

## **Chronic Pain Syndromes and Violence Against Women**

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*Chronic pain is a common form of disability, and is often reported among women with a history of victimization. In the present study, we combine six pain symptoms into a measure of self-reported pain, and compare women who have experienced child or domestic abuse with those who do not report such a history. A sample of 110 female patients (57 abused, 53 non-abused controls) was drawn from an adult primary-care practice of 905 patients in a small, affluent, predominantly Caucasian community in northern New England. The subjects ranged in age from 18 to 88 ( $M = 47$ ). Subjects completed a self-administered questionnaire that was used clinically as part of the new-patient work-up. Women who reported either child or domestic abuse were significantly more likely to report pain symptoms than women in the control group. There was no significant difference between women who had experienced domestic abuse vs. child abuse alone. These findings held true even after controlling for depression.*

**Key Words : chronic pain, victimization, child abuse, domestic abuse**

Women who have experienced child or domestic abuse often have poorer health than their non-abused counterparts--and these effects last long after the abuse has ended. These women see doctors more often and have higher patterns of healthcare use. In an HMO sample, Felitti (1991) found that 22% of his sample of child sexual abuse survivors had visited a doctor 10 or more times a year compared with 6% of the non-abused control group. High health care use was also noted in a study of women who had been battered or raped as adults (Koss, Koss & Woodruff, 1991). Severity of the abuse experience was the most powerful predictor of number of physician visits and outpatient costs (Koss et al., 1991).

In addition to office visits, health care use can include hospitalizations and surgery. Women who have experienced child or domestic abuse were also more likely to have had repeated surgeries (Arnold, Rogers & Cook, 1990; Harrop-Griffiths, Katon, Walker, Holm, Russo, & Hickok, 1988; Kendall-Tackett, Marshall, & Ness, 2000).

## **Pain Syndromes**

One factor that might be driving the higher patterns of healthcare use among adult survivors is the increased likelihood of one or more chronic pain syndromes. Chronic pain is a major form of disability, accounting for an estimated \$125 billion each year in health care costs (Okifuji, Turk & Kalauokalani, 1999), and it is common among victims of violence. In one recent study, pain was the most commonly occurring symptom in a community sample of child sexual abuse survivors (Teegan, 1999).

Pain is thought to be more common among survivors of violence because traumatic events appear to physiologically lower their pain thresholds (Kendall-Tackett, 2000). Neurons have the capacity to change function, chemical profile, or structure because of neuronal plasticity. Traumatic events can trigger these physiologic changes, and create a hypersensitivity to subsequent stimuli. Hypersensitivity often translates into increased pain. Some consider this hypersensitivity a major evolutionary advantage, in that it makes an individual more aware of potential danger. However, the increased pain that accompanies hypersensitivity makes day-to-day living difficult for women who have experienced violence (Woolf & Salter, 2000). It can limit the activities that women participate in, inhibit their ability to exercise, work, or perform basic household tasks, and make it difficult to care for children. Chronic pain can also interfere with sleep, making daytime fatigue a problem too. Indeed, chronic pain can influence every aspect of a woman's life.

Various types of pain have been studied with regard to past victimization. These studies are summarized below.

### **Headache, Back Pain, & Pelvic Pain**

Previous studies have also noted high rates of chronic pelvic pain and severe PMS among adults survivors of childhood physical and sexual abuse (Harrop-Griffiths, et al., 1988; Hudson, Goldenberg, Pope, Keck & Schlesinger, 1992; Laws, 1993; Walling, Reiter, O'Hara, Milburn, Lilly, & Vincent, 1994a). Likewise, severe headaches have also been noted among women who had experienced physical, emotional or sexual abuse (Felitti, 1991; Hudson et al., 1992; Walling, O'Hara, Reiter, Milburn, Lilly, & Vincent, 1994b). Childhood abuse has even been related to whether surgery for back pain is successful. In a study of lumbar surgery, patients were questioned about five types of childhood trauma: sexual abuse, physical abuse, emotional abuse, parental substance abuse, and abandonment. Those reporting three or more types of abuse had a surgery failure rate of 85%, compared with a 5% failure rate among those with no history of trauma (Schofferman, Anderson, Hinds, Smith, & White, 1992).

### **Fibromyalgia Syndrome**

Fibromyalgia syndrome (FMS) is chronic pain syndrome characterized by diffuse soft-tissue pain (Boisset-Pioro, Esdaile & Fitzcharles, 1995). Two studies have recently considered the effects of childhood sexual abuse on the developmental of FMS. These

studies found that FMS is *not significantly more likely* among adult survivors of sexual abuse than it is among their non-abused counterparts. However, within the group of patients with FMS, those with a history of past abuse generally had a *worse experience* of the illness. Sexually abused FMS patients reported significantly more symptoms and pain than did non-abused FMS patients (Taylor, Trotter & Csuka, 1995). Conversely, FMS patients were significantly more likely to report physical abuse during child or adulthood, or physical abuse in combination with sexual abuse than were the non-FMS patients (Boisset-Pioro, et al., 1995).

### **Irritable Bowel Syndrome**

Irritable bowel syndrome (IBS) has been the most-studied pain syndrome with regard to past victimization. In four studies that compared patients with IBS to those with organic gastrointestinal illnesses (e.g., ulcerative colitis), patients with IBS were more likely to report a history of threatened sex, incest, forced intercourse and frequent physical abuse than were patients in treatment for organic illness (Drossman, Leserman, Nachman, Li, Gluck, Toomey & Mitchell, 1990; Talley, Fett, & Zinsmeister, 1995; Talley, Fett, Zinsmeister & Melton, 1994; Walker, Katon, Roy-Byrne, Jemelka & Russo, 1993). The numbers are particularly striking in the study by Walker and colleagues. Patients with IBS had higher rates of lifetime sexual victimization (54% vs. 5%), *severe* lifetime sexual trauma (32% vs. 0%), and severe child sexual abuse (11% vs. 0%) than those with organic gastrointestinal illness (Walker et al., 1993). Even though most studies focus on sexual victimization, in one study, women with a history of physical abuse had the worst health outcome (Leserman, Drossman, Li, Toomey, Nachman, & Glogau, 1996). Interestingly, patients whose abuse first occurred in childhood did not have worse health outcomes than those whose abuse first occurred as adults (Leserman et al., 1996).

Do patients report more pain because they are depressed? One recent study investigated the relationship between patient and psychiatric disturbance. Scarinci and colleagues (Scarinci, McDonald-Haile, Bradley, & Richter, 1994) found that IBS patients with a history of abuse had altered sensations of pain. Relative to the non-abused patients, abused patients had significantly lower pain threshold levels in response to finger pressure and significantly lower cognitive standards for judging stimuli as noxious. These results held even after controlling for psychiatric disturbance.

### **Research Questions**

Previous research has done much to increase our understanding of the role of victimization in the development of chronic pain. However, previous studies are limited in that they tend to focus on one type of pain (e.g., irritable bowel syndrome). However, recent research on physiological correlates of past victimization strongly suggests that chronic stressors, such as child- or domestic abuse, may lower the pain threshold overall. When only one type of pain is measured, we may miss the overall occurrence of pain. For example, when we ask only about IBS, but the patient has chronic headaches, we may underestimate the occurrence of pain as a symptom of past abuse. The present study

combines six self-reported pain symptoms into a measure of self-reported pain, and compares women who have experienced child or domestic abuse with those who do not report such a history.

In the present study, we also have an opportunity to examine the relationship between pain and depression. Depression has been noted as a co-occurring symptom with both IBS and fibromyalgia, and is also common among victims of violence. The Scarinci et al. (1994) study described above indicates pain cannot be wholly explained by depression (i.e., depressed patients tending to describe worse symptoms). We can examine reporting of pain symptoms while controlling for self-reported depression.

Finally, since we report data from women who have suffered from child abuse vs. domestic violence, we have an opportunity to examine whether timing of the abuse experiences has any impact on symptoms. At least one previous study found that symptomatology did not differ significantly in those abused during childhood vs. adulthood (Leserman et al., 1996). In the present study, we have an opportunity to compare these two types of abuse.

## **Method**

### **Participants**

A sample of 110 female patients (57 abused, 53 non-abused controls) was drawn from an adult primary-care practice of 905 patients in a small, affluent community in northern New England. All patients in the sample were white. We first identified all patients who answered “yes” to at least one of two questions about either child or domestic abuse. We then gathered our control group of 53 non-abused patients by matching for age with members of the abused group. The subjects ranged in age from 18 to 88 ( $M = 47$ ).

Of the 57 patients in the abused group, 27 indicated that they had experienced physical or sexual abuse as children, 20 indicated that they had experienced domestic abuse as adults, and 10 indicated that they had experienced both child and domestic abuse.

### **Questionnaire**

The questionnaire was a five-page, 169 item, closed-ended, yes-no, self-administered questionnaire that was used clinically as part of the new-patient work-up. The questionnaire included the following: demographic information, past medical history, health maintenance; social history and victimization history (“Were you sexually or physically abused as a child?” and “Have you been the victim of domestic abuse as an adult?”). Depression was one item on a list of symptoms, in a yes/no format.

Six items that asked about pain in our questionnaire were combined into a measure of self-reported pain. These included “abdominal pain,” “pain or stiffness in joints or

muscles,” “pain during urination,” “arthritis,” “back pain,” and “severe headaches. These yes-no questions were scattered throughout the list of symptoms, and reflected a wide variety of chronic pain.

## Results

### Pain Symptoms

When individual symptoms were compared, women who had been victimized were not significantly different from the non-victimized group, but all were in the predicted direction. These results are summarized on Table 1.

**Table 1**

#### Individual Pain Symptoms

Symptom	Abused (n)	Non-abused (n)	<u>chi<sup>2</sup></u>	<u>p</u>
Abdominal pain	14	7	1.85	.174
Pain or stiffness in joints or muscles	28	21	.29	.59
Pain during urination	3	1	*	
Arthritis	19	10	2.57	.109
Back pain	30	21	2.17	.141
Severe headaches	20	16	.465	.495

\* Cell sizes less than five

When the symptoms were combined, a significant difference did emerge. Women who reported either child or domestic abuse reported significantly more pain symptoms ( $M = 2.2$ ;  $F(1,82) = 5.91$ ,  $p < .017$ ) than those women in the control group ( $M = 1.46$ ).

### Depression

Women with a history of victimization were significantly more likely to report depression ( $X^2 = 9.4$ ,  $p < .002$ ) than their non-abused counterparts. When depression was entered as a covariate in the analysis of combined pain symptoms, there was still a significant difference between the women who had experienced victimization versus those who had not ( $F(1,82) = 4.95$ ,  $p < .029$ ).

There was no significant difference in depression between women who had experienced domestic abuse vs. child abuse alone ( $F(2,44) = .975, p = .386$ ).

## Discussion

In the present study, we examined the relationship between past victimization and current reporting of pain symptoms. There were no significant differences between abused and non-abused women in reporting individual symptoms. However, when the symptoms were combined, there were significant differences. Combining these symptoms may have produced a more realistic estimate of occurrence of chronic pain in our sample; individual symptoms may have varied from woman to woman. Women with a history of victimization reported an average of slightly more than two pain symptoms. Some may have reported more musculo-skeletal symptoms such as arthritis and back pain. Others may have reported more localized pain such as abdominal pain and painful urination.

There were no significant differences in symptoms between those abused in childhood vs. adulthood. This was not a complete surprise given the results of the Leserman et al. (1996) study, but it was somewhat surprising when we consider the relative vulnerability of children's vs. adults' brains. Since children's brains are still developing, we would expect more damage to occur if abuse happens during childhood. However, another possibility is that children's brains are more flexible, and may have been able to "re-wire" themselves in such a way that damage was minimized. This issue should also be revisited in future studies.

Chronic pain is also very much a women's health issue. Indeed, the overwhelming majority of patients with conditions such as irritable bowel syndrome, fibromyalgia, and severe recurring headaches are women. Many of these women also have a history of depression and past abuse. And often women are the ones who have their pain symptoms dismissed.

Why does this happen? There are several possible explanations. "Pain" is a highly subjective symptom, and physicians must rely upon patient self-report. Most of the pain syndromes described in previous studies fall under the general heading of "functional" illnesses--meaning that there are no laboratory or radiologic findings that confirm their existence. The lack of concrete lab findings, unfortunately, can also confirm physicians' stereotypes of female patients who use physical symptoms as a ploy for attention and sympathy. While these stereotypes are slowly changing, women patients with vague, subjective symptoms such as pain may have to battle with their care providers to prove that their symptoms are real (Nechas & Foley, 1994).

Chronic pain is also quite resistant to traditional medical treatment, and physicians become frustrated with the lack of progress their patients make. In addition, chronic pain patients are often perceived as irritable and "difficult." All of these factors can contribute to a dismissive attitude by health care providers.

## **Depression and Pain**

The presence of depression was not a surprising finding. As we have reported previously (Kendall et al, 2000), depression is a common symptom of past victimization. In the present study, depression did not account for self-reported pain, but that is not the end of the story. Researchers are beginning to speculate that pain and depression may have a common underlying mechanism. In a study of patients with rheumatoid arthritis (RA), those who had had an episode of major depression, but who were not currently depressed, had worse pain from this organic condition than those who did not (Fifield, Tennen, Reisne, & McQuillan, 1998). Sleep abnormalities may also be involved in the relationship between pain and depression. In another study of RA patients, pain exacerbated sleeping problems, and both were thought to contribute to depression (Nicassio & Wallston, 1992).

Pain and depression share one other commonality. Two of the most effective treatments for depression--antidepressants and cognitive therapy--are also used in the treatment of pain. One way that antidepressants are thought to reduce pain is through regulation of sleep. Sleep disturbances, depression and pain are all related to brain levels of the neurotransmitter serotonin.

## **Study Limitations**

We note some limitations in our study. The questionnaire we used was designed for clinical practice, and was not intended to be used as a research tool. Therefore, some of the questions had some limitations.

First, we may have had under-reporting of abuse history, possibly due to wording of the questions. For example, the question on domestic violence asked patients to identify themselves as “victims of domestic abuse.” We might have had a higher rate of positive response if we had asked if they had ever been hit by a spouse or partner. The child abuse question was limited because it combined physical and sexual abuse. For both questions, we had limited information about the abuse itself including the identity of the perpetrator, the severity of abuse that occurred, the frequency and duration of the abuse experience, and the level of force that was involved. Each of these factors has been found to contribute to the severity of the abuse experience, which has been related to severity of symptoms in past studies (Golding, Cooper, & George, 1997; Leserman, et al. 1996).

The measure of depression was also very limited. It is a single question that asked patients to indicate whether they were depressed. We have no information on severity or length of depression, and this approach relies on patients identifying themselves as depressed. However, even with these limitations, the results are striking, with significantly more people identifying themselves as depressed in the abused than the non-abused group.

## Conclusions

In this study, we found that women who had experienced family violence--as children or adults--were significantly more likely to report a wide variety of pain symptoms. Although depression was three times more likely among the abused women, its effects appear independent of self-reported pain.

There is increasing evidence that indicates that past abuse is one possible cause of chronic pain. In the wake of traumatic or chronically stressful events, the body learns to hyper-respond to stimuli, increasing the experience of pain. Treatment of pain in women with a history of child or domestic abuse should include ways to help the body “un-learn” its dysfunctional way of handling current stressors, thereby reducing their pain.

Relaxation techniques and biofeedback are examples of helping the body un-learn its dysfunctional patterns. When patients experience a body sensation as painful, they are instructed to relax that part of their body, rather than tensing it. Learning to relax the entire body can also help manage pain in a specific part. With biofeedback, patients learn to take conscious control over their bodies’ reactions. In the case of chronic headaches, for example, patients are instructed in how to “move warmth” from the painful part of their body (e.g., their heads), to another part of their body, such as their hands. A machine provides feedback to let them know when they are having the desired reaction. Soon patients can create these responses without the machine. Both of these techniques teach women to be more aware of their bodies, how they work, and what are some of the early warning signs of impending pain.

Another approach involves educating patients who have been through traumatic events about the source of their pain. This can be empowering and validating, letting patients know that their pain is not “all in their heads.” Cognitive therapy can also help in pain reduction. Learning to recognize the cognitive distortions that often accompany chronic pain (e.g., that pain means something is “seriously wrong”) is an important step toward effective pain management. While underlying illness should be checked for and ruled out, learning that their chronic pain exists independent of an underlying illness can slow the cycle of multiple doctors’ appointments, surgeries and treatments, and freeing them find an approach that actually works.

Once adult survivors learn how their abuse experiences may have altered their sense of pain, they are in a position to do something about it. Relaxation techniques, biofeedback, education, and cognitive therapy can be combined with medications, physical therapy, and lifestyle changes. This multi-faceted, mind-body approach can help adult survivors manage pain, one of the most difficult symptoms of past abuse, and move toward healing their lives.

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