Perceived Parental Care and Protection as Correlates of Chronic Pain in Adults

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This research was undertaken to explore the significance of care and protection as correlates related to the experience of chronic pain in adults. Chronic pain may affect as many as ten percent of the American population and cost up to a billion dollars a year in treatment costs. It was hypothesized that certain parenting styles are related to the experience of chronic pain in adults.

Thirty male and female patients referred to The Center for Health Psychology and Medicine in Kalamazoo, Michigan who were diagnosed as experiencing chronic pain by a referring physician participated in this study. Each participant underwent a clinical, psycho-social interview and was administered the Millon Clinical Multiaxial Inventory-II (Millon, 1983) and the Parental Bonding Instrument (PBI) (Parker, Tupling, & Brown, 1979). Only the scores from the PBI were used in this study.

All four of the hypotheses were confirmed (p < .05). The results supported the research hypothesis that there is a statistically significant difference in the mean PBI scores between the sample group and the normative population from studies by Parker (1983). The results of this
study demonstrated that perceived parental behaviors and attitudes are important factors to evaluate when treating the experience of chronic pain in adults.

Conclusions and explanations of the results were offered and recommendations for further research were proposed.
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Perceived parental care and protection as correlates of chronic pain in adults

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Western Michigan University, 1992
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CHAPTER I

INTRODUCTION

The Problem for Study

The abundance of literature that exists on chronic pain suggests that the phenomenon is of interest to many and remains a clinical problem which merits continuing examination and discussion. Pain is generally, but not always, an indication that some physical problem or illness has affected a person. Pain is usually defined as an experience that is associated with actual or potential physical damage (Morris, 1991). It can also be described as a sensation which arises when pain receptors are stimulated and transmit neurological messages to the thalamus (Whitehead & Kuhn, 1990). Pain develops initially from the stimulation of the peripheral sensory system, but then can occur without corresponding stimulation of the nerves (Bonica, 1977). It is this transmission to the thalamus that is perceived or experienced as pain.

Professionals who treat pain note that people respond differently to this transmission. Some people seem more sensitive to their experience of chronic pain which causes extreme disruption in their everyday lives. Other patients report little disruption in their activities of daily living.

There is debate as to the true nature of pain (Fordyce, 1978; Hendler, 1982; Melzack, 1980; Wall, 1984). One of the major problems in
identifying and treating pain is that its origins are sometimes unclear. A person who has been injured and has a broken arm, for example, can be diagnosed with X-rays that show the broken bone. The pain can be attributed to the broken bone and soft tissue injury. Professionals treating the individual can assume that pain receptors located in the bone and tissue are being stimulated. In many cases of chronic pain, however, there is no hard physical evidence (X-rays, test results, etc.) to support such an assumption—for example, an individual complaining of low back pain with no documented physical damage (Hendler, 1982). It is sometimes assumed that the physical process causing the pain has not yet been found. At other times, the physical process is known and pain still continues into the chronic stage. Despite the increase in the knowledge of pain, it is still unclear why people with the same diagnosis may respond differently to the same treatment modalities with different levels of pain (Holzman & Turk, 1986; Merskey, 1980; Sternbach, 1976; Wyke, 1981).

There are two longevity-based classifications of pain: acute and chronic. Acute pain is often the result of some injury or tissue damage that is directly related to some specific incident or cause (e.g., a broken arm, surgical lesion). With this type of pain, the treating physician can prescribe a specific modality of treatment. Chronic pain usually begins with some specific acute episode with pain then extends past the expected period of healing. Bonica (1977) recognized chronic pain as that type of pain that lasted past the usual time for disorders to heal. In practice, the major difference between acute and chronic pain is that chronic pain is the
term given to an injury if the pain lasts longer than six months in duration (Crue, 1985). Despite the research on pain, it remains a perplexing mystery. There seems to be no one authority who can offer an exact explanation of its causes or etiology (Morris, 1991).

One possible explanation of chronic pain is to examine chronic pain and its possible relationship to certain psychological variables such as care and protection (Parker, 1979). Thus, this study considered a possible developmental theory that may facilitate an understanding of this relationship and, hence, improve the treatment of those adults who experience chronic pain.

Statement of the Problem

The identification and treatment of chronic pain has been mentioned as a major problem in the literature of health care studies. Many persons who experience chronic pain are convinced that they have only a physical problem and they may be right (Merskey, 1978). However, many theorists and researchers believe that there is an integration of physical and psychological factors which results in the experience of chronic pain (Fordyce, 1976; Pilkowski, 1978; Roy & Tunks, 1982). Chronic pain is viewed as a problem in which multiple elements interact which complicate the diagnosis provided by health professionals, and confuses many patients. Chronic pain has been defined as a specific psychobiological disorder that is composed of physical and psychological variables that are not always readily identifiable (Blumer & Heilbronn, 1982). The definition,
because it is imprecise, can create a confusing situation for both the professional and the patient. Because the biological pathways and centers involved in pain transmission are not well established with certainty, the confusion between the professional and the patient increases.

Chronic pain is usually a subjective experience saturated with the imprint of a specific human culture (Morris, 1991). One theory holds that a person actually can learn how to feel and experience what chronic pain means to them. The term "psychogenic pain" is used to imply that the chronic pain is due primarily to psychological factors. This is an unfortunate use of the term psychogenic. Chronic pain that is psychogenic in nature probably is not experienced any differently from the chronic pain that arises from some clearly physical injury.

However, there continues to be debate as to the true etiology of chronic pain. People who experience chronic pain seem to have difficulty in comprehending why their pain problem is so difficult to treat. They see no reason for their suffering, and they see no function to their pain (Whitehead & Kuhn, 1990). They seek medical and professional help with many questions and expect answers to these complex and confusing questions.

Ideally, the clinician's best tool in assisting patients is helping them understand the various physical and psychological elements that may compose their chronic pain. An understanding of the individual's own pain requires many kinds of knowledge, which crosses various health care disciplines. The variables involved in this identification are not always
easily identified. This can lead to increased frustration in the patient's
every day life and in the relationship with the professional. The evalua-
tion and proper diagnosis of persons with chronic pain and the application
of treatments with appropriate modalities can alleviate a tremendous
amount of anger and frustration patients experience. The importance of
examining the psychogenic variables that are involved in their experience
of pain can assist clinicians in applying the most appropriate treatments
available whether they be medical or psychological.

Theoretical Rationale

An understanding of a patient's experience of chronic pain requires
many kinds of knowledge, both psychological and physical, that may also
be linked to the meaning of pain for the individual (Kuhn, 1985; Merskey,
1978, 1980; Parkes, 1979; Szasz, 1959). In the process of making sense of
these individual meanings or clues, certain questions arise. Are there
certain psycho-pathological processes that may be affecting the client
which may be experienced as pain? In the absence of a clear physical
reason, are there certain psychogenic variables that may be identified that
will assist in a proper diagnosis and treatment? And finally, can certain
developmental variables be important when evaluating the overall vulner-
ability of the chronic pain experience?

Among the developmental factors, there appears to be a specific
question of a predictive relationship between the parent/child bonding
issues of protectiveness and care and the experience of chronic pain in
adults (Blumer & Heilbronn, 1982; Engel, 1959). Other questions raised by the literature are: Is there a relationship between chronic pain and overprotection? Is there a relationship between chronic pain and low care? Is there a relationship between chronic pain and the dual issues of overprotection and low care? The importance of temperament and personal propensities on the part of the parents also are noted as variables that may influence children and have later influence on their experience of chronic pain. For purposes of this study, the developmental variables of care and protection and their relation to parent/child bonding are examined.

The concept of the parent/child bond and the significance of this bond have been noted by many theorists in the literature (Bowlby, 1969; Parker, 1979; Winnicott, 1969). Two major factors have been proposed as the parental contribution to this bond: care and protection (Parker, 1979). The first factor, care, has to do with the idea of warmth and closeness between the child and the parent, the act of touching and responding in a touching way. The second factor is the protective condition and the freedom a child has in seeking autonomy within this protective framework. Parker studied the relationship of parental characteristics to depressive disorders and safety. His primary thesis was that a parent's main role was to create a safe environment in which the child could grow. He noted that these two variables, care and protection, are important in the establishment of both physical and psychological responses to the lack of safety.

Parker's view was that the interaction of these two variables in the
parent/child relationship could predispose a child to later depressive experiences. Parker (1983) noted that the first six months of a child's life are critical for the establishment of meanings that will affect the child in later relations with people. Since the child does not have the appropriate cognitive processes that allow it to make rational decisions, the child relies on its feelings and sensations related to the external stimuli. These experiences have both psychological and physical correlates for the child.

If the child experiences warmth and comfort, the child is more relaxed and less anxious. If the parenting style is harsh, the child may learn to react with anxiety as a protection against perceived harm. Studies have supported the notion that the overprotective parent who controls, infantilizes, and discourages independence "teaches" the child that outcome of any event is independent of actions (Parker, 1979; Seligren, 1975; Skevington, 1983).

Sandler (1960) proposed the idea that pain is a relevant variable in all unpleasant feeling experiences. He postulated the notion that meanings made early in the child's life may result in the formation of a safety mechanism associated with a person's style of parenting. The learned physical and psychological responses to various parenting styles may place the child in a situation that teaches the child to associate pain with the situation. The child may react with a defensive posture for protection. This scenario may promote depression in the child and be associated with pain. The child may react to the pain, later in life, with a combination of physical and psychological responses. In summary, pain may be a func-
tion of a safety response that a person learns. Pain may be associated with low levels of parental care and high levels of parental protection.

The notion of a sense of safety, as part of an infant's developmental process, has been mentioned and developed in the literature (Bowlby, 1988; Joffe & Sandler, 1967; Winnicott, 1971). The primary task of parent/child bonding in a person's developmental history is in allowing children to separate from their mother with a sense of safety when reacting with their environment. This internalization process has been defined as an experience of a psychological birth that allow the child the opportunity to develop a sense of autonomy from the parent (Mahler & Gosling, 1955).

The separation stage establishes a sense of separateness from the parent and forms a relation to a new world of reality in the child (Bowlby, 1969). The child develops an idea of the appropriateness of responding in a safe manner to its environment. He discussed the idea that the child is born with a biological propensity to seek attachment with the mother. The child learns from these early experiences what responses can be made in a safe and self protective manner. The child interprets these experiences and associates internal feelings and emotions to external objects and behaviors. The child learns from these early experiences what responses can be made in a safe and self protective manner. If these early bonding experiences are developed in an environment associated with low parental care and overprotection, the child learns to be over cautious and to develop a sense of self that does not allow for a safe expression of feel-
ings and ideas. These failings are associated with painful feelings.

It is proposed that the child may learn to internalize feelings of pain and failure. Internalization may lead to a learning process wherein the child learns to internalize feelings of pain and failure associated with a lack of autonomous development. These learnings have both physical and psychological properties. The child may not feel safe unless it is in a state of psychobiological readiness. These learned responses may be triggered in a threatening situation. The child may come to rely on this state of readiness as it continues to grow. If these experiences were unpleasant, pain may result and become an important correlate later on in life. The child may not feel safe unless it is in a state of readiness that can be noted, and actually measured, as increased muscle tension. The child may use this learned response in a threatening situation. This style of responding may continue into the child's adult life. Pain may be a result of this learned response to threats in the environment and become part of the chronic pain syndrome (Engel, 1962; Joffe & Sandler, 1965).

The present study determined if a relationship exists between parent/child bonding issues of care and protection, the learned response pattern to perceived threat in their environment, and the experience of chronic pain in their adult life by measuring these variables using a self report instrument.

Significance of the Problem

Many adults and young people in America have problems with
chronic pain. Recent studies have shown that as many as ten percent of the adult population in the United States may have problems with chronic pain (France & Krishnan, 1991). The abundance of literature on chronic pain is an indication that the medical field has a significant problem with identifying the origins of chronic pain and that these origins remain poorly understood and expensive to treat effectively (Blumer & Heilbronn, 1982).

Persons who live with chronic pain are usually convinced that the pain is a physical problem and seek an appropriate medical treatment. Unfortunately, if the medical course of treatment does not identify the cause of these chronic pain experiences, the physician will usually refer the patient to a psychologist for further evaluation and treatment. The physician may not understand the causes of pain signifying that a possible psychological cause may be the problem. The physician may not adequately communicate to the patient or the psychologist the reason for the referral. In reality, communication between the various professionals may break down, leaving the patient in a position where only the psychological variables underlying the pain experiences are examined and other medical variables are ignored. This can lead to a tremendous amount of cost and time on the part of both the patient and the psychologist. It is estimated that treatment for chronic pain costs are in the billions of dollar per year and affects 50 to 75 million people (Bonica, 1974; France & Krishnan, 1987).
There are estimated to be 1200 pain clinics in the United States that deal with the treatment of chronic pain (France & Krishnan, 1987). Despite the high cost of treatment and the variety of treatment programs available it remains unclear why people with the same diagnosis respond differently to the same medical modalities. It is unclear why some treatment modalities work and why other treatment modalities do not.

From the literature review there remain many questions as to the cause and reasons behind chronic pain. The significance of this study was to provide data which may challenge the professional who deals with chronic pain patients to examine the psychological and developmental variables that may be affecting the persons experience of chronic pain.

Definitions of Terms

The following terms will be used throughout the research:

**Pain:** Defined by Stedman's Medical Dictionary (Stedman, 1982) as: “an unpleasant sensory and emotional experience associated with, or described in terms of, actual or potential tissue damage.” (p. 1015).

**Acute Pain:** Pain as a result of some injury or tissue damage that is directly related to some specific incident or cause (e.g., a broken arm, a surgical lesion) that has an expected time frame.

**Chronic Pain:** Pain that is perceived beyond the expected period of healing of an injury or pain that extends for lengthy periods of time in association with a chronic condition (e.g., age-related back pain from degenerative changes in the spine) (Turk & Rudy, 1987). Chronic pain
refers to pain lasting more than six months (Crue, 1985).

**Care:** Behavior on the part of the parent which give comfort to the child (Henderson, 1974). Henderson suggests that care-eliciting behaviors have their origin in the attachment behaviors of infancy. He distinguishes normal and pathological care-eliciting behaviors and that both are important in bringing significant others in closer proximity.

**Protection:** Parental behavior which manifests itself in contact with the child. Overprotection refers to parental behaviors of excessive contact, infantilization, prevention of independent behavior, and an excess of parental control (Levy, 1943; Parker, 1979).

**Impairment:** Anatomical, functional, or mental abnormality that is quantifiable.

**Pain behavior:** Verbal or non-verbal actions understood by observers to indicate that an individual may be experiencing pain and suffering. These actions may include facial expressions, audible complaints, abnormal postures and gait, and avoidance of activities.

**Chronic pain syndrome:** Deterioration in physical, social, and psychological functioning in people experiencing prolonged pain (Turk & Rudy, 1987).

**Limitations of the Study**

A number of limitations exist in the present study. A primary problem in the study was the lack of control over the independent variables. There may be many variables that are involved in the developmen-
tal history of an adult that can be part of the etiology of chronic pain. The data in this study were as found with no opportunity to arrange the conditions that may have influenced the subjects.

The selection of subjects from the metropolitan Kalamazoo, Michigan region may limit the validity of the data and generalization of the findings to other geographic areas, especially larger cities with a greater number of adults with chronic pain.

An important problem with operationally defining care and protection as two variables used in the present study will affect the correlation between the developmental variables and the experience of chronic pain. If a relationship between these two variables is found, determining which is the cause and which is the effect is impossible.

A comparative study in a natural situation does not allow controlled selection of the subjects. Selection of the subjects in the present study was not random or controlled and affected the empiricism of the data.

Summary

In Chapter I the phenomenon of chronic pain was discussed. The problem with identification of the causes of chronic pain in adults was discussed as a significant problem in the fields of medicine and psychology. The literature on this topic is divided on what are the exact causes of chronic pain. The literature suggests that the causes could be rooted in physical or psychogenic areas, or in a combination of the two. The purpose of the study was discussed and research questions related to various
hypotheses were stated. Finally, terms were defined and limitations of the study were noted.

The remaining chapters of this study are organized in the following manner. Chapter II is a review of the selected literature in accordance with the purposes and methods described in Chapter I. Chapter III describes the method for assessing the variables of care and protection. Chapter IV discusses the results of the study and Chapter V offers a summary and conclusion of the study.
CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

Theoretical Foundations

The evolution of the parent/child bond has attracted much theoretical and research interest in the past (Ainsworth, 1973). Realization of the tremendous importance of this bond has been prominent in the works of many theorists (Parker, 1983).

Klein (1932) mentioned the notion that there appeared to be more in the infant's relationship to its mother than just the satisfaction of physiological needs. The combination of psychological and physiological learning that the child experiences during attachment is prominent in Klein's work. This combination may become associated with future problems in its adult life. Klein's assumption of a highly articulated inborn ego developing complex patterns of motive and affect seems important, in that it allows the child to develop defense structures for later life. She mentioned that early parent and child interactions are important to an individual later on in life.

Mahler and Goslinger (1955) mentioned the term separation/individuation to describe a process that occurs early in childhood. Through this process the child may form a battery of defense mechanisms that include both psychological and physiological features.
The attachment and separation phases of the parent/child bond seem to be both psychological and physiological mechanisms (Parker, 1983). It is plausible to suggest that the child, helpless at birth, may be equipped with a mechanism that allows it to bond with its mother. This same mechanism may be involved in the separation or detachment later on in its development. This mechanism, which functions so adequately early on, becomes an important process that promotes safety while the child moves through progressive socialization. Among the theorists, the attachment phase seems to be more prominent in their notions of development (Parker, 1983).

Bowlby (1969) discussed the origin, function, and development of social interaction behaviors in the human infant. His “attachment theory” is based on the idea that a human is born with a stable system of behavior which operates to promote sufficient proximity to the caretaker. The need for protection, and the child’s effort to ensure that its needs are met, is the dominant motivation for the child’s behavior.

The attachment or bonding between child and caretaker provides the main arena for learning many different kinds of behavior, and creates the potential for social adaptability. Attachment theory suggests that the child will learn which behaviors will bring it into a protective relationship with the mother or caretaker. The manner in which the caretaker responds to the growing child and the bonding influences that occur affect the way the child learns to achieve the proximity needed for appropriate development. The greater caregiver acceptance and responsiveness to the
child's variety of approaches, the greater the potential the child has to learn about itself and its emotions. If the child is approached with an appropriate mix of nurturance and safety, the child learns to react in a positive manner to safe environmental stimuli when presented.

Sandler (1960) postulated the notion that representations or meanings that a child constructs early on in its developmental history enable it to organize and structure sensations in a meaningful way. Sensations arising from the child's own body, through interactions with the environment, may result in the formation of a safety mechanism associated with external stimuli. This perception may be an active process where the child's ego transforms raw sensory data into meaningful percepts. This process may allow the child to create meanings of their internal and external environments.

In the course of development, the child may learn to react to these representations or meanings about his environment with both psychological and physiological responses that may be thought of as a psychobiological mechanism of feedback. The child may use this psychobiological mechanism as a safety device that may protect it from perceived harm in its environment. The child may form a basic affective response that has roots in both the psychological and physiological areas which may be relayed as a specific response to feelings, such as helplessness. These responses may have associations with experiences in the early bonding process with a child's parents.

If this bonding process was constructed with the notion that the
child was not safe, the resulting defensive reaction may be a direct response to the pain associated with the earlier circumstances or events. These events have both physical and psychological meanings for the child. Pain may be a variable that was associated with events early on in its developmental history. These events may have physical and psychological properties for the child. The various stimuli in the child's environment may cause the child to react with a defensive mechanism. This response will not be limited to only one particular stimuli. The child may learn that a safe response to the "pain" may be, what I refer to, as a psychobiological "armor" that will protect it from perceived danger.

This armoring response may involve physiological processes, such as muscle tensing, increased blood pressure, and sweating. Theoretically, the pain stimuli may be either emotional or physical in nature. The child would experience the pain. The meanings associated with the pain would lead the child to respond in a psychobiological manner for protection and safety.

Joffe and Sandler (1967) discussed pain as a general element in all unpleasant feeling states, and did not restrict the pain to a particular feeling quality only associated with physical pain. They formulated an idea that pain is, in fact, a feeling state that plays a central role in an individual's development. In their studies of unhappy children who share mental and physical characteristics, Joffe and Sandler noted a need to distinguish between groups of unhappy children who share outward protest and groups of unhappy children who appear withdrawn, bored, and
listless. They suggested this latter group demonstrated a basic depressive affective response. Joffe and Sandler mentioned that undischarged or inhibited aggression plays a significant role in the development of the listless child. This listlessness appeared in different personality types and clinical conditions. Listlessness, or the depressive affective response, was noted at various stages of development and associated with a variety of other symptoms (Abramson, Selgran, & Teasdale, 1978; Beutler, Engle, Oro-Beutler, & Daldrup, 1986).

Joffe and Sandler (1965) discussed this basic depressive affective response as a defense against underdischarged aggression, and as fundamentally physical and psychological in nature. They mentioned the roots of the anxiety as an ultimate reaction to the experience of helplessness in the face of physical and psychological pain, of one form or another.

This depressive response is one which could occur at any time in a person's life span. It is a particular response to a feeling of being unable to restore a wished-for state, either physical or psychological. This response indicates a state of discrepancy between an existing state of the object world and a wished-for ideal state (Sandler & Rosenblatt, 1962). (The ideal state is one of safety and security—the opposite of pain and anxiety).

From Sandler's point of view, this reaction is a response to both the physical and psychological pain engendered by a particular circumstance, such as the loss of a love object (Sandler, 1960). When mental and physical processes go well, they lead to a state of well being. When something,
for whatever reason, begins to go wrong, this state is disrupted and replaced by less pleasant sensations (Abramson et al., 1978). A possible reaction to these unpleasant sensations may be an "armoring" within the child's body. This armoring may occur as a protective mechanism, enabling the child to deal with the physical sensations associated with the experience of the parent's undercare or overprotectiveness. The child may begin to relate to these physical feelings as a truer, safer state. The child is "protected" from the experience. The repeated association of safety with muscle tension may cause a chronic "armoring" of the child's body and be learned as a natural safe state (Sandler, 1960). This psychobiological mechanism may begin early on in the child's bonding process with its parents. The style of parenting may be an important aspect in the formation (or lack) of this "armoring" process.

Parent/Child Bonding Variables

The concept of the parent/child bond and the significance of this bond has been noted by many theorists in the literature. Two major factors have been proposed as the parental contribution to this bond: care and protection (Parker, 1979). The first factor, care, has to do with the idea of warmth and closeness between the child and the parent, the act of touching and responding in a touching way. The second factor refers to protective conditioning and the freedom a child has in seeking autonomy within this protective framework. This developmental process is continuous and these variables are not mutually exclusive from other develop-
mental variables.

Parker (1979) studied the relationship of parental characteristics to depressive disorders and safety. His major thesis was that a parent's most important role was to create a safe environment in which the child could grow. He hypothesized the two variables in the developmental arena of parent/child bonding: care and protection. He noted that these two variables are important in the establishment of both physical and psychological responses to safety.

Parker's view was that the interaction between these two variables in the parent/child relationship could predispose a child to later depression. His opinion is cited in a literature review by Becker (1974). Although Becker noted many methodological concerns in the studies performed on parent/child bonding issues, he did suggest that the problem had empirical implications for a wider population, not only for people with chronic pain or depression. Parker (1979) mentioned the results of a study that pointed to the notion that the overprotective parent who controls, infantilizes, and discourages independence "teaches" the child that the outcome of any event is independent of his actions. This belief may promote depression. In summary, Parker reported that neurotic depressive disorders and non-clinical depression in a normal group are associated with reported low levels of parental care and high levels of parental overprotectiveness.

Given these circumstances of parenting, a child may learn specific psychological and physiological responses that form a psychobiological
mechanism when reared in a style of parenting composed of low care and high protection. The initial stimuli present in the child’s environment included both internal and external variables. The meanings made of these stimuli may cause a reaction that would probably have both physical and emotional components. The initiation of this mechanism could possibly be “triggered” by either physically and/or emotionally painful stimuli.

Later on in life the adult may experience an episode of chronic pain. This protective mechanism may cause the adult to protect itself with an armoring response that, in fact, may increase the experience of pain. The result would be a “vicious cycle” where the adult continues to defensively armor against the painful stimuli, which in turn increases the experience of pain (the stimuli). The resulting emotional reactions to living with pain (depression, frustration, anger) could, in fact, increase the persons use of this mechanism and continue to cause an increase in pain.

With this in mind, the following instrument may be helpful in identifying possible parenting styles that may be associated with the experience of chronic pain. Parker, Tupling and Brown (1979) developed the Parental Bonding Instrument (PBI) as a tool to study reported care and overprotection given by parents. This tool, shown in studies, can be utilized in the generalization of results from one population to another. Parker admitted that the tool measured only perceived views, as opposed to actual behaviors of the parent, but, made the case that an individual’s perception of its parents’ rearing attitudes can facilitate an understanding
of the elements that contributed to the development of its safety mechanism. This, in turn, can be helpful in diagnosis and treatment of the individual's complaints.

Other Relevant Literature

Another area of interest in the study of chronic pain is its relationship to depression. This relationship is not addressed in this study. I have included this review of the literature for the possibility of further study.

Chronic Pain and Depression

Chronic pain has remained a vaguely defined condition for a number of years (Melzack, 1980). There is limited agreement as to its nature and treatment. A review of current literature indicates there has been a shift from the consideration of only physical conditions to the inclusion of measuring psychological factors (Bradley, 1963; Holzman & Turk, 1986; Magni & de Bertolini, 1983; Sternbach, 1976; Swanson, 1984; Wall, 1979; Walters, 1961). Attention has been directed toward the identification of psychological factors involved in the chronic pain syndrome (Turner & Chapman, 1982).

Depression has been considered a major variable in the development of chronic pain (Blumer & Heilbronn, 1981; Fordyce, 1976; Sternbach, 1974), and literature is abundant on the relationship between the two (France & Krishnan, 1985; France, Krishnan, Houpt, & Maltbie,
1985; Lascelles, 1966; Magni, 1987). While depression has been observed to be associated with the experience of chronic pain in adults by many researchers (Forrest & Wolkind, 1974; Romano & Turner, 1985), there remains disagreement on exactly how the two are linked. At one end of the continuum, some theorists support the notion that chronic pain in the absence of organic pathology is always suggestive of the presence of a depressive disorder (Blumer & Heilbronn, 1982). At the other end of the continuum, some authors state that depression occurs relatively rarely in chronic pain patients (Pilkowsky, Chapman, & Bonica, 1977).

Hendler (1984) considered depression to be a normal component of the experience of people with chronic pain. He mentioned research that showed evidence that almost all people with chronic pain will go through a period of depression. Whether the depression preceded the chronic pain, or vice versa, remains an unanswered question in the study of chronic pain.

Blumer and Heilbronn (1982) viewed chronic pain as a variant of a depressive disorder. The authors stated that chronic pain can be seen as a prime expression of a masked depressive state. Their paper went into great detail about the identification of chronic pain as a well-defined psychobiological disorder. They termed this syndrome the "pain prone disorder" and viewed this disorder as a variant form of a depressive disorder. They referred to the differences between physical and psychogenic pain, the latter term given to those types of chronic pain in which no apparent physical condition can satisfactorily explain an individual's pain.
Lopez-Ibor (1972) also suggested that pain is a variant form of a masked depression. In his discussion he identified pain as the most significant example of masked depression. Lopez-Ibor mentioned that depression becomes masked as early as adolescence, and hampers the maturation of the personality. Lesse (1968) used the term “multivariant mask” as a description of depression and supported the notion that pain may be a variant form of depression.

In the absence of a clear physical explanation for a patient’s pain, Engel (1959) hypothesized that some psychological process was at work. He studied the similarities among chronic pain patients, and found these patients to have certain characteristics such as low affect, depression, and the inability to express intense emotion. From his work with pain patients, there emerged a profile of the “pain prone patient.” He scrutinized the ways which these patients described the pain and concluded that the experience of pain was never neutral for them, but an unpleasant experience associated with a host of unpleasant feelings. He categorized these feelings as aggression, perceived loss of power and safety, and a threatened loss of a loved one.

Blumer and Heilbronn (1982) extended Engel’s concept by identifying the “pain prone disorder.” These authors discussed in detail the depressive quality of the individuals they studied. Their conclusion was that pain is a synchronous expression of the depressive disorder. Pain may be a deviant form of depression. Certain characteristics were noted in this
article as diagnostic criteria for the pain prone disorder. These symptoms include: continuous pain, denial of emotional difficulties, sleep disturbances, and the inability to tolerate success or happiness. Blumer and Heilbronn cited that clients suffering chronic pain report symptoms similar to those of depressed clients and share certain psychological characteristics with them.

The extent to which chronic pain and depression are related remains an open topic for discussion among researchers. The direction of a relationship between chronic pain and depression seems to be an unanswerable question at this point in the research. From the literature, there may be a connection between depression and chronic pain, and there may be an interaction of physical and psychological factors involved in the group referred to as “pain prone patients” (Engel, 1959). What this relationship is will probably remain a major topic in the near future.

Certain questions arise from the literature addressing the relationship between chronic pain and psychogenic variables. Some of these questions are important when studying this relationship. Is there some central biochemical mechanism involved in the maintenance of well-being and safety? Can developmental and psychological factors, such as an individual's efforts to have safety needs met, alter biochemistry? If such a mechanism does exist, what factors are important to this mechanism?

The exact psychobiological mechanism that is affected by these developmental variables is unknown at this time. The problem of chronic pain and a possible relationship to depression remains a correlation that
is not strongly established. The literature pertaining to developmental processes may prove to offer more insight.
CHAPTER III

METHOD

Introduction

The study was designed to determine if a possible relationship exists between developmental variables of care and protection as measured by a self-reporting instrument, the Parental Bonding Instrument (PBI) (Parker et al., 1979), and the experience of chronic pain in a sample of adults. The hypothesis of this research is that such a relationship exists. To test this possible relationship, adults diagnosed as chronic pain patients were given the PBI to complete for each parent. Results of the PBI were compared to normative data completed by Parker (1983).

A retrospective, causal-comparative research method (Isaac & Michael, 1989) was employed to study the relationship between developmental variables of care and protection and the experience of chronic pain in adults. The principal characteristic of this design is its “ex post facto” nature. An “ex post facto” approach allows for data to be collected after all the events of interest have occurred and when it is not possible to control and manipulate the factors necessary to study any cause-and-effect relations of the variables (Isaac & Michael, 1989). The proposal for this research project was approved by the Human Subjects Institutional Review Board (see Appendix B) prior to the study.
Population and Sample

The subjects for this study consisted of 30 adults diagnosed by physicians as experiencing chronic pain and referred for an evaluation of their chronic pain problems to the Center for Health Psychology and Medicine. The sample population consisted of both male and female subjects, with their ages ranging from 18 to 60 years of age. The retrospective study was conducted on 30 subjects who underwent a clinical interview and who completed the PBI. No non-pain patients participated in this retrospective study.

Research Instrument

Parental Bonding Instrument

The PBI was used specifically as a measurement of the independent variable in this study. The instrument is based on the assumption that care and protection are major dimensions of parental behavior influencing the development of the child. The PBI was developed as a self-report scale measuring perceived parental care and protection (Parker et al., 1979). The protection scale has items suggesting control, overprotection, intrusion, excessive contact, infantilization, prevention of independent behavior which loads high on protection, and items suggesting encouragement of independence which loads low on protection. Parker (1983) has suggested that the PBI is of acceptable validity as a measure of actual, and not merely perceived, parental characteristics. High reliability for the PBI has
been demonstrated by Parker in test-retest of clinical studies with depressed and non-depressed subjects on both the care and the protection scales (Parker, 1979). The patient studies by Parker lead to two important conclusions: High reliability for the PBI has been demonstrated, and the PBI has been shown to be reliable in a clinical setting ($r= 0.77$ on the care scale; $r= 0.78$ on the protection scale) (Parker, 1979). The validity of the PBI was demonstrated by the degree to which the PBI corresponded with semi-structured interview questions assessing parental care and overprotection ($r=0.76$ on the care scale; $0.87$ on the protection scale). It was concluded that the PBI is of acceptable validity as a measure of perceived parental characteristics (Parker, 1983).

Data Collection and Recording

This research was a retrospective study of subjects diagnosed as experiencing chronic pain who had undergone a clinical interview consisting of a developmental history, psycho-social questions, a thorough medical history and a pain experience questionnaire. The PBI was administered, scored and placed in a separate file than the rest of the evaluation information. Although each subject underwent a through clinical evaluation, only the PBI scores were used in this study. Patients were asked to fill out a PBI for each parent (or parent-figure) resulting in four separate scores for each subject in this study. These scores were for maternal care, maternal protection, paternal care, and paternal protection. Each subject understood the purpose of this instrument and the purpose for their
The completion of the instrument. No identifying information was placed on the instrument for confidentiality reasons.

**Data Processing and Analysis**

Each PBI was scored and two different scores, one for protection and one for care, were calculated for both parents of each subject. The score for each respondent was plotted separately for mothers and fathers on axes measuring care and protection and placed on a scatter diagram with the X variable (care) represented on the abscissa and the Y variable (protection) represented along the ordinate (see Figure 1).

The variables were intersected at the mean scores for the two scales from normative studies by Parker (1979). This procedure allowed the PBI to be used as an instrument measuring bonding and allowed the researcher to view four broad styles of parenting. The first style of parenting is conceptualized as affectionless control. This style represents low care and high protection variables. The second style is called affectionate constraint and is composed of the variables of high care and high protection. The third style is classified as neglectful parenting and consists of low care and low protection variables. The fourth style is called optimal parenting and consists of high care and low protection variables (Parker, Fairley, Greenwood, Jurd, & Silove, 1982).
Figure 1. The Four Quadrants Allowed by the PBI When the X Variable (Care) is Represented on the Abscissa and the Y Variable (Protection) is Represented on the Ordinate.

For mothers, the normative mean care score was 27.0 and the mean protection score was 13.5. For fathers, the mean care score was 24.0 and the mean protection score was 12.5 (Parker, 1979). The individual data were transformed into $t$ scores. A series of $t$ tests (Spence, Cotton, Underwood, & Duncan, 1976) were completed to determine the significance of the difference between the means of the sample population and the means scores of the population noted in the normative studies with regard to the care and protections scales (Parker et al., 1979).

Research Questions

The first research question for this study is: Are low parental care and high parental protection significantly related to the experience of
chronic pain in adults?

The second research question for this study is: Do chronic pain patients have significantly different scores on the care and protection scales than the general population?

The independent variables for this study are the scores on the care and protection scales, as noted by the subject, on the PBI. The dependent variable for this study is the experience of chronic pain as diagnosed by the subjects' physician.

Research Hypotheses in the Null Form

HO1: There will be no significant differences between perceived attitudes and behaviors of mothers, as noted by adults experiencing chronic pain, and scores from the adults population of the normative studies, in regard to scores on the care scale, as measured by the PBI (Parker et al., 1979).

HO2: There will be no significant differences between perceived attitudes and behaviors of mothers, as noted by adults experiencing chronic pain and scores from the adult population of the normative studies, in regard to scores on the protection scale, as measured by the PBI.

HO3: There will be no significant differences between perceived attitudes and behaviors of fathers, as noted by adults experiencing chronic pain and scores from the adult population of the normative studies, with respect to scores on the care scale, as measured by the PBI.

HO4: There will be no significant differences between perceived
attitudes and behaviors of fathers, as noted by adults experiencing chronic pain and scores from the adults population of the normative studies, in regard to scores on the protection scale, as measured by the PBI.
CHAPTER IV

RESULTS

Sample Description

Thirty adults diagnosed as experiencing chronic pain by a referring physician were selected from patients referred to the Center for Health Psychology and Medicine located in Kalamazoo, Michigan. Each patient underwent a thorough clinical interview, administration of the Millon clinical Multiaxial Inventory-II (MCMI-II) (Millon, 1983), and the Parental Bonding Instrument (PBI) (Parker et al., 1979). The patients were over 18 years of age and included males and females. No other demographic data were collected to protect the confidentiality of the patients. Only the information from the PBI was used in the present study.

The individual scores (see Appendix C) from the sample group were used to develop a scatter diagram showing the scores in relation to four broad categories of parenting. The mean scores obtained from the sample group on the PBI were compared to the mean scores from normative studies on the PBI by Parker (1983) to determine the significance of the variables in the experience of chronic pain in adults.

In the following section the findings of this study on adults experiencing chronic pain and a possible significant relationship to the Care and Protection Scales on the PBI is discussed.
The first research question of this study was: Is low parental care and high parental protection significantly related to the experience of chronic pain in adults?

In order to show a possible relationship between adults experiencing chronic pain and the developmental variables of care and protection as measured by the PBI, a scatter diagram was employed. The X variable (care) is represented along the abscissa and the Y variable (protection) is represented along the ordinate. Normative data from the studies by Parker (1983) have been used to create quadrants by intersecting the two scales at the normative means. For mothers, the mean care score is 27.0 and the mean protection score is 13.5. For the fathers, the mean care score 24.0 and the mean protection score is 12.5. This procedure allowed the PBI to be used as a measure of bonding showing four broad categories of parenting (see Figure 1): Quadrant 1—low care and high protection, affectionless control; Quadrant II—high care and high protection, affectionate constraint; Quadrant III—low care and low protection, neglectful parenting; Quadrant IV—high care and low protection, optimal parenting (Parker et al., 1982).

Table 1 presents the descriptive statistics and the t values reflecting the subjects' perceived values of parental behaviors and attitudes as measured on the PBI.
Table 1

Descriptive Statistics and $t$ Values Reflecting Subjects' Perceived Values of Parental Behaviors and Attitudes as Measured on the PBI and Those $t$ Values of the Normative Population, as Measured on the PBI

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Pop Mean</th>
<th>Samp Pop</th>
<th>$t$ Stat</th>
<th>Sig at .05</th>
</tr>
</thead>
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<tr>
<td>Mother/Care</td>
<td>26.9</td>
<td>21.83</td>
<td>7.3</td>
<td>-3.80154</td>
<td>.000341</td>
</tr>
<tr>
<td>Mother/Protection</td>
<td>13.5</td>
<td>17.5</td>
<td>7.4</td>
<td>2.96066</td>
<td>.00303</td>
</tr>
<tr>
<td>Father/Care</td>
<td>24.0</td>
<td>16.266</td>
<td>7.6</td>
<td>-5.57332</td>
<td>.000002</td>
</tr>
<tr>
<td>Father/Protection</td>
<td>12.5</td>
<td>15.133</td>
<td>7.4</td>
<td>1.94910</td>
<td>.03051</td>
</tr>
</tbody>
</table>

$p=.05$

Values based on 29 df (30-1)

In Table 2, the results of this procedure are shown when individual scores taken from the sample group for mothers are plotted on the scatter diagram. The findings of this analysis demonstrate that there is a tendency for the majority of participants (50%) to fall into Quadrant I, low care and high protection (affectionless control).

In Table 3, the results of the individual sample scores on the PBI in regards for their fathers are shown. Results show that there is a tendency for the majority of scores (48%) to fall into Quadrant I, low care and high protection (affectionless control).
Table 2

Scatter Diagram Showing Both Male and Female Scores on the PBI Scales of Care and Protection in Regard to Perceived Behaviors and Attitudes of Their Mothers

Abscissa and Ordinate Intersected at the Mean Scores (Care-27, Protection-13.5) from Normative Studies by Parker (1983).
Table 3

Scatter Diagram Showing Both Male and Female Scores on the PBI Scales of Care and Protection in Regard to Perceived Behaviors and Attitudes of Their Fathers

Abscissa and Ordinate Intersected at the Mean Scores (Care-24, Protection-12.5) from Normative Studies by Parker 1983.)

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Results of this procedure support the idea proposed in the literature that perceived attitudes and behaviors of low care and high protection are important correlates in the experience of chronic pain in adults.

The second research question for this study was: Do chronic pain patients have significantly different scores on the care and protection scales of the PBI than those of the general population. The question was developed and stated in the form of null and alternative hypotheses. Findings related to the analysis of the data on the null and alternative hypotheses are presented in the following sections.

**Null Hypothesis 1**

There will be no significant difference between perceived attitudes and behaviors about their mothers, as noted by adults experiencing chronic pain, as measured on the care scale of the Parental Bonding Instrument (PBI) and those scores, as noted by the normative population, on the care scale as measured on the PBI.

A $t$ test (Spence, Cotton, Underwood, & Duncan, 1976) was employed to determine what significance may exist between PBI scores from an adult pain sample and PBI scores from the normative population.

A $t$ statistic of -3.80154 was obtained at the .05 level of significance for the maternal care scores on the PBI. The findings of this analysis proved to be significant ($p=.000341$) and indicated that the null hypothesis should be rejected and the alternative hypothesis accepted. Thus, there is a significant relationship between a subjects' perceived level of low mater-
nal care and their experience of chronic pain. The analysis of these data is shown in Table 1.

**Null Hypothesis 2**

There will be no significant differences between perceived attitudes and behaviors about their mothers, as noted by adults experiencing chronic pain, as measured on the protection scales of the PBI and those scores, as noted by the normative population, on the protection scales of the PBI.

A $t$ test was employed to determine what significance may exist between the sample mean score on the PBI from adults experiencing chronic pain sample and mean scores form the PBI scores for the normative population. A $t$ statistic of 2.96066 was obtained at the .05 level of significance. The findings of this analysis proved to be significant ($p=.00303$) and indicated that the null hypothesis should be rejected and the alternative hypothesis should be accepted. Results show that there is a significant relationship between subjects' perceived levels of maternal protection and their experience of chronic pain. The analysis of these data is shown in Table 1.

**Null Hypothesis 3**

There will be no significant differences between perceived attitudes and behaviors about their fathers, as noted by adults experiencing chronic pain, as measured on the care scale of the PBI and those scores of the
normative population on the care scale as measured by the PBI.

A $t$ test was employed to determine what significance may exist between the mean PBI score from the sample of patients with chronic pain and the mean PBI scores for the normative population. A $t$ of -5.57332 was obtained. The findings of this analysis proved to be significant ($p=.000002$) at the .05 level and indicated that the null hypothesis should be rejected and the alternative hypothesis should be accepted. Results show that there is a significant relationship between the subjects' perceived levels of paternal care and their experience of chronic pain. The analysis of these data is shown in Table 1.

**Null Hypothesis 4**

There will be no significant differences between perceived attitudes and behaviors about their fathers, as noted by adults experiencing chronic pain, as measured on the protection scale of the PBI and those scores, as noted by the normative population, on the protection scale of the PBI.

A $t$ test was employed to determine what significance may exist between the PBI scores from an adult sample of chronic pain patients and the PBI scores for the normative population. A $t$ score of 1.94910 was obtained. The findings of this analysis proved to be significant ($p=.03051$) at the .05 level and indicated that the null hypothesis should be rejected and the alternative hypothesis should be accepted. Thus, there is a significant relationship between subjects' perceived levels of paternal protection and their experience of chronic pain. The analysis of these data is
shown in Table 1.

Summary

The results of this study indicate that perceived levels of parental behaviors and attitudes of subjects in this samples are significantly related to the experience of chronic pain in adults as measured on the PBI. Further results of this study indicated that perceived attitudes of low care and high protection in this sample group, as measured by the PBI, are significantly related to the chronic pain experience in adults.
CHAPTER V

DISCUSSION, RECOMMENDATIONS, AND SUMMARY

Discussion

In the area of evaluation and treatment of adults experiencing chronic pain the meaning of pain and its etiology has become a topic of much research and interest. Within the literature there remains discussion as to the true nature of chronic pain. The notion of a valid psychological or physiological cause or a combination of the two has been debated for the past few decades (Blumer & Heilbronn, 1982) leading to a confusion over what modalities are effective in the treatment of those adults with chronic pain. The position taken by many treating professionals in the field of chronic pain is that there is a combination of physical and emotional factors involved in the etiology of chronic pain. Many psychologists involved in treatment of these individuals look for various instruments and evaluation tools that can measure certain psychological factors that may be important in the etiology and meaning of an individuals' pain, thus assisting various professionals in the treatment effort. The treatment professional has come to realize that when psychogenic factors are ignored, or not measured, the resulting treatment of the chronic pain patient may lack the necessary modalities that could prove helpful to the individual.
The purpose of this study was to look at the Parental Bonding Instrument (PBI) (Parker et al., 1979) as an evaluation tool that measures two developmental factors and their possible relationship to the experience of chronic pain in adults. These two developmental variables related to an individuals' safety were identified as care and protection (Parker, 1983). Parker developed the PBI as a tool to measure these variables and the PBI was used as the only research instrument in this study.

The first research question of this study was: Are low parental care and high parental protection significantly related to the experience of chronic pain in adults? This question was developed to determine if a certain style of parenting was significantly related to the experience of chronic pain in adults. Results of the scatter diagrams support the theoretical notion of the researcher that low care and high protection are tendencies in the realm of the parent/child bonding experience. When the PBI is intersected at the normative means established by Parker (1983) in normative studies, the PBI forms a “bonding instrument” that allows an individual to scan four broad styles of parenting. These four quadrants are as follows: Quadrant I-low care and high protection, affectionless control; Quadrant II-high care and high protection, affectionate constraint; Quadrant III-low care and low protection, neglectful parenting; Quadrant IV-high care and the absence of over protection, optimal parenting.

Results of the two scatter diagrams show that the sample scores from the PBI have a tendency to fall in to Quadrant I. These results
support the notion that low care and high protection may be related to the experience of chronic pain in adults.

In my opinion, this environment may create an unsafe state in the child that may take the form of a psychobiological phenomenon that may lead the child to "armor" that can be measured by an increase in muscle tension or an increase in their experience of pain.

The first hypothesis of this study was developed to determine if low maternal care, as perceived by an adult with chronic pain and measured on the PBI, is significant when compared with scores of a normative population. A t test was employed to determine if a significant difference did exist between the two sample means. The findings appear to support the notion that maternal low care is an antecedent for the experience of chronic pain in adults, thus the null hypothesis was rejected and the alternative hypothesis was accepted. These results indicated that the developmental variable of maternal care is significantly related to the experience of chronic pain in adults with the level being lower than reported by the normative population.

This finding is consistent with the literature on developmental bonding between the mother and the child (Bowlby, 1966; Joffe & Sandler, 1967; Mahler & Gosling, 1955). There is agreement regarding the idea of need gratification early on in the child’s development and a sense of safety in responding to its environment. These early attachment behaviors and attitudes between the child and the mother provide a foundation for the child to feel protected and safe in its development of meanings of
The third hypothesis was formulated to investigate the effect of perceived paternal attitudes and behaviors may have on the experience of chronic pain in adults. The same t test was employed to test this hypothesis. The findings support the notion that paternal care may be a significant factor in the experience of chronic pain in adults. These results add further support to the notion that the developmental variable of care is important in the development of a sense of safety in the child and that the child's perceived interaction with the father can embrace or retard this sense of safety response to the environment (Lamb, 1980).

In summary, the PBI may have an important use in the evaluation of adults experiencing chronic pain by measuring the care factor in the perceived memory of maternal and paternal attitudes and behaviors in the early bonding between the parent and the child.

The second hypothesis utilized the t test to test for a significance between perceived attitudes and behaviors of maternal protection. Results showed that a significance was established between the mean scores of the PBI for the sample and the mean scores of the normative population. The results of the data support the notion that maternal overprotection may prevent the formation of independent behavior on the part of the child, leading to infantilization (Parker & Lipscombe, 1981). This process, during the parent/child bonding period, may be involved in making the child feel less safe within the environment and causing the child to develop a protective armor. This may entail a psychobiological process that
affects the child in later adult behaviors.

In this investigation, the fourth hypothesis was concerned with the relationship between paternal protection and the experience of chronic pain in adults. The results of the t test show that a significance exists between the sample and the normative population at the p=.05 level. These findings suggest that the perceived attitudes and behaviors of the father may be an important factor in the identification of the etiology of chronic pain in adults. The results of this study point to the notion that the PBI can be used as a tool in measuring the variables of care and protection in adults in a chronic pain setting. The scales used together as a "bonding" instrument allow a professional to examine four broad styles of parenting that may be important when developing a treatment program. This information establishes a need to identify and develop treatment strategies that include a thorough childhood history and optional modes of psychotherapy.

Recommendations for Further Study

Further research is recommended based on the results of this study. While the results of this study point to a possible relationship between developmental variables of care and protection and the experience of chronic pain in adults, further study may determine the extent of this relationship.

Further research, including demographic data, sex, education, and social background of the individuals with chronic pain would be helpful in
determining the further usefulness of the PBI as an evaluation tool in the area of chronic pain. This would allow the researcher to control variables in the design of the study and allow more generalization of the results.

The present study compares the sample of participants to the normative studies by Parker (1983). To ensure greater control of relevant variables a current study that would compare samples of scores of adults with chronic pain to samples without chronic pain would be useful in determining the effectiveness of the PBI as an evaluation tool.

**Limitations**

The PBI seems to be useful in the evaluation of adults with chronic pain. The relevance of the interaction between perceived parental attitudes and behaviors of parents and the experience of chronic pain in adults has potential in determining the effects of psychogenic factors in this diagnosis. Statistical significance was shown in the results of this study, but the exact relationship of the individual scales could not be determined.

The limitation of a person’s perception of early parental behavior limits the objectivity of the instrument and was evident in this study. The perceived nature of the PBI places it in a subjective measurement category and increases the probability of Type I and II errors.

Further limitations that were apparent in this study is the small sample size that the data was drawn. The small size of the sample (N=30) make it necessary to interpret the data with caution and some skepticism.
A larger sample of adults experiencing chronic pain would lead to more confidence in the results and allow for more confidence in generalization of the results.

Conclusions

The purpose of this study was to examine the relationship between care and protection and the experience of chronic pain in adults. The results indicated that there is a significant relationship between the perceived attitudes of parental behavior and the existence of chronic pain in a person's adult life. The PBI proved to be a successful instrument in the evaluation of the possible psychogenic factors in the later experience of chronic pain.

The results lead to the conclusion that psychogenic factors, such as developmental variables, may be an important factor when determining treatment for chronic pain. A thorough evaluation procedure that does not include a developmental history may actually be detrimental to the patient. The use of the PBI as a tool for gaining significant information on early parent/child bonding and this later affect on a person's health may lead to a better understanding of the treatment of a serious problem.

In this current area of treatment for pain, the behavioral medicine approach is the most highly visible of the pain modalities (Whitehead & Kuhn, 1990). With this approach, developmental variables may be ignored. Patients are asked to not talk about their experiences of pain and pain is dealt with as a problem that can be addressed in a "mind over
body" manner. This study was developed with the idea that pain represents more of a psychogenic phenomenon that has roots in the parent/child bonding arena. Pain is thought to be more than a physical problem that can be addressed with behavioral tools and physical therapy. Developmental variables are important in the experience of an adult with chronic pain. The existence of these variables in the parent/child bond are important to understand and discuss in the overall treatment of the chronic pain patient. Instruments, such as the PBI, may prove useful in the assessment of the psychogenic factors that are involved in the chronic pain experience.

The focus of many people involved in research and treatment of chronic pain is in the development of new ideas and notions on the possible etiology of pain. While pain remains an interesting subject that defies easy explanation, the understanding of meanings to patients, and the mechanism of their pain becomes important. The past few decades have seen the medical community turn to and include the psychologist for assistance in dealing with this population of people. The interdisciplinary team approach, including psychologists, medical doctors and others, is thought by many to hold the most promise for the future treatment of chronic pain. This study offered a possible approach and instrument to assist the interdisciplinary team in identifying possible variables involved in the chronic pain experience.
APPENDICES
Appendix A

Parental Bonding Instrument
PLEASE NOTE

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

Appendix A, 54

University Microfilms International
Appendix B

Human Subjects Institutional Review Board Approval
Date: November 6, 1991
To: Daniel Welserer
From: Mary Anne Bunda, Chair
Re: HSIRB Project Number: 91-10-17

This letter will serve as confirmation that your research protocol, "Psychogenic factors and the experience of chronic pain in adults" has been approved under the annual category of review by the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

cc: Betz, CECP

Approval Termination: November 6, 1992
Appendix C

Individual Sample Scores
Individual Scores of the Sample Group on the PBI for the Care and Protection Scales.
(N = 30)

<table>
<thead>
<tr>
<th>Mother Care Scale</th>
<th>Mother Protection Scale</th>
<th>Father Care Scale</th>
<th>Father Protection Scale</th>
</tr>
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<tbody>
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