

FAMILY ETIOLOGY OF CHRONIC PAIN

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ABSTRACT: The existence of family etiology of chronic pain is at present generally accepted as valid. Some family-related features are commonly witnessed in these patients. Pain patients are often raised by indifferent or abusing parents, submitted to parental pain models and taught a somatic vocabulary to label their emotions.

They are rewarded for pain-behaviors. They communicate principally through illness, pain and complaints. Their familial status rests on the maintenance of the sick role.

DOES FAMILY ETIOLOGY OF CHRONIC PAIN EXIST?

The observation that there are family etiologies for migraine has been accepted by neurologists without real controversy. Peatfield (1981), for example, states that a family history is common in migraine. Other authors (Appenzeller, 1979; Barolin, 1982) refer to hereditary tendencies in migraine. On the other hand, the possible existence of familial etiologies in other chronic pain is a rather recent field of interest. Although Freud mentioned an increased incidence of pain problems in his patients' families, the seminal study in this area is Engel's (1959) work on what he called "pain-prone patients". To the extent that individuals with pain were subjected during their childhood to physical and emotional abuse, a relationship could be drawn between a current pain condition and the way the patients were raised.

During the early sixties, some interest was evident in the study of socio-psychological features of pain patients, such as family size and social class.

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Gonda (1962) found that pain patients came significantly often from large families and hypothesized that the complain of pain could be more common to children with many siblings. Merskey and Spear (1967), however, did not confirm these findings. Merskey (1965) nevertheless found a relationship of chronic pain with low intelligence and low social class in psychiatric patients. He, therefore, argued that these patients were possibly less able to find alternative complaints. Gentry, Shows, and Thomas (1974) confirmed these socio-psychologic data in low-back pain patients.

Twenty years ago began the exploration of the existence of what we now call the familial models for chronic pain (Violon and Giurgea, 1984). Merskey (1965) compared 100 psychiatric patients with persistent pain to 65 psychiatric patients without pain. He demonstrated that the pain sufferers had more painful illness amongst their parents and siblings than those without pain, and an increased frequency of past painful illness themselves. Studying 21 patients with hypochondriasis and depression, Kreitman, Sainsbury, Pearce, and Costain (1965) noted that these patients tended to have illness like those of their mothers more often than the controls; moreover, they had more previous somatic symptoms of illness. In a later study, Merskey and Boyd (1978) emphasized the high frequency of emotionally based pain in 12 patients whose mothers had psychosomatic illness. In Gentry et al's (1974) study with 56 patients with chronic low back pain, some 59% had a life experience including familial models for pain and/or major physical disability, and 23% had significant others who had evidenced chronic low-back pain and had been unresponsive to conventional treatment. However, no comparison with controls was made. Apley (1975) found that children who suffered from recurrent abdominal pain had families that suffered from recurrent pain, recurrent illnesses pseudo-illnesses and psychological problems. Christensen and Mortensen (1975) compared 46 children whose parents had current abdominal symptoms with 70 children whose parents had no abdominal complaints. Abdominal pain was found to occur definitely more frequently in the former than in the latter.

These last studies were all the more powerful as they referred to current pathology in the children and in their parents, and not to the memory of the pain suffered by significant adults when the patients were children themselves. In their examinations of children with psychogenic abdominal pain, Hughes and Zimin (1978) found that the children's families used bodily sensations, medical explanations and surgery to deal with psychological disturbances. Comparing 13 depressive patients with pain with 13 depressive patients without pain, Mohamed, Weisz, and Waring (1978) showed that the former had more pain problems in their own families, their spouses had more pain and even their spouses' families experienced more pain. Moreover, pain experienced by patients and their spouses correlated with an in-

creased marital maladjustment. Blumer and Heilbronn (1981) confirmed the frequency of family models for pain and disability in the early life experience of pain patients searching for relief in a neurosurgical department. Sixty-three percent of their 234 patients reported having a family member or a close friend with a chronic physical handicap or deformity. They, however, did not use controls. In 1981, our student S. Skubiszewski investigated through using anonymous questionnaires with families of students who were not consulting for pain. The group was made up of 18 men and 28 women; the average age was 53.5.

It appeared that 76% of the subjects with current pain had pain sufferers in their family, compared with 45% in the subjects without pain ($p .05$). No other aspects (such as frequency of diseases, surgery, and accidents in the family) were different between the groups, nor was the intensity of the pain complaint and its consequences on mood. Violon and Giurgea (1984) compared a group of 40 chronic pain patients whose pain was ascribed to various causes, to a group of 50 patients with a chronic but pain-free disease. The occurrence of pain in the family of the pain patients appeared far more frequent (78%) than it was in the control group (44%). Comparable results were mentioned by Turkat, Kuczmierczyk, and Adams (1984). A group of 30 headache sufferers reported significantly more immediate family members with headache as compared with 22 controls. Edwards, Zeichner, Kuczmierczyk, and Boczkowski (1985) in a study of 288 students found a significant positive relationship between the number of pain models in an individual's familial environment and the frequency of his/her current pain reports. Recently, in an as of yet unpublished study, I found a significant difference between 100 chronic pain patients and 50 matched controls as to the occurrence of pain in their mothers. Forty-one percent of the pain patients' mothers suffered from pain, compared with 24% in the controls. Noteworthy is the fact that 62% of the pain patients were female. The role of gender in the impact of pain may be quite significant (Edwards, et al, 1985).

Thus the amount of evidence indicating a family history in what we named *algotpathia* (Violon, 1982) now appears considerable. There is indeed powerful statistical evidence concerning the existence of familial etiologies in chronic pain. At this point however, the question arises of the possible explanations for this observation.

FAMILY ETIOLOGY: WHAT ARE THE DETERMINANTS?

Sensitivity

Are there genetic factors playing a role in chronic pain, or in sensitivity to pain? Although very rarely encountered and hardly understood, con-

genital insensitivity to pain in the members of the same family is a well-known pathology (Devor, Inbal, & Govrin-Lippman, 1982; Melzack & Wall, 1982). On the contrary, genetic hypersensitivity to pain has not been described in humans, except in migraine where several authors assume that a genetic predisposition plays a role (Appenzeller, 1979; Barolin, 1982). As to other pain, an inherited sensitivity has been sometimes proposed as a possible explanation (Apley, 1975; Craig, 1980; Edwards et al, 1985; Violon & Giurgea, 1984), but it remains hypothetical. The studies in this field are far from numerous. With rats, Devor et al (1982) and Inbal, Devor, Tuchendler, & Lieblich (1980), have demonstrated that it is possible to genetically select high pain-sensitive and low pain-sensitive strains. Such experiments in human beings are of course not conceivable, and clinical studies are rare.

Apley (1975) reported the frequent association of abdominal pain with autonomic dysfunction in patients and families, suggesting a possible role for genetic factors. Yet Christensen and Mortensen (1975) observed that abdominal pain in their patients was not related to heredity. It did not occur more frequently among children of parents who had suffered from recurrent abdominal pain during childhood than among children of parents without such a pain history. Only the children of parents who were currently complaining appeared more subject to pain.

Every individual of course inherits a nervous system which may possibly be more or less sensitive to pain. To what extent this factor plays a role in chronic pain, at this stage, is not known. Furthermore, as Craig states (1980), the behavioural expression of pain is easier to study than the subjective experience. On the other hand, sensitivity may possibly be related not only to genetics but also to early experiences. Here again, some limited knowledge is available in animals. Morpurgo and Spinelli (1978), and Morpurgo, Gavazzi, Pollin, Amsallem and Lombard (1983) demonstrated that definite changes occur in the brains of kittens when they are repeatedly exposed to painful stimulation during their early development. Indeed, when a limb of the animal is regularly submitted to a nociceptive stimulus, both limbs' representations in the thalamus and in the primary somatosensory cortex become wider than in controls. Would bad treatment during early infancy, like abusing and hitting, be able to generate cerebral modifications? Do battered or deprived children develop a greater sensitivity to pain? At the present stage of knowledge, this question remains pure speculation.

Needs and Rearing Methods

The infant's main needs refer to the maintenance of the homeostasis through the satisfaction of what Maslow (1954) called the physiological

needs and the need for security, and Laborit (1983) the need for gratification and for the maintenance of the gratifying object. Based upon developmental studies it appears necessary to add to Maslow's basic needs such as hunger, thirst and sleep, an additional but fundamental need: the need for bodily contact.

At the beginning of life, every child has two main ways of feeling and expressing his needs (Craig, 1980). The "positive" experiences—satisfaction of the basic needs—are expressed through peculiar vocalizations, movements and mimics, that adults can ascribe to well-being. The "negative" experiences—dissatisfaction of the needs and nociception—are expressed through other particular vocalizations such as screams, appropriate mimics, tears and spastic movements, that the adult attributes to the frustration of the basic needs, to insecurity or to pain. When the child expresses his distress, he normally provokes attention and care-taking (Craig, 1980). Through the reactions that his behavior generates, the child progressively learns how to behave in relationship with his surroundings, tending to repeat the behaviors that are followed by enjoyable results and to avoid the ones with disagreeable consequences. Thus the baby learns very early that pain behavior is a good way of getting rewarded. According to this perspective, the primary gain would be the release from the nociceptive or unpleasant stimulations and the satisfaction of the basic needs. The secondary gain would be to get the attention of the powerful adult, that is to say, the gratifying object. Expressing pain or frustration thus becomes operant very early as a way of coping with the environment.

Unlike the genetic approach, psychological approaches based upon the patient's learning about pain expression in his childhood and later life have received much attention. The relevant learning of pain behavior is perceived to occur early in the individual's life, by conditioning (Craig, 1980; Sternbach, 1974), and to be used operantly in adult life (Fordyce, 1976; Fordyce, Roberts & Sternbach, 1985; Sternbach, 1974, 1983; Weatherhead, 1980). According to Fordyce (1978), if a person who has an initially respondent pain problem lives in an environment which delivers pain-contingent reinforcement, problems of operant pain may evolve. That is the reason why the role of family members in rewarding pain behaviors is often covered in North American chronic pain management programs, by teaching family members to ignore pain behaviors and to reward pain-incompatible healthy behaviors (Tyre & Anderson, 1981). However tempting, due to its clarity and simplicity, a purely behavioral approach has serious limitations. All children indeed scream and cry and almost all parents react to these expressions by caretaking answers. Everybody is, then, during his infancy, subject to an early and strong conditioning to operant pain expression in order to get satisfaction. Nevertheless only a small percentage of

people become pain patients. Why? At this stage it could be useful to introduce a discrimination between three categories of parents.

1. Unconditionally Gratifying Parents

These parents act positively toward their child, taking care of him, satisfying his needs at all times. The child of unconditionally gratifying parents does not need to persist in complaining in order to get rewarded. The reward is "automaticlally" delivered.

2. Conditionally Caretaking Parents

Parents in this category act normally in an indifferent way, which means reduced interactions and few bodily contacts with the child. This behavior may be due to their emotional indifference towards the child, to the fact that they are too busy, or to their poor health. When the child complains, however, they act positively towards him. Thus the child of conditionally-caretaking, normally-indifferent parents has advantage to persist in complaining, which ensures him his needs' satisfaction. The reward is tied to the complaint and to the pain. It is conditional.

3. Hostile Parents

The relationship of these parents with their child is composed of hostility and aggressiveness. The child is treated as an enemy.

These parents abuse and offend their child; they hit him and sometimes abandon him. Thus the child of hostile, abusing parents gets no reward whether he complains or not. Yet, as his needs are frustrated, as he suffers physically and emotionally, he usually persists in complaining for the sake of primary gain. Reared along this way, the children when grown-up frequently become abusers themselves or persist in their life long suffering and complaining. Their complaint about this original lack of gratification is often labelled as pain.

Abused and battered children may certainly become anhedonic and hopeless. A laboratory animal who has learned that his action, whatever it is, has no effect on avoiding punishment is sometimes later unable to escape when he is given the opportunity (Laborit, 1983). This could be called hopelessness in humans. A child reared in this frustrating punitive-hostile environment may learn hopelessness and anhedonia. Many authors have

emphasized the frequency of a miserable childhood amongst their pain patients. Engel considered that punitive or abusive parents were very important in the development of chronic pain with psychological causes. Several years ago, I (Violon, 1973) described patients with chronic benign pain who had unsatisfactory relationships with one parent, usually the mother or her substitute in early life. In the above group of pain-patients, open rejection was found in 57 percent of the cases, with one or both parents hitting, offending or ignoring the child. Some other patients were deprived of affection by the early death of one or both parents. Most of these patients felt rejected by their husband or wife too, and this prior to the onset of pain. I (Violon 1975) have also observed marked absence of affection in pain patients' childhoods.

I (Violon 1980) found this same early lack of gratification and of positive bodily contacts in patients suffering from cluster headache and atypical facial pain. In a 1983 paper, I emphasized that this early affective deprivation was easier to elicit through interviews rather than through questionnaires because of the patients' tendency to deny familial problems. My pain patients, moreover, had significantly more depressed people in their family. Merskey and Boyd (1978) found that pain patients with no lesion had usually rejecting fathers and punishing mothers, but they were few cases. Blumer and Heilbronn (1981) reported that 16 percent of severe pain patients who sought neurosurgical intervention for continuous pain were also physically abused. Their patients tended to deny familial difficulties, but they were usually masochistic, overdependent, and in need of affection. Merskey (1982) expressed some doubts about the existence of a specific family history for chronic pain patients in general, compared to other psychiatric patients. Later, however, he stated that chronic pain without a major physical cause could be seen as a hysterical symptom often related to severe early childhood deprivation (Merskey, 1983). Roy (1982) noted that physically and emotionally abused children may display a defeatist attitude, have difficulty in tolerating success and adopt pain as a permanent means to atone for supposed misdeeds. On the other hand, pain and suffering are preferred to the absence of stimulation (Petrie, 1967). This accounts for mutilation in prisoners, for example. It could also account for self-infliction of pain possibly through unnecessary surgery, which is a characteristic of the so-called intractable pain patient. These patients, like the "homme douloureux" described by Szasz (1968) lead a pain career made of deception, frustration, and antagonism in the patient-doctor relationship, which probably duplicates a negative parent-child relationship. Szasz (1968) pointed out that the pain-career patients also make others suffer, notably their family members who are overwhelmed by the patient's complaints and disabilities.

Cognition-Labeling

Parents and children share the same language. This is true for illness and pain language too (Campbell, 1978). Cultural factors play an indubitable role in the development of pain language (Fabrega & Tyma, 1976), in the conceptualization of the emotions, and in their labelling. This could account for the more frequent complaint of pain rather than of emotional suffering in low social classes (Merskey, 1965).

Craig (1980) mentions that in a child, words for pain are amongst the first learned; however, young children have few words available to describe personal emotional states. Nevertheless, there might remain in the parents themselves a lack of differentiation between bodily and emotional feelings, a confusion between pain and suffering, thus a misnaming that they will teach their children. A dialogue based upon this confusion would be as follows:

- patient who feels lonely, not loved: "I am feeling bad."
- spouse to spouse: "Go to the Doctor."

"I am feeling bad" is used instead of "I am feeling sad (or angry)". This oversimplified dialogue is only an example of what we mean by mislabelling. Most of the time this is an unconscious process, but sometimes somatic expression is used with the secret hope to be emotionally understood. Patients may thus use words referring to pain in order to express their tensions, frustrations, and mental suffering (Fordyce, 1978). This is a regressive language, a kind of return to the infantile indifferentiation of feelings. Moreover, this language referring to the body may be, as Merskey stated, better accepted socially. Families themselves may answer to a mental complaint as if it were referring to the body, as if it were disease and physical pain. In the families of pain children, bodily sensations and medical procedures are used to deal with psychic disturbances (Hughes & Zimin, 1978). Alexithymia (Sifneos, Apfel-Savitz & Frankel, 1977) reflects this inability to conceive and conceptualize one's own emotions and indeed, chronic pain patients have been described either as alexithymic or unable to understand, cope with or express their feelings in words (Blumer & Heilbronn, 1981; Merskey & Spear, 1967; Roy, 1984; Violon, 1973, 1975, 1982 and Violon and Giurgea 1984). The question then arises: Is alexithymia familially transmittable? We suggest it is.

Roles and Modeling

Since early childhood one learns how to behave not only in the family but outside of it, what kind of interactions are allowed or forbidden, what role

he or she is expected to play and the appropriate behavioral codes. The influence of familial operant conditioning on pain behavior has already been discussed. Another way of learning through imitation has been called social modeling (Craig, 1978, 1980; Craig & Prkachin, 1980; Sternbach, 1983). It refers to the powerful influences exerted by a pain patient on others. Observational learning, mimicking of parental behavior, emphatic communication of parental distress are different ways of naming the same phenomenon. When children have witnessed in others pain due to intense, prolonged, or frequent illness, they become predisposed to unusual patterns of pain complaint themselves (Craig, 1978). Ill parents tend to focus on the health problems of their children (Craig, 1980). Children of pain-complaining parents complain more themselves of pain problems. Pain patients have parents more frequently suffering from pain problems. Thus, familial mimicking of pain experience and/or behavior exists as a matter of fact and the sick-role (Gallagher & Wrobel, 1982) can be learned.

The reasons for familial influences on pain can be divided into:

- The function of interactions and communication
- the function of a family role
- the function of conformity to the socio-familial rules

1. The Function of Interactions and Communication

When healthy emotional interactions are restricted in a family system, the choice of interactions centered on illness and pain gain currency. The following example will illustrate this process. Colette A., was a 16-year-old girl with a very rigid, authoritarian father and a dissatisfied, dominated mother. Parents were non-communicative with each other. The father gave the directions and the mother obeyed, suffering silently. Neither open discussion nor aggressiveness was allowed. The girl, who was a very withdrawn and sensitive person, could not cope with the tensions of this situation and began to present with headache, which became so bad that she could not go to school. Her action forced her parents to communicate about her situation, and finally, after numerous futile medical investigations and treatments, they brought her to a psychologist. During family therapy, the parents were led to discuss their own interpersonal difficulties and Colette was released from her go-between position as well as her headache.

2. The Function of a Family Role

Establishment of a status through pain (the sick role) refers to the unconscious concept (paraphrasing Descartes' "Cogito ergo sum"): "I complain,

thus I exist." It can also mean: "I am the best in something, even if it is suffering." When a person has a problem concerning her own value, like when she feels inferior or if she is handicapped, pain and suffering give her status, create meaning in her life (Hart, 1979). Roy (1984) and Tunks and Roy (1982) have reported cases where individuals assume a central place in the family through complaints of unbearable pain. Playing the victim's role may yield some gains, but it also facilitates attainment of socially recognized status. Complaining may be a useful device for drawing the spouse's or children's attention. It also gives power to the sufferer to control everyone's life in his family.

3. *The Function of Conformity to the Socio-Familial Rules*

People in general and patients in particular learn through their education and socio-familial values. They have been taught social and familial mores about what is good and what is bad, what is valid and what is not, thus how they are expected to be and to behave. Most of these rules are unexpressed and even unconscious. However, they govern individual behaviour. In the field of health too these familial values exist also.

The rules may be different for men and women. For women suffering is often viewed as inherent to their condition. If, through reinforcement-punishment and familial modeling, wellness is learned as bad and illness learned as good, the person is prepared to play the victim role and to lead a life of suffering (a pain career). Wellness indeed may be regarded in some families as selfishness or even as an offence. In ancient Greece, people believed that the Eryniae, the goddesses of vengeance, punished those who showed their happiness. In the Christian culture, pain and suffering are invested with a considerable expiatory value. Ng (1980) recognized the necessity of considering wellness as a positive dimension and not merely as the absence of disease and illness. When families teach values, that is not always the case.

Familial etiologies of chronic pain undoubtedly exist. They could be ascribed to at least four categories: sensitivity, needs, cognition, roles, or be described in terms of processes. These processes are not mutually exclusive, and may eventually reinforce each other. The question remains: Which among these processes is necessary for making a chronic pain patient?

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