation

In my opinion, the most promising technique we now have is neuroimaging. Neuroimaging studies have completely changed our view of the impact of abuse. I hope that expanded use of these techniques will continue to document changes that are due to trauma. But I hope we take the next step and try to connect these changes to clinical outcomes. Unfortunately, the information gleaned from neuroscience studies has presented a pessimistic picture of the effects of abuse. While it is important to document these changes, our quest should not stop there. We should also use these types of studies to guide our interventions and determine whether they are effective. For example, one recent study found that the antidepressant paroxetine (Paxil) increased verbal memory and hippocampal volume in people with PTSD (Vermetten et al., 2003). What other techniques can reverse, or at least attenuate abuse-related effects?

As exciting as these findings are, neuroimaging research is beyond the means of most family violence researchers. Fortunately, options for low-tech research in health effects also exist. These include blood pressure, lipid profiles (e.g., cholesterol, triglycerides), body-mass index, and cardiac reactivity. All of these can be harbingers of disease, and can be related to the psychological variables we typically study.

Let's take, for example, marital strife. Kiecolt-Glaser and Newton (2001), in their review on the health effects of marriage, found that high-stress marriages can have a severe impact on health. It can neutralize or lessen the effectiveness of vaccines, slow wound healing, and increase the risk of infectious disease. Marital conflicts increase blood pressure, which has obvious implications for hypertension and cardiovascular disease. Marital tension seems to have a particularly strong influence on women. In a recent study, Orth-Gomer and colleagues (Orth-Gomer, Wamala, Horsten, Schenck-Gustafsson, Schneiderman, & Mittleman, 2000) followed 292 women for five years after having a heart attack. Women with high levels of marital strife were nearly three times more likely to have another heart attack, or other coronary event, as women who were married but not distressed. Since family violence, either past or present, can increase marital strife, this can be another way that abuse experiences can have a negative impact on health.

In conclusion, some of the most exciting work in family violence research demonstrates that abusive experiences change the body. We also know that people who experience family violence, particularly if severe, are often in poorer health than their non-abused counterparts. Our task for the next 20 years is to understand why this occurs.

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